Privatising sustainable forestry

A global review of trends and challenges

May 1999

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Private sector participation (PSP) in the forestry sector has increased markedly over the past ten years. As governments had over greater responsibilities to private entities, they are increasingly adopting market-based intruments (MBIs) to encourage the private sector to act sustainably. In parallel, foestry authorities are be restructured to reflect the changing roles of the public sector.

The three trends summarised above represent the key findings of this report. drawing on information collected through a global survey, personal interviews, literature and Internet searches, the report documents experiences of forestry reforms in twenty-three countries around the world. The emphasis is on the following areas of reform:

1. Increased **PSP** in forest ownership, utilisation and management
2. The adoption of **MBI** to encourage sustainable forest management (SFM). The instruments considered include forest revenue systems, financial and material incentives, conditions attached to forest concessions, trade liberalisation, promotion of markets for non-timber forest benefits, forest certification and global transfers for forest conservation
3. Moves to **restructure forestry authorities** to increase their exposure to market forces through contracting out, corporatisation and privatisation.

While the report does not evaluate the reforms, it presents survey respondents' opinions on reasons for reforms, difficulties with reform and the success of reforms.

Country-level information is brought together in the final section to illustrate the broad trends over the past ten years. This reveals that all the countries examined have implemented, or are implementing, reforms to increase PSP in the forestry sector, all have introduced at least one MBI, and just under 70 per cent of the countries have restructured their forestry authorities, or are in the process of restructuring them.

The report goes on to identify the most frequently adopted reforms within each of the three categories. While the private sector is getting involved in forest ownership, utilisation and management, increased PSP is most notable for forest management. Of the MBIs investigated, financial incentives (e.g. subsidies, compensation payments, cheap loans and/or tax exemptions) have been the most widely implemented over the last decade, followed by the promotion of markets for non-timber forest benefits. Certification has been the third most common MBI employed. As regards forest authority reform, the most common form of restructuring has been contracting out, followed by privatisation and then corporatisation.

While the majority of reforms are based on well-known arguments, the report shows that in a few cases activity on the ground has preceded, or gone hand-in-hand, with research. This is true in the case of certification, company-community partnerships and measures to increase PSP in forest conservation. Such innovative developments are of interest for policy-makers and donors searching for new ways to promote SFM that may overcome hurdles met with more established techniques.

Having provided an insight into the dynamics of PSP in forestry, this report sets the stage for further research into PSP in sustainable forestry. A list of possible research questions is put forward in the last section.

Acknowledgments

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Acronyms

AFE-COHDEFOR	Administracion Forestal del Estado-Corporacion Hondurena de Desarrollo Forestal (Honduras)
CAC	Command and control
CAF	Forest Bond Certificate (Costa Rica)
CAFA	Pre-paid Forest Bond Certificate (Costa Rica)
CAFMA	Forest Management Bond Certificate (Costa Rica)
CCB	Forest Conservation Certificate (Costa Rica)
COHDEFOR	Corporacion Hondurena de Desarrollo Forestal (Honduras)
CPB	Forest Protection Certificate (Costa Rica)
CPI	Consumer Price Index
CTO	Certified Tradable Offsets (Costa Rica)
DWAF	Department of Water Affairs and Forestry (RSA)
EIA	Environmental impact assessment
FAN	Fundacion Amigos de la Naturaleza (Bolivia)
FDF	Forest Development Fund (Costa Rica)
FMA	Forest Management Agreement
FMP	Forest Management Plan
FOB	Free on Board
FONAFIFO	National Forestry Finance Fund (Costa Rica)
FSC	Forest Stewardship Council
FUNDECOR	Foundation for the Conservation of the Central Volcanic Range (Costa Rica)
GEF	Global Environment Facility
IMF	International Monetary Fund
INBio	National Institute of Biodiversity (Costa Rica)
LFA	Local Forest Areas (PNG)
MAP	Management Associated Programme (RSA)
MBI	Market-Based Instrument
NGO	Non-governmental Organisation
NKAP	Noel Kempff Action Project (Bolivia)
NTFP	Non-timber forest product
OCIC	Oficina Costarricense de Implementacion Conjunta (Costa Rica)
PFMC	Provincial Forest Management Committees (PNG)
PNG	Papua New Guinea
PSA	Payment for Environmental Services (Costa Rica)

PSP	Private Sector Participation
RSA	Republic of South Africa
SFE	State Forest Enterprise (Poland)
SFM	Sustainable Forest Management
SFS	State Forest Service (Latvia)
SGS	Society General Swiss
SINAC	National System of Conservation Areas (Costa Rica)
TA	Timber Authority (PNG)
TFA	Total forest area
TNC	The Nature Conservancy
TP	Timber Permit (PNG)
TRP	Timber Rights Purchase (PNG)
UK	United Kingdom
USA	United States of America
USIJI	United States Initiative on Joint Implementation
USFS	United States Department of Agriculture, Forest Service

Introduction

Increasing private sector participation?

Private sector participation (PSP) in the forestry sector has increased markedly over the past ten years. As governments around the world adopt more liberal market policies and are under pressure to reduce budget deficits, they are both loosening their direct control over private sector activity and are encouraging individuals, communities and firms to provide goods and services traditionally provided by government.

In many cases, forestry has been one of the last sectors to be affected by economic liberalisation. Concerns that the private sector would not take forests' environmental and social values into account when planning utilisation and management, and would have a tendency to overexploit the resource, have caused governments to think twice before reducing their control. In economic terms, forests are characterised by significant externalities which markets fail to reflect and which are left out of private decision-making. Governments can play a critical role in protecting these values.

While the problem of market failure and the need to protect valuable environmental benefits is widely appreciated, policy-makers have also increasingly accepted that government ownership and direct management of the resource is not necessarily the best solution. Imperfect information, rent seeking and high transaction costs are just some of the factors which mean that—just as markets fail—so can governments. Government failure may offset the benefits gained from forest protection. Moreover, it is not necessarily the case that the government will value forests' environmental benefits any more than private operators.

Finding a balance

To ensure that social, environmental and economic considerations all receive the attention they deserve, a balance between increased PSP and government control needs to be found. The nature of this balance will vary between

countries to reflect different societies' views and the institutional capacities of government and the private sector. Nevertheless, examples from all over the world indicate a shift towards greater PSP in forestry in recent years. Not only are governments encouraging increased private ownership of forests, but they are attempting to attract private interest in forest utilisation and management.

In parallel with the growth in PSP, many governments are introducing market-based instruments (MBIs) to help ensure that forest operators act sustainably. Moreover, to adapt to their new (often smaller) roles, governments are restructuring their forest authorities.

Despite growing interest in MBIs and widespread efforts to restructure forest authorities, governments' continue to rely heavily on 'command and control' (CAC) measures to regulate private sector operators in the forest sector[1]. Just as governments seek a balance between private sector and public involvement in forestry, they also seek a mix of controls and incentives to ensure sustainable forest management (SFM).

This review – considering the facts

Despite significant *ad hoc* evidence that the forestry sector is experiencing more PSP and an increased reliance on MBIs, there has been little overall assessment of experience to date. This report makes a start at filling the gap[2].

The report follows on from an IIED Issues Paper (Bass and Hearne, 1997) setting out the theory relating to PSP in sustainable forestry. The aim of this report is to offer an up-to-date picture of the dynamics of PSP in forestry around the world, to help in assessing the extent to which the theory has been put into practice. The report also sets the stage for the next phase of IIED's work in this area by helping to highlight research issues. Information for this report has been obtained from seventy-six countries, with a special focus on twenty-three countries where the forestry sector is highly significant and/or where considerable change is taking place. See Box 1.1 for details on how this report was prepared.

It is important to stress that because this report is concerned with broad trends it necessarily downplays variations between countries. This is not to say that such variations are unimportant, but they are not the focus of this report. In-depth country studies to be undertaken in a subsequent phase of IIED's project will concentrate on features particular to specific countries[3].

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1 CAC measures refer to those based on rules and regulations as opposed to incentive based measures which rely on price signals to guide private sector behaviour

2 See Annex II for a brief outline of IIED's three year research project looking into *Instruments for sustainable private sector forestry*.

3 Refer to Annex II for details on the planned country studies.

Moreover, time constraints have meant that this report has focused on cross-country comparisons for specific reforms and has left the issue of linkages between the different reforms to one side. Further country studies planned under the second phase of IIED's project will attempt to tackle this issue by presenting a unified picture of changes in PSP, the use of MBIs and reforms to the forest authorities in each country considered.

It should also be emphasised that this report is not concerned with large companies only. It employs a broad definition of the private sector, to include individuals, households, small firms and large companies acting to maximise their 'profit' from forestry activities. Profit is not necessarily defined in monetary terms, but in terms of personal gain. Individuals can profit from the extraction of fuelwood from forests, even if they use the wood domestically and it does not earn a monetary return. Community groups are not considered to be part of the private sector, although it is important to include individuals within a group where they have their own property rights and can act independently or where they form a registered company. For example, where the government contracts individual landowners in a community to monitor extraction by a third party, the government is considered to have increased PSP[4].

In section 2, this report sets out broad trends in increased PSP in forest ownership, utilisation and management. Although the utilisation of non-timber forest products (NTFPs) and environmental services is considered alongside timber products, there is less information regarding these at present and they are given less attention.

In section 3, the discussion turns to government moves to adopt economic instruments to influence private decision-making: in particular the use of forestry revenue systems, incentives, tenure arrangements, market controls and the promotion of NTFPs, environmental services, certification and global transfers.

Section 4 focuses on reforms under way in forest authorities to complement changes in the private sector's role, and to increase authorities' exposure to market forces as a way of improving performance.

Although this report does not attempt to evaluate individual reforms, section 5 reproduces views on reforms (the reasons for reform, difficulties encountered, and whether the reforms have had a positive impact on SFM) provided by country specialists and government officials who responded to a global survey. As such, it offers an early but incomplete insight into how successful reforms have been. The last section summarises the main trends in forest sector reform, including the introduction of innovative techniques, and highlights potential questions for further research.

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4 The definition of what is 'private', 'public', or 'community' may vary between, and even within, countries. To permit comparisons, we have applied this broad definition for the private sector to all the countries in the report.

Box 1.1 How this report was prepared

Information for this report was gathered from March to November 1998. The first stage of data collection involved a global survey. A copy of the survey and tables detailing the number of surveys administered and country and regional response rates are found in Annex I.

A total of 332 surveys was sent to forestry authorities and country specialists around the world. The survey was limited to those countries with significant forest resources and more than one survey was usually sent to each country, to provide a method of validating responses and to allow for individuals with different points of view to offer individual accounts. Of the 332 surveys for which responses were expected, 142 responses were completed, covering 76 countries. The regional distribution of the survey respondents is illustrated in Chart 1.1 below.

While the global survey has allowed the report to ensure up to date information, the responses often provided conflicting information. Wherever possible, follow-up questionnaires and personal interviews were administered to clarify points. Of a total 103 follow-up questionnaires sent out, 47 per cent responded.

Based on responses to the global survey, those countries undertaking forest sector reforms involving measures to increase PSP, the introduction of MBIs and/or forest authority restructuring were selected for further research. Literature and Internet searches were undertaken and, for those countries for which sufficient information could be gathered, detailed country profiles were written.

A total of twenty-three country profiles has been written covering countries from all regions around the world. The countries included are: Cameroon, Ghana, South Africa, China, India, Indonesia, Malaysia, Costa Rica, Honduras, Latvia, Poland, Slovenia, Russia, Canada, Mexico, USA, PNG, Bolivia, Brazil, Chile, Ireland, Finland and the UK[5]. Each profile follows a similar format, detailing reforms to increase PSP, the use of MBI to encourage SFM and forest authority restructuring. The last section of each profile reproduces opinions expressed by survey respondents relating to the reasons for reform, the difficulties encountered and the success of reforms in encouraging SFM. This report draws on these country profiles, to present an overview of changes under way in forestry sectors around the world. Individual country profiles can be found on IIED's Private Sector Forestry website: http:// www.iied.org/psf.

While the use of survey information has allowed this report to provide up to date pictures of reform processes, it has also meant that the information produced in country profiles has not always been independently validated. We have attempted to indicate wherever information has been provided by survey respondents and is not supported by documentation.

5 Russia is unusual as no survey was completed, but due to its position as the most forested country in the world it has been included. The profile is based on literature and Internet searches. Comments on the profile were obtained from one country specialist.

Chart 1.1 Regional distribution of completed surveys

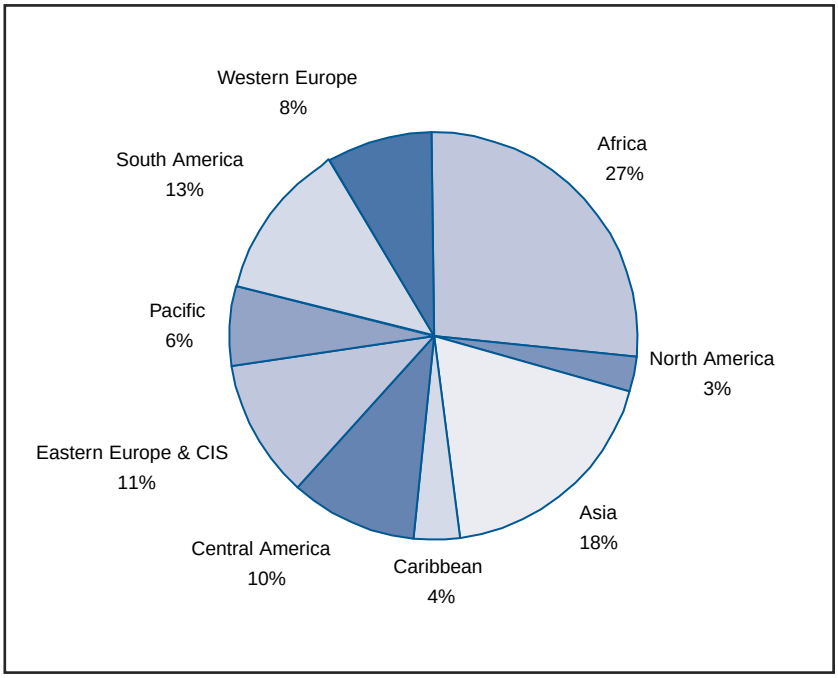

Photo: WWF / Stephen Bass

Eucalyptus plantation, Malawi

Private sector participation

This section examines the ways in which the private sector is involved in forestry, including:

- private ownership of forest land,
- direct participation in forest utilisation and management, and
- corporate-community partnerships.

The emphasis is on widespread and emerging trends in the countries surveyed[6].

2.1 Forest ownership

Table 2.1 highlights the breakdown of countries according to whether the private sector, state or community groups are the dominant forest owners. It identifies those countries where the private sector has been increasing its ownership as a share of the total forest area (TFA).

It should be stressed that ownership is considered here in its judicial sense, rather than as *de facto* control and exclusivity. This distinction is particularly important in the case of community owned forests. Where governments hold forests in trust for local communities, the resource is still considered to be community owned. Equally, where public forests are used freely by local communities, the resource is considered to be publicly owned. Constraints on forest use and management by owners are discussed in sections 2.2 and 2.3. See also Box 2.1 for an overview of 'community forestry'.

Apart from Eastern Europe and the Baltic States, where land is being returned to its former owners as part of a broader process of restitution, there has not been a major drive to privatise state forests. Chile and the UK stand out for their privatisation programmes. In Chile, between 1976 and 1985 all but a few

6 For further discussion of increased PSP in forestry see for example: Vincent et al (1992), Bass and Hearne (1997), Sharma et al (1994), Palo (1997), and World Bank (1997)

of the state plantations, amounting to about 1 million hectares, were privatised as part of a broader drive of increasing PSP in the economy. The UK's state Forestry Enterprise has sold about 10 per cent of its estate since 1981, although the sales were briefly halted in 1997 and are currently more limited than in earlier years.

The process of 'denationalisation' under way in the transitional economies since the break-up of the Soviet Union has varied considerably between countries. The maximum transfer expected in the countries considered is 10 per cent of the total forest area. At the other extreme, in Russia, there are no immediate plans to privatise forests. In Poland, where the private sector maintained a large share of forest ownership during the communist era, very little land has been handed back, due to political constraints and difficulties associated with proving former owners' identities. While a limited amount of restitution is also occurring in the Republic of South Africa (RSA), forest land is being returned to community groups rather than individuals.

Privatisation of public forests is not the only way the private sector has been able to increase its share of forest ownership. Afforestation in private and state land, often in response to reforms to promote planting, has been even more widespread, leading to increased private forest ownership in Ghana, RSA, Costa Rica, Mexico, Chile, Brazil, Ireland and the UK.

Table 2.1 Private sector, community and state forest ownership

Category	Countries	Comments
Private sector dominant	RSA	>70% plantations; 43% natural forests
	Slovenia	70% TFA
	USA	58% TFA; 73% productive timberland
	Chile	75% TFA
	Finland	67% TFA; 82% growing stock
	UK	65% TFA; including forests leased to Forestry Commission
Community dominant	Ghana	100% natural forests; 10% plantations
	China	100% TFA
	India	(see 'state dominant' below)
	Mexico	<90% TFA
	PNG	99.8% TFA
State dominant	Cameroon	<100% TFA
	India	85% including all natural forests (note: many areas are de facto community forests)
	Indonesia	100% natural forests
	Malaysia	100% natural forests
	Costa Rica	72% natural forests
	Honduras	54% TFA

	Latvia	52% TFA
	Poland	82% TFA
	Russia	100% Forest Fund; unclear share of forests outside the Fund (e.g. in farmland, cities, etc)
	Bolivia	100% natural forest; 51% forest land
	Brazil	most of the Amazon Region
	Canada	93% TFA
	Ireland	75% TFA
PSP Increasing	Ghana	private planting
	RSA	private planting
	Costa Rica	private planting
	Latvia	restitution; expect increase of 10%
	Poland	restitution planned, but not yet implemented
	Slovenia	restitution; expect increase of 10%
	Mexico	private ownership of *ejido* land since 1992; private planting: 80% total plantation
	Brazil	private planting
	Chile	most state plantations privatised 1976-85; private planting since mid-70s
	Ireland	private planting
	UK	privatisation of 10% state forests since 1981; slowed since 1997; private planting

2.2 Forest use

2.2.1 Timber

Private forests

Private forest utilisation for timber tends to be undertaken by land-owners themselves or by contracted logging companies. In some countries, such as the transitional economies, until recently the state was often directly involved in harvesting from private forests, but its grip has been loosened and its main influence is now through controls imposed on private operators.

Government controls over private sector utilisation of forests come in many forms. At one extreme, governments prohibit significant use of private forests without their permission and impose strict conditions. This is the case in the transitional economies considered and Honduras, Bolivia, India, Ireland and the UK. Other countries control private extraction indirectly, through requirements relating to forest management (see section 2.3.2).

State forests

Not only is the private sector active in its own forests, but PSP is common in state forest utilisation. Moreover, the role of the private sector has increased in most countries over the last ten years. There are three main types of arrangements used to harness private inputs in harvesting including:

- concession or lease arrangements,
- volume permits or standing timber sales, and
- contractual arrangements where the forest authority hires a professional logging company

In general, concession/lease arrangements give the private operator rights to the standing timber in a defined area for a specific period of time and require the lessor to undertake specified forest management. The sale of standing timber or volume permits are defined in terms of a specified stand of timber or volume to be extracted immediately and forest management requirements are rarely attached. The timber is the property of the logger. In the case of contracted private loggers, the state agency does not hand over timber property rights, but pays the operator a pre-determined fee for the extraction of a defined stand of timber. The timber is then sold by the state agency.

In practice, countries may combine a variety of arrangements for different forest users. In Table 2.2 an attempt is made to categorise countries; where they operate more than one arrangement, they are listed more than once. Comments are given, setting out the name given to the national arrangement and highlighting where changes are under way. Chart 2.1 portrays the information graphically to highlight the relative importance of the three most common arrangements according to the number of countries using each one.

Chart 2.1 Mechanisms for organising state forest use by the private sector

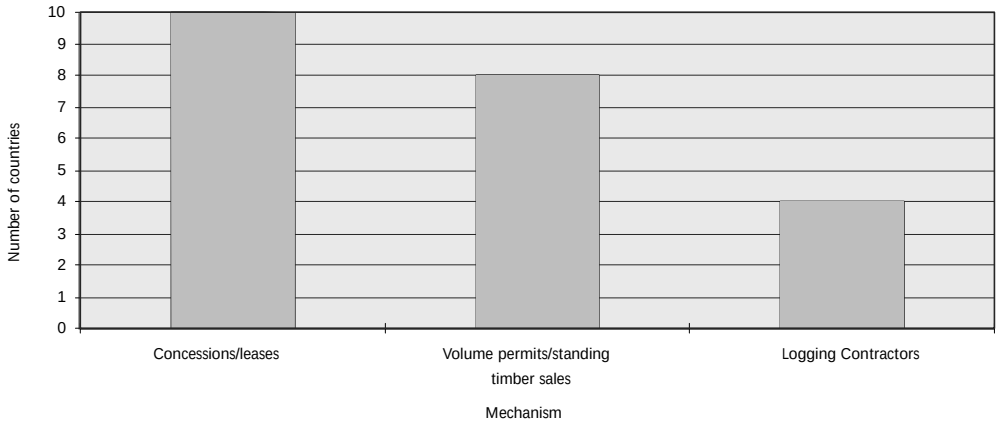

Table 2.2 State forest use by the private sector

Mechanism	Countries	Years of reform	Comments
Concessions/ leases	Cameroon	>10 years	Concession, *Ventes de Coupe*; reformed 1994
	RSA	1999	35 year leases being introduced in state forests to privatise the state's industrial plantations
	India	proposal	Leases in wastelands for afforestation
	Indonesia	since 1967	Concessions in production forests
	Malaysia	since 1978	Concessions in federal production forests (PFE); licences in state land forests
	Latvia	since 1992	Long-term utilisation contracts; proposal for 99 year lease
	Russia	since 1993/7	Up to 49 year leases; concessions, free of charge rights and shorter term licences; felling permit, wood permit or authorisation required prior to harvesting
	Slovenia	since 1993	Concessions
	Canada	> 10 years	Long-term (20-25 years) contracts; varies between provinces
	Bolivia	since 1974	40 year concessions replaced 20 year contracts in 1996
	Brazil	> 10 years	Licences; considering concessions in National Forests
Volume permits/ standing timber sales	Cameroon	>10 years	*Permis de Coupe, Authorisation Personnelle*; reformed in 1994
	Indonesia	since 1967	Timber utilisation permits in conversion forests, area based
	Honduras	since 1992	Sales of standing timber
	Latvia	since 1992	Sales of standing timber
	USA	>10 years	Sales of standing timber from National Forests
	Canada	>10 years	Volume allotments (up to 20 years); varies by province
	Ireland	since 1989	Sale of standing timber
	UK	> 10 years	Sale of standing timber
Contractors	Poland	since 1989	Increasing
	Finland		increasing
	Ireland	since 1989	
	UK		increasing

Concessional/lease arrangements are the most widespread type of utilisation contract, and are growing in importance. For example, RSA is planning on introducing leases in the near future and India has been considering proposals for leases in degraded lands.

Over the last decade, Honduras, Latvia, Poland, Slovenia, Russia, Finland and the UK have all increased PSP in utilisation, employing one of the three mechanisms. In many cases the conditions attached to utilisation arrangements have also changed. Cameroon and Bolivia have reformed their concession systems over the last decade and Brazil is currently considering such a reform. The details of tenure conditions attached to forest concessions are considered in section 3.3.

Community forests[7]

PSP in community forests in Ghana, RSA, China, India, Mexico and PNG has traditionally been organised by the state rather than by the land-owning groups. In Ghana, for example, the state has restricted landowners rights to fell their own trees or to sell the rights to trees to third parties, although this is now changing. In Mexico, until 1986, the government issued concessions to private operators in *ejido* lands (communal holdings) with little local consultation. Disenfranchisement has been important in undermining communities' interests in protecting forest resources.

In recent years, governments in all these countries have handed varying degrees of control back to communities. India was among the first to allow for the return of limited control for forest use to village communities under its 1988 Forest Policy[8]. The devolution of control, however, was negotiated and the government retained key powers. For instance, it prohibited the use of these forests for industrial purposes and communities do not have the authority to negotiate with third parties. Furthermore, the lands concerned are often of the lowest quality. In PNG and, more recently, in Ghana, community groups have a legal right to participate in drawing up contracts between the government and private operators and can veto operators with which they are unhappy. In RSA, the government has introduced mechanisms for returning ownership rights to woodlands in the former Homelands to the landowners and for ensuring that, where forests are utilised by a third party, the fees paid by private companies go to the landowners. In China, the state has decentralised control of forests to collectives which have, in turn, often handed control to individuals and village groups[9]. In Mexico, a constitutional amendment in 1992 has given communities the legal right to utilise and manage forest to which previously they had only usufruct rights.

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7 See section 2.1 for definition of community forests used in this report; only those countries where community forests represent the major share of the TFA are considered.
8 While the policy allowed for the return of responsibilities to communities, implementation waited until 2 years later when states began issuing joint forest management orders.
9 See section 2.4 for a discussion of emerging company-community partnerships

Moves to increase community participation in forest use reflect a wider shift in emphasis around the world towards 'community' and 'participatory' forestry. Box 2.1 briefly outlines the main components of this strategy.

Box 2.1 Community forestry – an evolving approach

Community forestry can be seen as a sub-set of a broader group of participatory forestry approaches including farm forestry and social forestry—which began to be promoted in the forestry sector in the seventies—and collaborative, co-management and joint forest management—which have been increasingly widely adopted since the late eighties and nineties. All share some key features. According to a recent manual on 'People and Forests' by FAO (1997b), community forestry can be defined by three main characteristics:

- supporting the control, management and use of forest and tree resources by local communities
- exploring the social, economic and cultural relationships between people and forests
- implying a decentralised and participatory approach to forest management, which assumes that the best stewards of the world's forests are the populations living in and around them

Whilst this general definition is useful, real world experience reveals a high degree of variation in approach and level of success. Not only have governments varied in the type of forestry activity which they have decentralised to communities, but they vary in the degree to which they have relinquished decision-making power. Hobley (1996) and Arnold (1998) provide useful overviews of the learning from experience which has occurred to date.

The most significant achievement of the community forestry approach has been to focus policy-makers' attention on the need for governments and other stakeholders to support local people in managing their forest resources, not to keep them out. The approach also requires that governments recognise the need for forest management to be compatible with rural development, and for partnerships with local communities to be formed to realise this. However, there is clearly no single institutional formula for success in all countries.

Not all states have devolved much authority over forest resources, despite the trend towards greater community involvement. In all the countries considered by this report, apart from India where industrial utilisation has been banned, the governments continue to draw up contracts with private operators in community lands. Box 2.2 provides a closer look at changes to PSP in PNG's community forests.

PSP overall

It should be noted that state enterprises and community groups are still actively involved in extraction in many countries. Precise figures on the importance of the private sector in total timber production are not always available, but estimates are given in Table 1 of Annex III.

Box 2.2 PSP in community forests: Experience in Papua New Guinea

PNG provides a fascinating example of the complex tripartite relationships which can evolve between communities, companies and the government in countries where communities dominate forest ownership and private companies dominate extraction.

A bit of background – communities and logging rights

Community forests in PNG account for 99.8 per cent of the total forest area. Under the old Forest Act, the government controlled forest utilisation through a system of Timber Permits (TPs) and Local Forest Areas (LFAs). TPs were allocated to logging companies by the Department of Forestry (now the National Forestry Authority) once it had acquired the rights to timber from the communities through Timber Rights Purchase (TRP) agreements. TRPs required 100 per cent consent of the males in local communities. In 1992, over 50 per cent of the TPs were allocated to landowner companies, formed by landowner groups in order to apply for TPs, and often sold on to logging companies. LFAs were created when local landowner groups sold harvesting rights directly to logging companies. Although the creation of LFAs required the permission of the Minister for Forestry, they were not required to follow any particular format and a wide variety of contracts existed (and still exist).

Although the customary landowners' control over the allocation of forests to logging companies was guaranteed under the old Forest Act, in practice their power has been limited. The government and logging companies have been known to manipulate community support for the issuance of logging rights. In some cases, this support was gained by bribing community representatives, especially those who managed landowner companies.

Restoring communities' rights?

A primary aim of the new Forest Act, gazetted in 1992, was to restore communities' rights to allocate logging concessions and to ensure that the landowners received a larger share of the resource rents collected through a variety of forestry charges. TRPs and LFAs were abolished in favour of a uniform system of Forest Management Agreements (FMAs) between the government and land-owning communities. Landowners had to be represented by at least 75 per cent of the adult resident members of land-owning groups or by land-owning companies. The FMAs set out the potential for commercial timber extraction and the communities' share of revenues from forest utilisation. Where individuals do not support an agreement, or where land is disputed, these areas may be excluded from the FMA and would not be accessible to logging companies.

With FMAs in place, the government can commission a 'Development Options Study' by Provincial Forest Management Committees (PFMC), in consultation with local communities, and then ask for expressions of interests by companies. Applicants submit provisional proposals which are vetted by the PFMC which decides whether a formal application should be permitted. If accepted, the government can issue a TP.

Remaining challenges

It is too early to assess whether the new allocation procedure will result in a real increase in community involvement in private sector utilisation of forests. Nevertheless, critical challenges to the new system are clear:

- Firstly, it is worrying that early evidence suggests that the development of FMAs has been driven by logging companies, rather than by communities.

- Secondly, the problem of whether land-owning companies, or hastily developed 'land groups', are truly representative of the often diverse communities living in an area has not gone away.
- Thirdly, companies planning to extract less than 5,000 cubic metres per year or planning to undertake salvage operations, and companies which already have TPs and wish to extend their areas, can avoid the application procedure outlined above. These exceptions have already been manipulated by companies to gain access to new areas without following the procedural guidelines outlined above.
- A fourth challenge to the new system is that companies may bypass the allocation procedure by applying to undertake so-called agro-forestry or road construction projects. In many cases these projects simply aim to convert natural forest into tree-crop plantations.

Whether the balance of power between communities, companies and the government in resource allocation will shift in favour of land-owning communities is not yet clear. The process and the outcome, however, is worth watching as it is likely to hold important lessons for other countries trying to find a workable balance of rights and responsibilities in community forests. Not only will the outcome hold important implications for the communities' interests in ensuring SFM, but companies' incentives for forestry investment will be affected.

2.2.2 Non-timber forest products and environmental services

In addition to timber extraction, the private sector is involved in the utilisation of forests for a wide variety of non-timber forest products (NTFPs) and environmental services. Such uses are not as well documented as timber extraction, but here also the role and extent of private sector participation is changing.

NTFPs

NTFPs tend to be collected by rural households for domestic use, and few statistics are kept on their extraction. Where use is regulated through, e.g. volume based permits, enforcement is often patchy, due to the perceived low value of the products, the small-scale of production units (often individuals or families) and the resulting high costs of regulation.

Although there is limited data concerning precise volumes and values of NTFP use, the importance of such products is highlighted for many countries. Table 2.3 provides examples of NTFPs extracted by the private sector in different countries; it indicates where permits are used to regulate extraction from public forests and where such permits have been introduced in the past ten years.

Table 2.3 Examples of NTFP utilisation by the private sector

Countries	Products	Permits and years in place
Cameroon	firewood, fruits, bush meat, kola nuts, spices, chewing sticks, rattan, and canes	Permits issued for commercialised products, e.g. Prunus africana bark used for medicinal purposes; >10 years. Plans to auction hunting/game licences
Ghana	as above	Permits issued for most traded products
RSA	firewood, food, animal meat, traditional medicine, and curios	Licences for hunting and fishing allowed under new Forest Act (1998)
China	fruit, oil, industrial materials, medicinal herbs, spices, bamboo, and chemicals	Commercialised products organised through state companies, but some NTFP extraction in State Farms contracted to individual households since early eighties
India	firewood, fruits, nuts, bidi leaf, medicinal herbs, oils, gums, and bamboo	Licences for valuable products; normally for one season; >10 years
Indonesia	resins, gums, gaharu, sago, tengkawang,kayu putih oil, and medicinal plants	Permits issued to local communities. State companies dominate resin extraction; >10 years
Malaysia	resins, bamboo, gum, medicinal plants, firewood, fruits, rattan, petai (seeds), durain, etc.	Some states issue licences for commercial NTFPs, e.g. bamboo, rattan, petai (seeds) and durain
Honduras	pine resin, liquid amber, fuel wood, pine seeds, etc.	Approved management plan required. Community groups granted long term usufruct rights since 1992
Poland	wild fruits, berries, medicinal herbs, mushrooms, and animal meat	Volume permits issued for commercial berry, fruit and mushroom collection since 1991, animal meat licences since 1959
Russia	berries, fruit, medicinal herbs, and animal meat	Annual felling permits or authorisations for commercialised products since 1981.
Slovenia	wild fruits, berries, mushrooms, chestnuts, medicinal herbs, and animal meat	Permits for hunting
Mexico	pine resin, firewood, charcoal, plant fibres, gum, wax, and rhizomes	Informally organised by local communities
USA	wild fruit, berries, mushrooms, animal meat, and Christmas trees	Permits for most commercial extraction; >10 years
PNG	fruits, nuts, tannin, rattan, animal meat, insects, orchids, and butterflies	Permits issued for orchids, butterflies and fauna

Bolivia	Brazil nuts, palm heart, and rubber (goma)	Concessions; may overlap with timber concessions; >10 years
Brazil	rubber, Brazil nuts, oils, insecticides, palm heart, fruits, berries, and wild meat	Permits for commercial extraction from National Forests; >10 years
Finland	wild berries, mushrooms, animal meat, fish, Christmas trees, and lichen	Permits for fishing, hunting, moss and lichen collection; >10 years
UK	deer meat/trophies	permits for deer meat/trophies

Environmental services

Forests provide a wide range of environmental services, including the protection of watersheds, wildlife habitat, amenity values and carbon storage. Unlike NTFPs and timber, environmental services are not physically extracted from the forest, and it is more difficult to assess their use and value. This is particularly the case for global services, such as carbon sequestration and biodiversity. Rather than focusing on PSP in the use of environmental services, this section is concerned with PSP in their provision. We focus on private entities' involvement in efforts to manage forest areas to provide these services.

In most countries, the private sector has not shown much interest in conservation as an alternative to timber or NTFP extraction. The creation of protected areas has tended to be a state activity. This picture, however, is changing as forest owners begin to capture revenue from activities such as tourism, bio-prospecting and carbon storage. The potential of eco-tourism and recreation as alternative forest uses is attracting increasing private sector investment in RSA, Indonesia, Costa Rica, Honduras, the USA, Chile and the UK. Conservation by individuals, communities or firms for bio-prospecting is also beginning to be taken up in some areas of Costa Rica and PNG. Many of these countries—and others which have not yet experienced an increase in private conservation—are drafting or have drafted legislation to encourage such investment. This is the case in Bolivia and India[10]. Costa Rica's advanced approach to promoting PSP in the provision of environmental services is of special note, and is outlined in Box 2.3 below.

10 See also section 3.5 on the promotion of NTFPs and environmental services.

Box 2.3 Capturing global willingness to pay for forests' environmental services: Costa Rica as a centre of innovation

Costa Rica's pioneering efforts to capture values—especially global values—associated with its forests' environmental services are admired by policy makers and academics throughout the world. Its earliest attempts focused on developing the country as an eco-tourism destination, promoting private investment in infrastructure related to forest tourism and charging tourists for access to its forests. More recently it has been developing infrastructure for selling rights to explore its forests' genetic reserves, for selling carbon sequestration services and, at the domestic level, for selling rights to watershed protection. Although, the government has played a critical role in providing the framework for capturing finance and has, in the case of bio-prospecting and carbon sequestration, been the main supplier of forests, the private sector has become increasingly involved. Currently, the National Network of Private Reserves covers 250,000 hectares, equivalent to half the privately-owned natural forest area.

Eco-tourism

Costa Rica is known the world over as a destination for eco-tourists. With 58 per cent of all tourists visiting the country engaging in some form of eco-tourism activity, private land-owners have been quick to recognise the potential of eco-tourism to capture the biodiversity value of their forests. Today half the private forest area, amounting to 250,000 hectares, has been set aside from timber extraction as the National Network of Private Reserves.

Bio-prospecting

The National Institute of Biodiversity (INBio) is a parastatal organisation established in 1989 to develop a national bio-prospecting strategy and mechanism for capturing biodiversity values. The first bio-prospecting deal was signed between INBio and Merck & Co, a pharmaceutical company. Under the two-year, US $1.135 million contract, INBio agreed to supply Merck's drug screening programme with plant and insect extracts. A number of other contracts have since been signed with, inter alia, Bristol Myers Squibb, Givaudan Roure and The British Technology Group.

To date, private forest owners have not been directly involved in the provision of forests for INBio's contracts. The majority of funds are either kept by INBio or are distributed to the National System of Conservation Areas (SINAC) in return for access to National Parks. Fifty per cent of any royalties INBio receives goes to the National Parks. Between 1992 and 1996, SINAC received approximately US$200,000 from research agreements in return for access. There are, however, benefit-sharing arrangements included within contracts which INBio negotiates, but they make up a small share of the contracts' total value. It remains to be seen whether bio-prospecting will provide an economic incentive for local land-owners to conserve forest resources.

Carbon sequestration

In 1994 the national programme of carbon offsets was established under the Costa Rican Office of Joint Implementation (OCIC). The programme aims to generate carbon offsets from forest conservation and reforestation activities. Certified Tradable Offsets (CTOs) are then sold internationally.

The OCIC has made a number of United States Initiative on Joint Implementation (USIJI) approved agreements with companies in Europe and North America, including a US$1 million deal with Tenaska Washington Partners II, Ltd. signed in 1994. A joint government/private sector Norwegian consortium also purchased US$2 million worth of CTOs.

Although private landowners do not yet negotiate the sale of CTO directly, they receive funds from the government through incentive mechanisms such as the Forest Conservation Certificates (CCB) and the Payments for Environmental Services (PSA) scheme. Under these schemes, private landowners are compensated for setting aside their forests for conservation. More recently a Private Forestry Project has been proposed which would sell carbon credits in private forests. More details on these schemes is provided in Box 3.3.

Trading of CTOs was set to increase from late 1998, when the Centre for Financial Products Costa Rica, together with the World Bank and the Earth Council, plans to launch the first international emission trading mechanism and sell CTOs on the Chicago Board of Trade. With increased finance available for carbon storage, it is likely that PSP will also grow.

Watershed protection
In addition to selling environmental services to foreign buyers, the government has set up a Foundation for the Conservation of the Central Volcanic Range (FUNDECOR), to organise hydro-electricity companies' payments to local forest owners in the Central Volcanic Range for forest watershed protection. Two projects, Don Pedro Hydroelectric S.A. and Rio Volcan S.A., both owned by the Global Energy Company, pay FUNDECOR US$10 per hectare for environmental services. This payment is passed on to local forest owners to ensure the protection of forests in adjoining hydro-power water catchment areas.

2.3 Forest management

2.3.1 State and community forests

Forest management has changed markedly over the last decade. As governments have handed over rights for forest utilisation to private operators, they have also increasingly handed over forest management responsibilities. There are two main transfer mechanisms. Where concessions or lease arrangements in state or community forests already exist, forest authorities have added forest management conditions. Where the state retains responsibility for forest management, it has increasingly contracted private firms and individuals to perform tasks such as inventories, boundary demarcation, planning, silviculture, reforestation and monitoring. In community-owned forests, landowners are being given a greater say in forest management plans (FMPs) drawn up between the government and third party operators, and they are increasingly involved in monitoring the operators' adherence to forest laws.

Table 2.4 highlights the variety of forest management activities being handed to private operators in different countries. Not only do management requirements attached to contacts vary, but the degree to which state authorities rely on

contracted inputs differs. Ireland's state forest enterprise relies almost entirely on private firms to supply management services, while RSA's state authority undertakes all the physical work itself apart from inventories and training, which it contracts out. Brazil stands out for its indirect approach to increasing the private sector's input in forest management; its experience is dealt with in greater detail in Box 2.4.

Box 2.4 Brazil – a recipe for improved control?

The task of controlling the dispersed network of private frontier settlers in Brazil would be difficult. Instead, the government requires that the largest consumers of logs, i.e. processing companies using over 10,000 m^3 per year, undertake inventories and prepare FMPs or reforestation plans for areas from which they extract timber. Moreover, from 1989 those companies using over 12,000 m^3 per year must ensure the FMP is implemented on at least 40 per cent of the lands which supply their inputs. The processors may do this by entering into agreements with private land owners or by investing in forest management in their own lands. When they enter agreements with land owners, they have the option of undertaking forest management themselves or financing professionals to do it. Companies using between 4,000 and 12,000 m3 per year are also required to contribute to forest management either by undertaking reforestation in areas from which they extract timber (often in co-operation with other processors) or by paying a reforestation tax. Smaller timber users are simply required to pay the reforestation tax.

Although this approach of devolving forest management monitoring to the larger timber processors appears to be a neat solution to the problems of supervising Brazil's vast forests, in practice implementation has been difficult. Processors are known to evade the requirements through a process called log 'laundering'. This occurs where processors produce FMPs for areas they do not use, while continuing to buy logs illegally from frontier areas, thereby avoiding the additional costs of forest management. IBAMA, the central forest authority, lacks the resources to monitor where timber is sourced and such practices often go unpunished.

Brazil's experience highlights the importance of continued government involvement in monitoring forest management, and the difficulties of delegating field-level supervision to private bodies where those involved have no incentive to do a thorough job. For private sector involvement to be beneficial, the government needs to ensure that there are incentives in place to encourage co-operation.

It must be stressed that Table 2.4 outlines the forest management activities that national legislation requires. This does not always mean that the prescribed activities are actually carried out, as highlighted in Box 2.4 on Brazil. In poorer countries, lack of field officers to monitor implementation and private operators' lack of resources to implement the requirements means that actual forest management often lags behind changes in legislation.

2.3.2 Private forests

Forest management on private lands has tended to be the responsibility of the landowner. Increasingly, however, the government has become active in ensuring private forests are managed according to a minimum set of standards.

Table 2.4 Forest management by private operators in state and community forests

Mechanism	Countries	Date Reform	EIA	Inventory	FMP	Boundary Demarcation	Tree marking	Silviculture	Chemical Treatment	Reforestation Regeneration	Road Construction / Maintenance	Social Infrastructure	Training	Monitoring	Certification/ Auditing
Conditions	Cameroon	1994		✓	✓	✓	✓	✓			✓	✓			
Attached to	Ghana	1997	✓	✓	✓			✓							
Concessions/	RSA	not yet defined													
Leases	Indonesia		✓		✓	✓	✓	✓		✓	✓	✓	✓		
	Malaysia				✓		✓		✓[1]		✓			✓	
	Honduras	1992	✓	✓	✓[2]			✓	✓	✓	✓				
	Russia	1993/7						✓		✓					
	Slovenia	1993			✓[3]		✓	✓		✓	✓				
	Latvia	1992						✓		✓[4]					
	Canada		✓	✓	✓	✓	✓	✓			✓				
	Bolivia	1996	✓		✓		✓	✓		✓	✓				✓
	PNG	1992	✓	✓	✓	✓		✓			✓	✓			
Contracted	RSA			✓									✓		
Services	India		✓					✓[5]					✓		
	Malaysia			✓		✓		✓		✓					✓
	Honduras			✓			✓	✓			✓				
	Poland	1989		✓	✓			✓		✓	✓				
	USA							✓			✓[6]				
	UK			✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
	Ireland		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Landowner	Ghana	1995			✓									✓	
Involvement	PNG				✓									✓	
	China	1986								✓					
	Mexico	1992	✓	✓	✓	✓	✓	✓	✓	✓	✓				
	RSA	not yet defined													
	Brazil	mid-80s		✓	✓				✓	✓	✓				

Notes
1 in plantations
2 attached to harvest rights, not concession
3 with the state
4 would increase if 99 year leases introduced
5 in state plantations
6 during peak demand

Governments are asking owners to undertake silvicultural treatments, to ensure forest regeneration and to protect valuable ecosystems. In a few cases, new legislation is being passed to require private forests to adhere to the same requirements as applied in state forests.

Government controls over private forest management has increased in the past ten years in RSA, Costa Rica, Honduras, Bolivia, Brazil, Chile, Finland, Ireland and the UK. Although the trend is towards greater regulation of private forests, Box 2.5 highlights how the opposite is true in Eastern Europe and the Baltic states.

Box 2.5 Private forests in Eastern Europe and the Baltic States[11]

In Eastern Europe and the Baltic states, governments have always tightly controlled forestry in private lands and have often been involved in forest management. In line with economic liberalisation and the return of private property rights in these countries, controls over forest management have been gradually reduced. Moreover, cuts in government budgets have necessitated reductions in field-level services. Rather than forest owners being presented with a detailed operating plan setting out exactly what volume they are to extract and which trees are to be felled, the details of activities to be undertaken have been increasingly left to the owners' discretion.

Liberalisation has, however, been far from smooth in most countries. It has been held back, and in some cases partially reversed, by a desire to ensure forest conservation. There is a concern that, left alone, the private sector would quickly clear its forests for financial gain. With declining real incomes, as was experienced in many transitional economies in the first few years of reform, the willingness of owners to take a long-term perspective weakened. To avoid widespread forest clearance, most state forest authorities have retained considerable influence over private forest management, requiring permission to be granted before felling can take place, imposing penalties for failing to comply with new forest acts, and introducing incentive schemes to encourage adherence to the laws.

Different countries have emphasised specific instruments to control private forest management. In Slovenia, the emphasis is on encouraging private owners to undertake tasks such as forest protection, regeneration and tending pole stands through a system of subsidies. In many cases, the state still plays an active role in implementing forest management in private forests and it continues to take joint-responsibility with owners for site-level FMPs. In Poland, in contrast, the emphasis is on government control and owners are expected to pay for most of their own management. Latvia, recognising the limitations to private owners' ability to pay for significant forest management, is reforming its approach from a reliance on controls towards a system closer to that employed in Slovenia, based on a mixture of regulations and incentives.

Methods for implementing the higher standards in private forests vary, with some countries introducing severe penalties for non-compliance, while others rely on moral persuasion and economic incentives. In some cases, the private sector is self-regulating. Self-regulation is more common in countries where certification is

11 Based on IIED's country profiles for Latvia, Poland and Slovenia; Russia is not relevant to this Box as all its forests are state owned.

becoming important, such as Canada and the USA[12]. Where buyers are demanding that producers become certified and a direct link between profitability and sustainable forestry can be made, operators are far more inclined to adopt improved management standards. Markets for certified timber currently account for a tiny proportion of national or global demand for forest products, but the sector is growing fast[13].

2.3.3 National and regional activities

In addition to increasing its role in forest management at the forest-unit level, the private sector is increasingly called upon to provide national- or regional-level services such as inventories, FMP, silviculture, monitoring, research and training[14]. Contracting out can offer forestry administrations an opportunity to cut their costs without reducing services. In a few cases, such as Honduras and Costa Rica, governments have gone a step further—they have privatised services and given up responsibility for their provision.

Private involvement in national- or regional-level activities is not only contracted by governments, but private entities group together to form associations to represent private interests in public fora, lobby the government concerning forest policy and provide services not provided by the government. Services provided by private associations cover a range of activities including advice on marketing and exporting, technical help in forest management, training and research and public relations. These activities are normally funded through membership fees and service charges. As the private sector has expanded into new areas and greater demands are made of forest owners to perform forest management tasks, associations have expanded to provide support.

PSP at the national level is not always initiated by the government or private associations. It may result from a combination of forces. The government may contract a private association to do work for the government, or may subsidise private associations in recognition of the public benefits they provide, or may even be the association's main financier. In the case of the government taking a dominant role in private associations, the association may be described as a quasi-public body.

Table 2.5 below summarises information for PSP in national/regional-level activities, according to whether they are contracted by the government, privatised, supplied by private associations, or quasi-public. Chart 2.2 illustrates the data graphically and shows that the most common way in which the private sector has become involved at a national or regional level is through private associations.

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12 Information on certification is found in section 3.6.

13 Refer to Annex III, Table 2 for a detailed breakdown of country examples for government regulation and self-regulation concerning forest management in private forests.

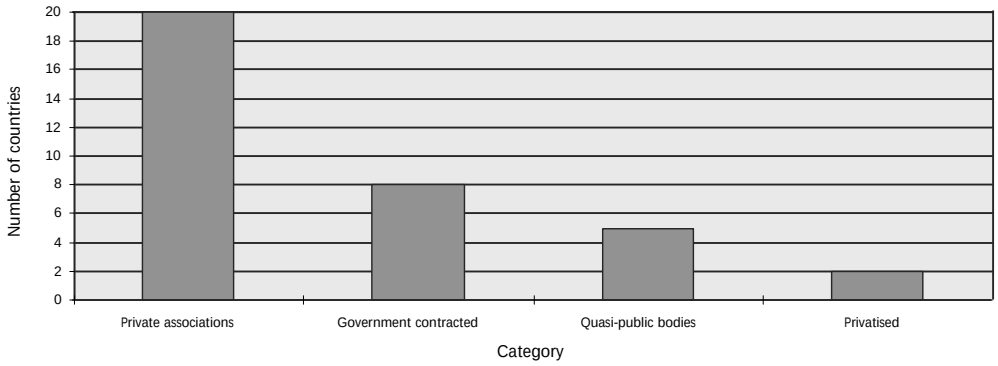
14 National/regional-level forest management refers to those activities that span more than one forest management unit and which often include private, state and community forests. Where the state owns all forests, activities conducted by the private sector in state forests can also be considered as national-level activities. PSP in state forests, summarised in Table 2.4, may reappear in Table 2.5.

Table 2.5 PSP in national/regional-level forest management

Category	Countries	Date reform	National/regional activities
Government contracted	Cameroon	1994	SGS Forestry hired to monitor exports
	Malaysia	early 90s	see also Table 2.4. Activities are done by contractors for large areas as well as for forest management units
	Honduras	1992	Contractors used for forest regeneration monitoring and the preparation of state forest auctions
	Poland	early 90s	Five companies licensed to undertake FMP; others undertake inventories and silviculture work
	Slovenia	early 90s	Training, road construction and maintenance and tree nurseries
	Latvia		One company licensed to undertake FMP; others hired to undertake boundary demarcation, thinning, etc.
	Bolivia	Proposed	Hire company to run road check points
	PNG	1994	SGS hired to monitor exports (initially with support from the EC)
	Finland	>10 yrs	Road construction and management
Privatised	Costa Rica	1996	The government has privatised its responsibilities for FMP, silviculture, monitoring and the administration of subsidy schemes to forestry professionals, or 'regents'. The regents are paid by the forest owners. The government is considering a proposal to contract out the supervision of the regents to a certification body
	Russia	Proposed	World Bank (WB) proposal that the 13 state enterprises responsible for inventories and FMP around the country are privatised.
	Bolivia	1996	Professionals are hired by private operators to undertake FMP, auditing, and are responsible for monitoring implementation
Private Associations	Ghana	>10 yrs	Technical advice, marketing and exporting services and lobbying the government.
	RSA	>10 yrs	Policy advice/lobbying, training, research, marketing, fire prevention
	China	1980s	Training, fire prevention, resource monitoring and exporting advice (at the regional level)
	India		State-level associations, e.g. Maharashtra's Agro Forestry Federation of tree farmers
	Indonesia	>10 yrs	Exporting, marketing, research, extension and training, and recreation

	Costa Rica	>10 yrs	Exporting, marketing and research
	Honduras	>10 yrs	Exporting and marketing advice, lobbying services, technical advice and training
	Poland	early 90s	Policy advice/lobbying, research, marketing
	Russia	early 90s	Marketing, exporting advice
	Slovenia	early 90s	Co-operatives provide marketing advice and some silviculture and harvesting support
	Latvia	early 90s	Marketing and exporting advice, training and technical assistance with FMP
	Canada	>10 yrs	Policy advice/lobbying, marketing and exporting advice, research, training
	Mexico	<10 yrs	Research, fire protection, export and marketing advice
	USA	>10 yrs	Policy advice/lobbying, research, training, technical advice on SFM, monitoring, export and marketing advice
	PNG	> 10 yrs	Policy advice/lobbying; marketing and export advice
	Bolivia	>10 yrs	Policy advice/lobbying, marketing, exporting, forest management
	Brazil	>10 yrs	Marketing and exporting advice, training and research
	Chile	>10 yrs	Export and trade advice
	Finland	>10 yrs	Research
	UK	>10 yrs	Policy advice/lobbying; marketing and export advice, training and research
Quasi-public	Malaysia	1992	Malaysian Timber Council provides market and export advice and promotes products from Peninsular Malaysia; financed by an endowment fund originally provided by the federal government from export tax revenue
	Costa Rica	> 10 yrs	CODEFORSA and the Costa Rican Chamber of Forestry are both heavily supported by the government. The first helps to manage forests in the Central Huetar Region and the second undertakes market research and training
	Slovenia	on-going	Chamber of Agriculture and Forestry being established by the government, but represent private owners in policy making and encourage associations to develop
	Finland	>10 yrs	Forest Management Associations organised by the government and funded by owners through mandatory charges; provide extension services such as technical help with forest management, marketing advice

Chart 2.2 Mechanisms for increasing PSP in national/regional-level forest management



2.4 Company-community partnerships

In section 2.2.1, mention was made of government measures to return rights to land-owning communities in Ghana, RSA, China, India, Mexico and PNG. In addition to increasing community involvement in selecting logging operators, some governments are promoting company-community partnerships as a way of spreading the benefits from forest utilisation. Even where governments have not taken the initiative, there are examples of companies drawing up agreements with local landholders to supply forest products.

Land-owning groups in PNG have a history of joint ventures with logging companies, while in RSA companies have been establishing outgrower schemes with local populations since the early 1980s. Outgrower schemes have also started to be promoted in Ghana. In China, the government has not only introduced the possibility of joint ventures between local companies and co-operative groups, but has also encouraged partnerships with foreign companies.

Data on company-community partnerships for individual countries is not always available. Table 2.6 below lists the countries for which examples of company-community partnerships were found. The types of partnership arrangements that have been identified fall into four categories:

- outgrower schemes,
- joint ventures,
- community enterprises, and
- other types of contracts

Outgrower schemes occur where companies contract communities or individual landowners within their concessions or in nearby areas to plant

trees and to supply a given amount of timber to the company for an agreed price. The details of outgrower schemes and the balance of rights and duties vary. In some instances, the company is not obliged to purchase the landowners' timber, but has the first right to do so. In others the landowners can choose to sell to a third party, if the company does not match the market price. Box 2.6 details an example of one of the first outgrower schemes employed by Sappi in RSA.

Box 2.6 Sappi and outgrower schemes

Sappi is an international pulp and paper company and the second largest private forest owner in RSA. It manages 260,000 hectares of plantations in RSA, equivalent to 18 per cent of the nation's timberland, and an additional 40,000 hectares in Swaziland. Sappi was the first company in RSA to experiment with partnership arrangements with local communities as a way of increasing its access to forest resources.

Project Grow

Its original scheme, 'Project Grow', was initiated in Kwazulu-Natal in 1982 and has since been managed by the Lima Development Foundation, an NGO with a track record in community development. Under this scheme, local communities sign a contract with Sappi which entitles them to free expertise, training and seedlings, advanced payment for work, and a guaranteed market for their trees at current market prices. When the trees are finally ready, Sappi pays the participants the value of the produce, deducted by any advance payments.

This scheme has worked well, despite farmers not owning the land they plant on. In general, individuals are granted rights to community-owned land for plots averaging less than one hectare per family. To date 6,800 hectares have been planted by 7,600 farmers, generating R2.4 million (US$545,000) per year. Participants earn about US$205 per hectare per year, which compares favourably with the alternatives such as ranching or sugar production.

MAP

Sappi introduced a second outgrower scheme in 1990 for title deed holders called the 'Management Associated Programme' (MAP). MAP offers free seedlings and technical advice, a loan of up to R1,200 (US$275) per hectare at the prime bank interest rate, and a guaranteed market price for timber. To date 28,000 hectares have been planted and it is expected to grow to 36,000 hectares. Average income is US$115 per hectare per year. The grower must follow the harvesting practices prescribed by Sappi and cannot sell the timber grown to anyone else.

Joint ventures are partnership arrangements. In general the company and community participants share equity and split the profits in proportion to their respective shares. Communities in joint ventures may be involved in the operations' management.

Other arrangements between companies and communities vary between simple contracts where communities are paid to protect trees in lands already allocated to the company, to arrangements whereby companies deliver contributions to local development (e.g. schools and health care) in return for community co-operation. Informal agreements vary considerably and no attempt has been made to cover all existing cases in Table 2.6.

Although not strictly community-company partnerships, examples of communities which form enterprises are also included in Table 2.6 since, in many cases, the company becomes a separate entity with its own interests that may diverge from the communities they represent. This has been true of Canada's Tl'azt'enne Nation, where internal tensions have recently surfaced in the face of tight markets and the Asian crisis. Tensions between Land-owner Companies and land-owning communities in PNG have led the government to propose a new, more representative, 'incorporated land group' to ensure accountability.

Table 2.6 Company-community partnerships over the last ten years

Countries	Details and coverage
Outgrower schemes	
Ghana	The Swiss Lumber Company contracts farmers to plant trees in their degraded land in return for an initial lump-sum payment, an annual land rent and a share of the harvest income
RSA	Sappi Co.'s 'Project Grow' covers 6,800 ha and 7,600 growers. The scheme offers communities free training and seedlings and advance payments for timber. Sappi guarantees its purchase when the trees are ready and pays market rates.
India	Companies contract up to several thousand farmers to produce timber. This has become the dominant form of arrangement for private production since the late 80s when private industrial use of state forests was banned
Joint ventures	
RSA	North East Cape Forests Joint Venture where the community has an equity share of 20% and receives 20% of the profit in instalments; also Sappi's proposed joint venture to afforest part of the Magwa Tea Estate
China	Several joint ventures have been agreed between local co-operatives/village groups and foreign companies as well as between local processors and village groups. Mediated by local government
Indonesia	Share transfer schemes have been developed where concessionaires hand over a proportion of their share to local co-operatives. In 1993, 17 companies were preparing such transfers
Canada	Several across the country between Aboriginal groups and forestry companies. A survey in 1994 found 14 joint ventures in British Colombia and one in 1997 found 4 in the Prairie Provinces and 2 in Quebec. The arrangements involve shared decision-making and returns and are normally supported by supplementary agreements relating to conservation of NTFPs
Mexico	One joint venture arising from constitutional changes in 1992 between Union of Ejidos 'Herenegildo Galeana' (UEHG) and Boise Cascade, a US company. This was subsequently abandoned
PNG	The majority of industrial logging is undertaken by private logging companies which form alliances with landowner groups, often represented through landowner companies. The private investor generally provides the capital and landowners benefit from a share of the profits or up-front contributions to local development
Chile	Since 1993 increased partnerships between companies and small landowners for afforestation

Ireland	Coillte, the state enterprise, runs a Forest Partnership Scheme; surrounding landholders supply land which Coillte plants; afforestation grants from the government, plus the revenue are split between the company and land-owners; to date there are 216 such schemes over 4,481 hectares
Community enterprises	
Honduras	Community groups form co-operatives to manage forest areas in state forests since 1974. Co-operatives must be registered with the government
Canada	Community enterprises established, e.g. the First Nation's Tl'azt'enne established two companies to manage Timber Farm Licenses and a sawmill by 1992
USA	Menominee Community Forest in Wisconsin is a community enterprise established in 1890 and profitable
Other	
Ghana	Between Ghana Primewoods Products Ltd, Dolhoff Larsen and Horneman of Denmark and members of the Gwira Banso community within their 16,000 ha concession. Landowners are given free seedlings, training and support in developing NTFPs
Indonesia	Village development schemes where concessionaires help local villagers develop sedentary agriculture. In 1993, there were 466 villages involved in these schemes
Canada	1. Some companies have formed 'third party agreements' or contractual agreements with communities relating to harvesting, silviculture, trucking, etc. Often supplemented by MOUs relating to training, research, employment, etc. 2. 'tenant-farming' being developed under the Lower St. Lawrence Model Forest in Quebec where farmers are given plots in company land to grow timber; company has first rights of purchase at market prices and farmers pay stumpage fees which go to fund a collective pension scheme, infrastructure and government taxes; 26 farms have been established, averaging 1,800 hectares each
Brazil	Farm forestry schemes are increasingly popular with processors who are required to form agreements with landowners to ensure SFM in areas supplying their timber; these generally involve partnership arrangements where the processors helps with material inputs and purchases the output, while the farmer provides the land and labour

Market-based instruments

There have been recent attempts in many countries to alter the market signals facing the private sector, in such a way as to make SFM more profitable and thus more attractive than unsustainable practices. This includes:

- efforts to reform forest revenue systems,
- the introduction of explicit financial incentives,
- changes in the conditions attached to forest concessions,
- trade liberalisation,
- promotion of markets for non-timber forest benefits,
- forest certification, and
- payments for forest conservation.

3.1 Forest revenue systems

3.1.1 Forest revenue systems and SFM

Forest revenue systems are a key tool of forest sector policy. They tend to be focused on timber products. They include a wide range of levies, from area fees and stumpage fees to sales, income and export taxes, and are imposed on private firms and individuals. In general, the levies are collected by the government from private users in state and community forests[15].

Most forest revenue systems aim to raise income for the public purse. They also provide economic signals to private producers and land owners, by influencing the prices at which resources are made accessible. Historically, governments have often maintained low charges to support the development of the forest products industry. In some cases, differential charges have been used to encourage processing, or to promote or protect particular tree species.

[15] Private forest land owners also employ a kind of 'revenue system' when they sell logging, hunting or other use rights to third parties. Given the relative importance of public land in the forest sector in many developing countries, however, attention has focused on official revenue systems.

Covering the costs of forest management

More recently, forest authorities have turned their attention to modifying revenue systems in various ways. One approach is to link charges to the costs of forest maintenance borne by the forest authority. The idea here is to ensure that forest users pay the full costs of forest management — for which they have often been exempt. As part of these reforms, in many countries revenue from charges is now channelled directly to forest authorities. Not only does this improve the linkage between revenue and spending on forest management, but it also helps to ensure that charges and costs keep step over time.

Linking revenue systems to stumpage value

Another common modification of revenue systems is to link charges more closely to timber stumpage value. This is the value placed on the trees before they are cut down. Unlike reforms to link charges to forest management costs, this measure aims to capture the inherent value of the resource for the resource owner—in the case of state forests, the government. Some argue further that, by linking charges to resource values, the revenue system will act as an incentive for SFM.

Whether stumpage value-based revenue systems encourage sustainable resource utilisation in practice depends on many factors, including the types of charges levied and the capacity of the forestry administration to implement the system. Box 3.1 reviews the main arguments concerning the links between stumpage value based revenue systems and SFM.

Box 3.1 Revenue systems, stumpage values and SFM: a brief review

A large literature discusses forest revenue systems and their relation to forest management. A key focus of this literature is the potential of charges based on stumpage value to encourage more sustainable forest management. Detailed discussions can be found in Grut et al (1991), Gray (1983), Hyde et al (1991), Paris and Ruzicka (1991) and Repetto et al (1988).

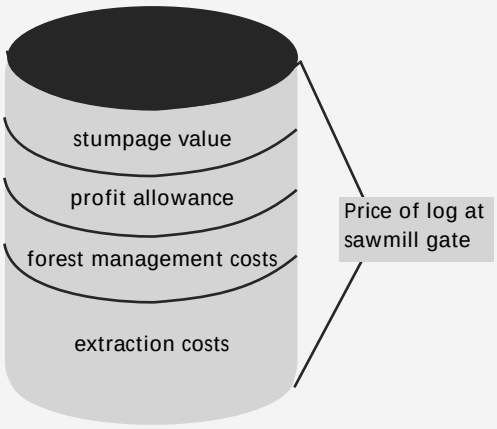
What is stumpage value and why it is important

In section 3.1.1, stumpage value was defined as the market value of standing timber in the forest. As state-owned forests are not normally sold outright, the stumpage value must be imputed from the market price of logs. While a detailed methodology for calculating stumpage value may be found in Gray (1983), the procedure is briefly summarised as follows: first the volume of commercially valuable timber in a given area is assessed, based on a pre-felling inventory. This volume is multiplied by the market price of logs, adjusting for size and species composition. From this amount the estimated costs of extraction are deducted, including a profit margin for the most efficient harvester. Where the logger undertakes forest management, these costs should also be deducted. The residual value after these deductions represents the maximum amount that an efficient harvester should be willing to pay for the standing timber. The decomposition of stumpage value is represented pictorially below.

Most governments attach levies such as royalties and area fees to contracts awarded for

access to timber resources on public lands. As noted in section 3.1.1, these levies have historically been set well below stumpage value, for various reasons including a desire to encourage forest sector development. Many argue that charging less than the full stumpage value encourages overuse of forest resources, and discourages investment. In particular, critics argue that selling timber on public lands at less than stumpage value will:

Pictorial representation of stumpage value



- depress market prices of timber and subvert their role as a signal of resource scarcity, thereby reducing incentives to use timber efficiently and invest in forest management;
- exacerbate existing market imperfections which fail to account for the environmental benefits provided by standing forests and thus lead to excessive logging; and
- reduce government income which could be used to support forest management activities or other public investment.

These arguments have led to widespread calls for governments to modify revenue systems so as to achieve full stumpage value recovery.

As with many issues, not all economists agree with this line of thought. Some observers argue that increasing the level of stumpage value recovery may have little or no impact on forest management, or even perverse effects [Paris & Ruzicka (1991) and Hyde et al (1991)]. While the debate about whether and how to capture the full stumpage value of public timber resources is ongoing, it is clear that the incentive effects of stumpage value capture depend largely on how the revenue is collected.

Difficulties with implementing stumpage value-based charges

Even if we accept that full stumpage value recovery is desirable, achieving it may not be straightforward. The main challenges facing policy makers are how to calculate the stumpage value, how to design a revenue system that captures stumpage value without introducing perverse incentives, and whether the forestry administration has the capacity to implement the new system.

Measuring stumpage value

As illustrated by the pictorial representation above, stumpage value is derived from timber product prices. However, in a world where log prices vary between regions, species and timber quality, and production costs vary with distance to market, local site conditions and forest management requirements, calculating stumpage value can be difficult. Moreover, accurate calculation of stumpage value requires that the costs of production are estimated for the most efficient producer. Finally, stumpage value estimates depend on information provided by the private sector, which may be reluctant to divulge its real costs.

One way of circumventing the difficulty of calculating stumpage value is by introducing a market for standing trees and allowing the value to be determined by the forces of supply and demand. This may be done by introducing competitive auctions, where interested parties are required to bid for the right to harvest standing timber. Auctions, however, face their own challenges and are generally thought to be effective only if there is a sufficient number of bidders to prevent collusion and if bidders have enough information about the resource to make realistic bids.

Designing a stumpage value-based system

Even where stumpage value can be calculated with a high degree of accuracy, it is not straight-forward to design a revenue system that ensures full recovery without creating perverse incentives that detract from SFM, or conflict with other forest regulations. In particular, charges based on standing volume, volume extracted, area or profit can have different impacts on forest utilisation.

For example, whereas a charge levied per unit volume or per tree extracted would encourage the maximum utilisation of each tree harvested, a charge per unit area will encourage the maximum utilisation of each hectare of forest. The former may lead harvesters to extract only the most valuable species, known as 'high-grading', while the latter may undermine other forestry regulations, such as minimum size class restrictions.

Forestry administration capacity

Ultimately the success of any revenue system will depend on government's ability to enforce it. In resource-poor countries, forest authorities may simply not have the capacity to implement more sophisticated measures.

This point is highlighted by Hyde et al (1991) who argue that a critical disadvantage of a stumpage value-based revenue system is its unintended impacts on incentives for illegal logging. By raising charges, loggers have a greater incentive to evade government officials, and government monitoring costs will therefore rise. As a result, revenues may not rise with increased charges, or may even decline, while higher charges can actually undermine SFM if more producers are tempted to cheat the system.

Experience with different charging systems

Despite the complexities of implementing a stumpage value-based revenue system outlined in Box 3.1, the principle of raising charges as a means of influencing forest use has maintained its appeal amongst policy-makers. Three measures to raise stumpage value capture, used by the governments studied in this report, are:

- linking charges to the consumer price index (CPI) or to border prices (normally Free On Board (FOB) prices);
- introducing graduated charges; and
- introducing auctions to determine charges.

Table 3.1 shows several countries where one or more of these three measures to raise stumpage value capture have been adopted or are under consideration.

Table 3.1 Measures to raise stumpage value capture

Countries	Date reform	Comments
Auctions		
Cameroon	1996	Determines area tax
Ghana	planned	For new TUCs
RSA	proposed	For new leases
China	1980s	For leases in wastelands
Indonesia	planned	
Malaysia		State premiums may be determined competitively
Honduras	1995	Auctions for rights to standing timber
Latvia	1994	Determines stumpage charges
Russia	1993/7	Auctions to determine lease fees experimented with by regions since 1993, 1997 Forest Code indicates auctions are to become the norm
Slovenia	planned for 2013	For new concessions
Canada	>10 yrs	Varies by province; normally determines charges for volume-based rights
USA	>10 yrs	Auction for harvesting rights (see Box 3.2)
Bolivia	planned for 1998	Annual area fees determined by auction; minimum: US$1/ha for timber and $0.30/ha for NTFPs
Graduated charges		
Cameroon	1995	Export surtax on logs increases for more valuable species
Ghana	proposed	Graduated stumpage charge
PNG	1990	Export tax
Brazil	1992	Minas Gerais state's forestry tax is higher for native forests
Malaysia	1990 (federal)	Federal export taxes and some state export taxes, royalties and premiums
Charges linked to CPI/FOB		
Cameroon	1997	Replaced an administratively set 'base price' with one linked to FOB prices. Used to determine stumpage and export charges
Ghana	>10 yrs	Royalty and export tax are linked to FOB prices
Costa Rica	1996	Timber tax equal to 3 % CIF prices
PNG	1990	Export taxes based on FOB prices
Brazil	1992	Minas Gerais state's forestry tax is linked to CPI
Indonesia	1998	Royalties (resource rent tax) and export tax linked to FOB prices.

Linking charges to prices

Charges based on FOB or local prices focus on the timber value once extracted. They assume that the stumpage value is a fixed proportion of the final market price. Where production costs differ between forest stands, this assumption will not hold and timber extracted from areas of difficult terrain will be overcharged, compared with timber from more accessible areas.

Nevertheless, the charges go some way towards improving stumpage value capture and may help reduce over- extraction. Moreover, by linking the charges to current prices, they will not suffer from reductions in their real value due to inflation or exchange rate depreciation.

Graduated charges

Graduated charges are also based on timber prices, but are designed to take a larger share of the timber sales price for more valuable species. The principle behind the charging system is that stumpage value increases more quickly than prices, and charges aimed at capturing stumpage value need to take a greater proportion of higher-value species than lower-value species. The assumption that stumpage value increases faster than prices is itself based on the idea that the costs of extraction are essentially the same for all species and, as prices rise, the stumpage value (calculated as a residual of prices minus costs) rises more quickly. If, for example, extraction costs come to about $50 per cubic metre for all species in a tree stand and if the market prices of two different species are $100 and $150, then their respective stumpage values are $50 and $100. The rise in stumpage value is 100 per cent compared to a rise in price of only 50 per cent.

Auctions

A third measure aimed at capturing forest stumpage value involves the introduction of timber auctions. By allowing producers to express their willingness to pay for timber rights, government hands the job of calculating stumpage value to producers, who have better access to information on timber values and production costs. Although this approach is theoretically preferable to the first two, as it attempts to ensure full stumpage value recovery, it faces important challenges. Producers do not always have more information than the government and, when there are insufficient bidders, auctions are vulnerable to collusion and price manipulation. In addition, the government does not entirely escape its obligation to collect information on stumpage value, as it must set a floor price which covers its own costs. Box 3.2 illustrates the process of calculating floor prices undertaken in the USA.

Box 3.2 Auctions in the USA—setting the floor price

In the USA, timber rights are awarded to private loggers in federal land through competitive auctions. Timber sales contracts set out the volumes to be sold and how trees are to be extracted. Based on these details, the Federal Forest Service sets a minimum price for sales based largely on a stumpage value appraisal or, more recently, a 'transactions experience' approach. The former calculates the value of the standing tree as a residual when the price of timber sold on the market is adjusted for the costs of getting it to market. The transactions experience approach draws on a database of past timber sales to calculate a reasonable expected price. Using regression analysis, the database is analysed to derive relationships between particular characteristics of past timber sales (e.g. species and

site characteristics) and the prices achieved. These relationships are then used to predict a price for the current sale.

One advantage of the transaction experience approach is that it avoids the problems associated with collecting detailed information on logging costs, and predicting technological change and cost changes necessary for the stumpage value approach. For it to work, however, the forest authority requires data on past competitive sales. Where past sales were characterised by uncompetitive behaviour, the transaction experience approach is not applied. Whichever technique is used, revenue from timber sales is expected to cover the costs of producing timber and administering the auctions. If not, forests are considered to be more valuable if left standing.

Incorporating social and environmental impacts

It should be stressed that while the minimum price calculated through the stumpage value or transaction experience approach indicates a 'fair' value for standing timber, this price may not be the final minimum established for a timber sale by the Forest Service. The agency is mandated to consider social and environmental impacts in its decision-making. As long as the total benefits are considered to exceed the costs, timber may be sold below the 'fair' value described above, even if this is less than the costs of growing and administering forests.

A commonly cited reason for making below-cost sales is that of attracting investment to depressed rural areas. In such instances, the social benefits arising from increased employment and income are thought to outweigh any losses to the public purse. Similarly, where the investor undertakes road building, the government may reduce the timber sales price to reflect this additional expenditure. Roads are considered to have significant external benefits for all forest users and, it is argued, should be funded by the government. Such below-cost sales effectively subsidise the timber industry and have drawn considerable criticism from conservation groups.

3.1.2 Earmarking forest revenues[16]

Forest revenue systems are increasingly being reformed to link charges to governments' forest management costs. In countries where there is no clear linkage between charges and forestry expenditure, forest authorities have fewer incentives to maximise revenue collection and increase efficiency.

User fees and service charges

The most direct linkage is provided by user fees or service charges, where the forest authority collects money to cover the costs of providing specific services to the private sector. In many countries, only token fees are collected, which bear no relation to the costs of provision. Thus they fail to act as an incentive for either the service provider or the recipient. Countries in which cost-recovery has been adopted to pay for particular forest services include Honduras, Latvia, Bolivia, Finland and Ghana.

[16]Reforms to the allocation of forestry revenue are closely intertwined with forest authority reform,

Establishing a forestry fund

Another cost-recovery mechanism is to establish a fund which is financed by revenue from forest charges, and which is dedicated to forest management and development. In a few cases, governments devolve responsibility for forestry to a financially autonomous body with revenue raising powers[17].

Examples include Slovenia, where a 10 per cent sales tax on timber finances the subsidy programme supporting forest management, Brazil and Indonesia, where national reforestation taxes are allocated to special reforestation funds, Malaysia and India, where a Forest Development tax is levied to raise funds for forest rehabilitation and development, Honduras, where 25 per cent of revenue from stumpage sales goes into a 'Fund for Reinvestment in Forests', and China, where local authorities collect forestry charges to finance Reforestation Funds.

Recently, the Camerounian government has set up a Forest Fund to be financed from a share of stumpage charges. Proposals to introduce a National Reforestation Fund are currently under consideration in Ghana. In Russia, although no special fund has been established, district forest authorities keep part of the income from lease fees, which they use to finance their forest management and supervisory duties.

Such ear-marking of revenue does not always work in practice. In Brazil, for instance, the forest authority has been accused of diverting money from the reforestation fund to finance its recurrent expenditure. Similarly, in Indonesia, the government of former President Suharto is accused of using the Reforestation Fund to finance the development of the state aircraft production facility.

Revenue sharing with land-owning communities

In countries where community forests are important, there has been a trend to channel all or a portion of the revenue collected by governments from forest users to landowners, as part of broader reforms to increase community involvement in forest management. This is the case in PNG, where recent reforms to the revenue system have prioritised landowners' interests. Since 1996, local communities receive 95 per cent of royalty revenue and the government collects a Project Development Levy fixed at K13 (approximately US$3.40) per cubic metre.

In Ghana, the government is constitutionally required to return a share of timber royalties to landowners. In RSA, various mechanisms for channelling funds to communities are under consideration as part of proposals for the introduction of leases in the former Homelands.

[17] See section 4 for examples of forest authority corporatisation and privatisation.

In Mexico, *ejido* and indigenous community landowners were awarded the right to lease and sell rights to their forests in 1992, which meant that they—and not the government—currently receive all the revenue from third party use.

3.2 Financial and material incentives

3.2.1 Penalties and performance bonds

Incentives to encourage SFM vary tremendously between countries (see Bass and Hearne, 1997; and Merlo and Paveri, 1997). Most countries operate a system of negative incentives, or disincentives, for breaking the law. Penalties including the confiscation of timber, repeal of harvesting rights, and even jail sentences are imposed by governments. An innovative approach to penalising those who violate forest laws involves the use of performance bonds. These are arrangements whereby the forest operator is required to deposit a fixed amount of money with the government prior to harvesting. The bond is returned upon completion of the contract as long as all conditions have been adhered to. If contract conditions are not satisfied, part or all of the bond may be forfeit.

The effectiveness of disincentives depends on the risk of being caught and punished. In countries where forest authorities are under-resourced, supervision of forestry operators is difficult. Moreover, once caught, the authority must have the power to force the guilty party to pay a fine or ensure imprisonment. Where forest officers are under-paid, they are vulnerable to bribery and have little incentive to risk a confrontation. Even where fines are collected, they are often trivial and are not a deterrent; they may be considered arbitrary, and treated simply as part of production costs.

The problem of ensuring payment is avoided in the case of performance bonds, and this is an important advantage of this instrument. Performance bonds have become increasingly popular and have been introduced in Malaysia, Honduras, PNG, Chile and Finland and are being considered in Indonesia. Some Indian states apply performance bonds in the case of NTFP leases, such as for bamboo. Ghana is expected to include performance bonds as part of its new Timber Utilisation Contracts awaiting Parliamentary approval, and the World Bank has proposed their introduction in Cameroon. Of course, passing performance bonds into law does not mean they are implemented. In Indonesia, for instance, the bonds are rarely returned and are treated merely as a forest tax.

3.2.2 Positive incentives

Positive incentives for SFM have expanded in parallel with increased PSP. As governments hand more responsibility for forest utilisation and management to private entities, they need new instruments to ensure that private operators

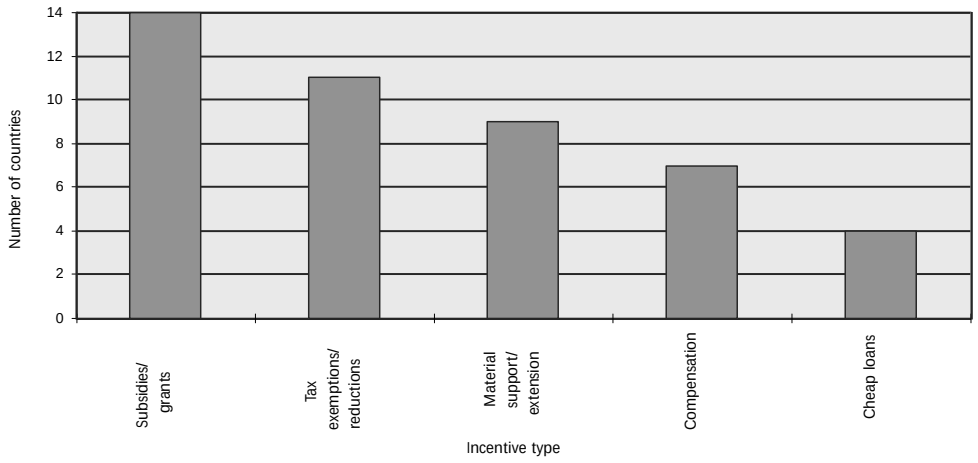
abide by the law. Although penalties offer a deterrent to bad practice, their effectiveness depends on costly field supervision. In the face of declining budgets, the power of financial signals to guide private actions is increasingly appreciated[18]. Moreover, as governments are updating their legislation to introduce new requirements for ensuring social and environmental benefits, private operators are demanding support from the government to cover the costs of the new requirements, which they argue provide public benefits.

Positive incentives provided by governments may be grouped into two general categories:

- financial incentives—which include subsidies (often for afforestation or regeneration), compensation payments (often for revenue foregone through forest protection), cheap loans (afforestation) and tax exemptions or reductions[19]
- material incentives—which include extension services such as training, free inputs and technical advice.

Table 3.2 lists some countries which have implemented these instruments. This table is not comprehensive, but aims to indicate the relative importance of different measures in different countries, and changes under way. Costa Rica's sophisticated system of incentives, and Brazil's novel use of its state taxation system to encourage SFM, deserve special mention and are dealt with separately in Boxes 3.3 and 3.4. Chart 3.1 illustrates the relative popularity of different positive incentives according to the number of countries that employ them.

Chart 3.1 Relative frequency of alternative positive incentives for forestry



[18]Financial incentives are not always the cheapest option and need to be well designed to have the maximum impact at the lowest cost.

[19]While subsidies are grants to forest owners, normally to support the producer in the short term, compensation is a payment for an environmental service provided by a land-owner's forest and is often justified in the long term.

Table 3.2 Positive incentives to encourage forestry

Countries	Date reform	Comments
Subsidies/grants		
India	1970s	Subsidies to small farmers to plant trees
Indonesia	1989	HTI Scheme: land grants and subsidies for afforestation in state land
Costa Rica		See Box 3.3
Honduras	proposal	Grants for SFM in private and state forests
Latvia	1992	Subsidies for afforestation in abandoned lands; proposal for extension for forest renewal and road construction
Poland	1991	Subsidies for forest renewal, protection, afforestation, FMP, inventories of plots up to 10 ha
Slovenia	1993	Subsidies for plots <100 ha for forest protection, regeneration, tending pole stands, maintenance of wildlife habitats, road construction, etc. Equal to 20-100% costs
Canada	>10 yrs	Varies by province; in Crown and private forests: reimbursement of costs of forest development, silviculture, etc.
Mexico	1997	PRODEPLAN fund promotes private investment in plantations; PRODEFOR supports community forest development; and PRONARE supports reforestation and promotes income generation through community plantation management
USA	>10 yrs	In private forests: cost-sharing for forest management, afforestation and conservation; in National Forests, subsidies for road construction through sales credits.
Brazil	1975	REREMIR, a reforestation programme to assist landowners with between 20 and 300 hectares, offered grants of up to 20% costs
Chile	1998	Subsidies 75-90% costs afforestation (1974-1998). 1998 redirect subsidies to small landowners and native SFM
Finland	1997	Subsidies extended to forest regeneration, conservation and landscape management
Ireland	1989	Grant scheme for afforestation, restocking and road construction and maintenance; normally comes to 70-85% costs; 1990 and 1992 reforms: grants for recreational forests
UK	1988	In private lands: several grant schemes for afforestation, FMP and forest management; overlap with compensation
Compensation		
RSA	1998	The new Forest Act includes provisions for payments to private forest owners to compensate them for the costs of forest protection or where they agree to increase access to their forests to the public for recreation
Costa Rica		See Box 3.3
Latvia	1992	Reductions in property tax act as compensation when forests are designated as protected and utilisation restricted

Countries	Date reform	Comments
Slovenia	1993	When private forests designated as special purpose or protected forests and use restricted
Brazil		See Box 3.4
Finland	1997	When private forests designated as protected forests and use restricted, or for owners who voluntarily limit felling
UK	90s	Many grants aimed at compensating owners for forest protection for recreational and biodiversity values
Cheap loans		
China	1990s	As part of large government afforestation projects, e.g. Three-Norths Shelterbelt Development Project
Indonesia	1989	Interest free loans equal to 32.5% of an afforestation project under the HTI scheme
Costa Rica		See Box 3.3
Finland	1967	Low interest loans
Tax Exemptions/Reductions		
Malaysia		100% income tax exemption for investments in plantations for 10 years
Costa Rica		See Box 3.3
Slovenia	proposal	Reduction in property tax
Poland	1991	Property tax exemption is offered in forests < 40 years old
Canada	1990s	Ontario, Quebec, Alberta: in Crown forests reductions or exemption from stumpage charges linked to increased growth rates; Ontario: in private forests reductions in land tax
USA	>10 yrs	Land and inheritance tax reductions
Bolivia	1990s	Exempt from land conversion tax if maintain forests in private and community lands
Brazil	1989	Land tax reduced to the same level as charged in agricultural land
Chile	1974, 1998	Tax exemptions (inheritance, property, capital gains); reduction in profit tax. Reform in 1998: abolished reduction in profit tax
Finland	1967	Exempt from income tax on revenue from NTFP use
Ireland	1990s	Corporation and income tax exemptions, reductions in inheritance tax
UK	>10 yrs	Income and capital gains tax exemption; option to defer inheritance tax (reformed in 1988)
Material Support/extension		
RSA	proposals	Free training and other inputs in degraded community forests
Latvia	1992	In private forests: free FMP services in the first 3 years of operation; proposal for extension of material support, e.g. training

Countries	Date reform	Comments
Poland	1991	In private forests: provision of FMP, free seedlings, pest control and marketing advice
Slovenia	1993	In private forests: free management and marketing advice, research and free seedlings. Equivalent to US$14.3 per ha in 1996
Canada	>10 yrs	Varies by province; in Crown and private forests: free seedlings, technical advice, training, etc.
Mexico	1997	Training in marketing and forest management
USA	>10 yrs	State authorities in private forests: training, advice, etc.
Finland	1967	Free training, education, FMP, etc.
Ireland	1990s	In private forests: free technical advice
UK	>10 yrs	In private forests: free advice, training, research

Box 3.3 Costa Rica's redeemable grants and compensation payments

Fiscal and financial incentives have been a part of the Costa Rican forestry agenda since 1979. Initially, reforestation was stimulated through tax deductions, soft credit, redeemable bonds, municipal forest funds, and a forest development fund. In 1990 the incentive structure was changed to place greater emphasis on good forest management and the protection of forests for their environmental services.

Incentives for reforestation

For small and medium-scale producers, the most significant fiscal instruments have been the Pre-paid Forest Bond Certificate (CAFA) and the Forest Development Fund (FDF). The CAFA was introduced in 1987 as a redeemable bond worth US$520 per hectare for smallholders with plantations less than 25 hectares. The FDF was introduced in 1988 and promotes reforestation by community development organisations. Only projects of more than 100 hectares, and involving more than twenty farmers, are considered and the grant covers about 70 per cent of the cost of reforestation. Together, the CAFA and the FDF encouraged the reforestation of 45,000 hectares. Despite the apparent success, the schemes have been criticised for being economically inefficient. As much as 50 per cent of the area reforested did not achieve the growth rates, or density levels, required to be economically viable.

Large-scale producers have benefited from a different set of incentives These include an income tax deduction whereby large investors can deduct the cost of establishing and maintaining plantations (up to US$800 per hectare) from their income tax liability and two Bond Certificate schemes, the Forest Bond Certificate (CAF) and the Forest Management Bond Certificate (CAFMA).

The CAF, introduced in 1987, is a redeemable bond which can be used to pay any kind of tax, or sold for slightly less than its face value of approximately US$650 per hectare. Payment is made when the investor provides proof that the plantation has been established. The scheme encouraged over 600 businesses to reforest approximately 38,000 hectares by 1995.

The CAFMA, established in 1991, provided an early indication that the government's priority was shifting away from reforestation in favour of better forest management. CAFMA is a redeemable bond worth between US$460 and US$520 per hectare for land-

holders with between 30 and 300 hectares. Landowners are required to enter a contractual agreement with the government, whereby they agree to provide a FMP for approval.

Changing priorities: encouraging SFM

The incentive system was reformed under the 1996 Forest Law to encourage conservation and better forest management. The main reforestation incentives CAF, CAFA and the FDF are to be phased out by 2001, but CAFMA will continue. Additional support will be provided through the Forest Protection Certificate (CPB), the Forest Conservation Certificate (CCB), the Payment of Environmental Services mechanism (PSA), the National Forestry Finance Fund and the Foundation for the Conservation of the Central Volcanic Range (FUNDECOR).

Compensation for Conservation

Forest conservation is the primary aim of both the CPB and CCB. The CPB was introduced in 1995 to provide forest owners with compensation for forest protection. It is to be phased out to make way for the CCB. The CCB operates in much the same way as the CPB did, providing US$270 per hectare over five years, if the landowner maintains the forest for a total of twenty years.

Payment for Environment Services

In addition to general compensation for forest protection, landholders are eligible for payments for particular environmental services provided by their forests. Under the PSA scheme, landowners receive government protection from land invasion, an exemption from land tax as well as payments for their forests' services. The Tropical Science Centre has prepared estimates for the level of payments based on the carbon storage, erosion prevention and watershed protection services which the forest provides. The average payment is estimated at US$50 per hectare. Funds for this scheme are generated through a 15 per cent tax on fossil fuels.

Channelling Private Sector Payments

In some cases, the government does not pay for environmental services, but transfers money paid by foreign companies. This is true of private payments for watershed protection which are channelled through the government agency FUNDECOR, as discussed in Box 2.3.

While, currently, carbon sequestration (CTO) payments are made to the government and the government pays private landowners separately under the PSA scheme, it is possible that future funds may be directly transferred to private landowners. Payments by foreign entities for environmental services are not classified as government incentives, but are referred to as global incentives. These are discussed in section 3.7.

Box 3.4 Brazil – VAT ploughed into forest conservation

An innovative approach to encouraging local municipalities to manage protected areas is being undertaken by five states in Brazil: Paraná, Rio de Janeiro, São Paulo, Minas Gerais and Rondônia. Under current legislation, a value-added tax, the ICMS, is the main source of revenue for state governments. States are obliged to allocate 25 per cent to municipalities. Of this amount, 75 per cent has to be distributed according to the value added generated by each municipality, but the States have the power to allocate the remaining 25 per cent as they choose.

The states mentioned have introduced a system to distribute a share of this 25 per cent to municipalities that have designated conservation areas within their territory or meet environmental criteria such as protection of watersheds or provision of sanitiation and solid waste management. The aim is to compensate Municipalities for lost income resulting from land-use restrictions and to provide an incentive for extending the area designated as protected or in some cases for improving the management of existing protected areas. Allocation criteria for conservation areas vary between states.

In Rondônia the ICMS ecological index is calculated on the basis of the size of the protected areas regardless of their characteristics, whereas in Paraná the quality of management of such areas is taken into account. In Paraná the system has been functioning since 1992 and 5 per cent of ICMS revenue is allocated according to ecological criteria, equivalent to about US$50 million a year. Taking all the state schemes together, in 1992 a total of US$127 million was raised for compensation payments.

Despite the political challenges associated with re-allocating income and the difficulty of monitoring conservation, there is evidence that the scheme is causing municipal governments to invest more effort in ensuring protection of designated forests and in exploring options for non-destructive uses such as eco-tourism.

Although this scheme is not targeted directly at private landowners, private land if designated as a protected area under the RPPN system (*Reservas Particulares de Patrimônio Natural*) will normally be included in the calculation of the ICMS ecological index[20]. Municipalities keen to capture funds may themselves offer private individuals a share of the compensation payment to co-operate or provide other types of incentives to encourage them to designate part of their land as an RPPN.

Most incentives are aimed at private land owners rather than operators in state lands, although the latter also receive support in some countries. Compensation for land-use restrictions, reductions in income, or property tax, and extension services are almost exclusively targeted at private owners. While many positive incentives are not new, some countries, such as Costa Rica and Brazil, have experimented with innovative instruments. In all countries, however, the scale of support being offered to private forest operators and landowners has little precedent.

Notable omissions from Table 3.2 include Cameroon, Ghana and Russia, while others such as RSA, China, India and Brazil are only mentioned for one or two measures. Positive incentives are costly and governments may not be in a position to fund them. Moreover, such incentives risk becoming permanent rather than acting as a temporary measure to begin the transition to better practice. This is particularly true in the case of subsidies, which are highly visible and difficult to remove once introduced. Permanent support can be

[20]Minas Gerais, Paraná and Rondônia all include privately held protected areas in the list of categories that qualify for the ICMS ecological index calculation (Grieg-Gran (forthcoming)).

justified on theoretical grounds as long as important positive externalities exist which would be lost if the support were removed. Financial incentives may, however, be neither the cheapest nor the most effective policy instrument to promote SFM.

3.3 Conditions attached to timber extraction in public forests

The conditions attached to concessions and leases affect operators' willingness to invest in SFM on public land. Three factors in particular are thought to determine whether or not forest operators will 'mine' the resource, or invest for the long-term. These are: the method of timber rights allocation, the duration of those rights and options for renewability and transferability of rights.

The method of allocation

Timber rights may be allocated administratively, or through competitive mechanisms such as auctions. Where rights are allocated administratively this is often done behind closed doors and few of the criteria are made public. Lack of transparency raises the possibility of corruption, and a risk that rights will not be allocated to the most efficient or the most skilled operators.

Competitive bidding for timber rights has become increasingly popular—not only to raise rent capture, as discussed above, but also as a way to improve performance standards and reduce corruption. In general, competitive systems involve a three-stage process, starting with public advertisement of the sale. In the second stage candidates are vetted for their technical capability to comply with forest management standards and, in the third stage, they are asked to submit financial offers above a floor price.

In some systems, no financial offer is made but applicants are vetted according to pre-determined criteria such as technical capacity, financial resources, past experience and their planned operations. In this report, we refer to non-financial competitive systems as quasi-competitive. It is worth re-emphasising here that an auction's competitiveness depends on whether there are sufficient bidders to avoid collusion, and whether the government is committed to ensuring that the highest bidder wins.

The duration of rights

The duration of a timber right is a second factor determining individuals' willingness to invest in forest management. Where a concessionaire or lessor is allocated a right to an area, but for a period that is shorter than one forest rotation with no option of renewal, there is no incentive to invest in managing the forest for future yields. However, although long-term concessions can help to motivate more SFM, a longer period is by no means a sufficient condition.

For example, if the expected value of a future harvest is low or very remote due to, say, political uncertainty, land-owners as well as concession-holders may have little motivation to protect or manage the residual growing stock left after the first harvest.

Table 3.3 Timber rights and incentives for SFM

Countries	Date reform	Comments
Competitive Allocation		
Cameroon	1994	Replaced the administrative system with a competitive auction for concessions and *Ventes de Coupe*. Foreigners can bid if given ministerial approval
Ghana	planned	With the introduction of TUCs; candidates will be assessed in three stages and, in the final stage, the top five will submit bids in a sealed auction.
RSA	1999	Open tender of leases for industrial plantations currently held by Safcol and half of industrial plantations in former Homelands (332,000 hectares)
China	1980s	In wastelands, leases are allocated for afforestation through competitive auctions
Indonesia	planned	Competitive auction for concessions
Malaysia		Competitive system exists alongside an administrative system; varies by state and area; evaluation criteria include bids, experience, capability and track record.
Honduras	1995	Competitive auction of harvesting rights
Latvia	1994	Leases awarded through competitive auction
Russia	1993/7	Auctions for leases possible since 1993, but 1997 Code present government intention to make auctions mandatory.
Slovenia	planned for 2013	Expected when current concessions expire
Canada	>10 yrs	Varies by province; in general volume-based rights sold through sealed tenders
USA	>10 yrs	Auctions of harvesting rights
PNG	1992	Quasi-competitive system introduced for TPs; evaluation criteria, e.g. technical and financial capacity
Bolivia	planned for 1998	Competitive auctions expected.
Longer duration and renewability		
Cameroon	1994	Concessions lengthened to 15 years from 5 years and made renewable for another 20; proposals for 40 year duration rejected
Ghana	planned	TUC for 40 years
RSA	1999	35 year lease, renewable indefinitely
China	1980s	Varies, but leases of over 100 years are found
Indonesia	proposal	Lengthened from 20-35 years to 70 years
Malaysia	proposal	To lengthen concessions which are currently 30 years or less
Latvia	proposal	To lengthen leases from 10-20 years to 99 years

Russia	1993	Leases of up to 49 years, renewability unclear, except in the case of certain provinces
Canada	>10 yrs	Varies, but the long-term rights are normally renewable in perpetuity ('ever-green'), given compliance with laws
PNG	1992	TP: 35 years, one rotation; renewable
Bolivia	1996	Concession 40 years replaces 20 year contracts; renewable every 5 years in perpetuity
Transferrable		
Cameroon	1994	Concessions, with payment of transfer tax
Ghana	planned	With ministerial approval
RSA	1999	With ministerial approval
China	1980s	Leases can be inherited and in some cases sold
Indonesia	1998	With approval
Honduras	1995	With approval
Canada	>10 yrs	Long term area-based rights
USA	>10 yrs	With approval
PNG	1992	TPs
Bolivia	1996	With approval

Transferrability

Where rights are transferrable, even if their duration is short, the holder is more likely to invest in maintaining the forest's value. In most cases where transferrability is permitted, it depends upon the right-holder first getting government approval. Where governments introduce significant hurdles to trade in rights, the benefits of transferrability may be lost.

Table 3.3 highlights countries where these features have been adopted to promote SFM.

3.4 Trade liberalisation

Government intervention in timber markets has frequently been targeted at raising domestic timber processing levels, rather than promoting SFM. Log export bans, export quotas, export taxation and price controls are all used to protect and promote the domestic processing sector.

Log export controls work indirectly by discouraging log exports, depressing domestic log prices, and increasing the supply of logs to domestic processing facilities. Log price controls may be imposed on private producers or implemented through state-owned producers.

Export restriction may be supplemented by domestic controls on the timber market. For instance, where state entities have a dominant share of timber

Box 3.5 Export controls and forest management

There is a vast literature dealing with trade policy and its impacts on forestry. Important references include Barbier et al (1994), Grut et al (1991), Vincent and Binkley (1992), Bourke and Leitch (1998) and Repetto and Gillis (1988). The main arguments for and against export restrictions are presented below.

Disadvantages of export controls

Export controls such as taxes, quotas and bans have been introduced in many timber-producing nations to promote the growth of a local processing sector. Restrictions work by raising domestic supplies of timber (some wood which is no longer exported) and lowering domestic roundwood prices charged to processors. In economic terms, the export restrictions provide effective subsidies and protection to domestic roundwood users.

Several economists (including those referenced above) have shown that, while export restrictions may increase a nation's processing capacity, they also have serious negative consequences which outweigh the benefits. These include lost export revenue from roundwood, the over-expansion of local processing capacity, increased waste in processing and—in the medium to longer term—higher rates of timber extraction and, in some cases, deforestation.

A well-known study of Indonesia undertaken by Gillis (1988), illustrates the dangers of export restrictions. The introduction of a high export tax of 20 per cent on logs in 1978 and restrictions on log exports in 1980 led to an estimated effective rate of protection of 222 per cent for the plywood sector. As a result of the controls, Gillis estimated that the nation lost about US$136 million per annum in potential rents between 1979 and 1982. The protection awarded to the sector reduced incentives to raise efficiency and allowed increases in waste. Moreover, he estimated that forgone export earnings amounted to between US$725 to 850 million per year between 1981 and 1984 and, during that same period, US$239 million was lost annually due to selling the processed products below costs. These losses are likely to have risen with the imposition of a log export ban in 1985.

The inefficiencies caused by export restrictions in Indonesia are also thought to be partly responsible for raising deforestation rates. Low domestic log prices due to export restrictions reduce incentives to conserve raw materials. At the time of Gillis's study, Indonesia had the lowest conversion rate from logs into plywood of any Asian nation. It required 15 per cent more raw timber input for the same output as other countries. High levels of waste increase demand for wood for a given level of processed product output. Rising demand is compounded by the expansion in processing capacity encouraged by export restrictions.

In addition to these negative consequences of export restrictions, it should be noted that the restrictions also have serious implications for forest owners' and operators' incentives to invest in forest management or plantation establishment. Lower log prices, resulting from increased domestic supplies, directly reduce the potential revenues from log production. As a result, existing producers will be under pressure to cut costs and, thus, are likely to reduce their spending on Forest managent. Forest owners are also likely to reduce investment in current yields as well as to cut spending on future yields.

Advantages of export controls

While the disadvantages of export restrictions have gained considerable attention in recent years, the potential benefits should not be forgotten:

- Where controls are implemented temporarily, they may foster the emergence of an efficient processing sector. This argument is strengthened in cases where exporting countries are subject to import tariffs abroad, which make their products artificially uncompetitive. In this 'second best' situation, subsidies to local producers, direct or indirect in the form of export controls, may be justified.

- Where poor communities are dependent on fuelwood for domestic energy, there are social advantages of holding log prices down. In RSA, until recently, Safcol and the DWAF sold timber below costs, partly for social reasons.

- Export taxes are a valuable source of forest revenue. This is particularly true where forest authorities lack the staff to collect royalties in the field. Export taxes are often cheaper to administer than other charges, as the work is often concentrated at one or a few ports and, when set as a proportion of FOB value, they do not need to be regularly updated. Ease of administration is the main reason given by PNG for its continued reliance on export taxes.

- As a tool for the conservation of threatened species. This is the case in Brazil, where export quotas on mahogany and virola have been imposed to protect dwindling stocks.

Ultimately decisions on the introduction or removal of export controls will depend on the decision maker's objectives and the relative weight given to the various costs and benefits.

Table 3.4 Countries removing timber trade restrictions

Countries	Date reform	Comments
Export tax		
Cameroon	1994	To reduce the bias in favour of processed products.
	1997	Substantial reversal in 1997. Net impact unclear.
Indonesia	1998	Export taxes reduced from 200 % to 30 %; plan to lower taxes to 10 % by 2000
Malaysia	1998	Reduced export taxes
Honduras	1991	18% export tax abolished
Russia	1996	Abolished export taxes on timber products
Mexico	1986	With accession to GATT in 1986 and NAFTA in 1994 the
	1994	government has removed trade barriers
Export quota/ban		
China	1980s	Gradually reduced restrictions on export certificates
		Currently only control export of protected species
Indonesia	1991	Abolished log export ban; body controlling plywood
	1998	exports dismantled
Malaysia	1998	Abolished log export ban
Russia	1995	Abolished quotas and registration requirements
Bolivia	1996	Abolished log export ban

Domestic price/volume controls		
RSA	1990s	With approach of the sale of Safcol and DWAF's industrial plantations, the government has stopped selling logs at prices below costs
China	1978 1980s	Liberalised the central procurement system; by 1993 90% of production sold in free market
India	1980s 1990s	Liberalising price and transport controls between and within states
Indonesia	1990s	Inter-regional trade restrictions removed
Costa Rica	1980s	Initiatives to reduce market segmentation and promote increased log prices for producers by organising timber auctions and advance timber purchases
Honduras	1992	The state monopoly in forest extraction and exporting was abolished and state-owned forestry companies were either privatised or closed down
Latvia	early 1990s	Domestic markets liberalised as part of general reform
Poland	early 1990s	Domestic markets liberalised as part of general reform; prices increased on average by 20%
Russia	early 1990s	Domestic markets liberalised as part of general reform; roundwood prices increased over 10 fold by 1995
Slovenia	early 1990s	Domestic markets liberalised as part of general reform
Mexico	1992	Removal of domestic transport controls under new Forest Law
UK	proposal	State Forestry Enterprise (FE) accounts for 54% sales; considering abandonment of guaranteed sales which have often led to below cost sales

markets, they may exert downward pressure on log prices, in order to support log users such as processors. These controls have a similar effect as log export restrictions.

While these measures may succeed in fostering an increase in processing, there is a growing body of evidence that highlights significant negative impacts for forest management, investment in new stands and harvesting efficiency. The debate over trade restrictions and forest management is wide-ranging. Box 3.5 gives a brief overview of the debate relating to export restrictions. Table 3.4 lists those countries that have undertaken to remove export and domestic market controls.

Although many countries are liberalising timber trade, an equal number are maintaining or introducing new barriers. Cameroon's experience, outlined in Box 3.6, illustrates the strong political hurdles facing governments attempting to dismantle systems which protect processors. Ghana also maintains a log export ban introduced in 1979 and extended to all species in 1995, while Brazil bans exports of logs of diameters greater than 76 mm. Even in the USA, normally a supporter of free trade, the government is often accused of selling timber from National Forests below costs and it imposes a ban on log exports for timber from federal forests.

Box 3.6 Cameroon - reform or no reform?

Under pressure from its donors, the Cameroon government initiated a series of reforms to its forest revenue system in 1994. The old revenue system was criticised for, amongst other things, providing the processing sector with a high degree of protection by ensuring it had access to cheap log inputs. While processed timber products did not attract an export tax, log exports attracted two: one charged at a rate of 20 per cent of an administratively determined 'base price', and a second charged at 10 per cent on log exports above the 30 per cent volume limit placed on firms.

Removing the bias in favour of timber processing

Reforms aimed to reduce the bias in the tax regime. Not only was the 'base price' to be abandoned in favour of an FOB-based tax, but it was to be extended to processed products. Export taxes were to be retained as a tool for capturing forest stumpage value.

Reversing reforms

Before the reforms could be fully implemented, in September 1997, the government came to a separate agreement with the logging industry to halt and even reverse some of the measures. The move to abandon the base price in favour of an FOB-based tax was reversed and two new base prices were introduced, one for processed products and a higher one for logs. By making the base price higher for logs, the government re-introduced a bias in favour of processed products. In addition, rather than eliminating the additional export tax on logs, the government raised it from 10 per cent to 25 per cent in 1994. In 1995 the government converted it from a flat rate charge to a graduated charge, rising to 60 per cent of log export prices for the most valuable species. Although the rates were brought down in 1996, they remain higher than the original 10 per cent.

Although it will be some time before the impacts of these changes can be assessed, it is clear that the government has not removed the bias in the tax regime in favour of processed products and is likely to have increased it. This interpretation is consistent with the government's plans to introduce a log export ban for virtually all species in 1999. Cameroon provides a useful example of the importance of ensuring political support for reform, as well as clearly defining the objectives of reform prior to making any attempt to implement new measures.

3.5 Promotion of NTFPs and environmental services

NTFPs and environmental services have potentially powerful roles in providing forest users with incentives for multiple-use forestry and reducing the emphasis on timber extraction[21]. Whilst it is widely accepted that multiple-use forestry can do less environmental damage to forests than single-use forestry, the optimum mix of timber and NTFP extraction and conservation for environmental services is rarely known.

Economic theory tells us that the optimal combination of forest uses depends on their relative values and, when NTFPs and environmental services are of

[21] See also Merlo and Paveri (1997)

greater value than further timber production, forest owners would have an incentive to utilise these products. As highlighted in section 2.2.2, many NTFPs and most environmental services are difficult to value in practice. The first step in harnessing positive incentives for a more favourable mix of forest uses is the creation of markets for these goods and services.

Developing new markets

Developing markets for NTFPs or environmental services requires two preconditions. Firstly, someone must be willing to pay to consume the products. Secondly, someone must be prepared to invest in supplying the products. The latter requires a system for rationing access to non-timber forest benefits, typically through the creation of property rights. Without secure property rights few would invest in supplying the goods, as there would be no way to ensure that people pay to consume the product.

The conditions for markets may exist for a handful of NTFP products, such as game or mushrooms, but in most countries one or both conditions are often absent and NTFPs or the protection of environmental services are not considered viable alternatives to timber harvesting. Governments can promote market development by encouraging demand for NTFPs and environmental services and by establishing secure property rights. Common measures used by governments to promote non-timber forest use include:

- the designation of forest areas for NTFP use or the conservation of particular environmental services
- research into possible commercial uses of products
- education campaigns to inform forest users of possibilities
- compensation to forest owners who invest in NTFPs or protection—these are effectively payments by the government for ensuring national benefits[22].
- the introduction of permits for products that have a market—this measure creates a secure property right for a product

Establishing property rights for environmental services is more difficult than for NTFPs and, in some cases, impossible because they are often characterised by non-excludability[23]. Where a product is non-excludable, it is not possible to control consumption and, thus, to establish property rights. Nevertheless, a good/service's non-excludability is not static and new technology may offer methods to exclude those who do not pay for a service. In the case of biodiversity, countries have developed new permits for bio-prospecting. Carbon, once thought to be non-excludable, is now sold in the form of carbon emission offsets.

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[22] Compensation payments made to forest owners for conservation of environmental services were discussed in section 3.2.2; Boxes 3.3 and 3.5 provide examples of compensation schemes in Costa Rica and Brazil.

[23] See Bass and Hearne (1997) for a discussion of distinctions between public and private goods.

Experience of promoting markets for NTFPs

Measures to promote the use of NTFPs and environmental services are found in several of the countries studied. Apart from those countries that administer compensation for forest protection, listed in Table 3.2, ten countries stand out for additional initiatives. If we consider those aimed at promoting NTFPs first, China, Slovenia, the USA and Brazil stand out for having designated forest areas for NTFP use. In addition, China, Honduras, Mexico and Brazil support the commercialisation of NTFPs. India is also noted for encouraging commercial extraction of NTFPs, by training local users and by investing in market research for new products. While Bolivia has not set aside specific areas for NTFP use, it issues concessions for NTFPs alongside, and often overlapping with, timber concessions and thereby creates a secure property right for selected products. PNG has recently introduced legislation to allow for such NTFP permits and Cameroon has announced its intention to introduce auctions for certain NTFP licences, e.g. game.

Experience of promoting markets for environmental services

Turning to environmental services, several countries have introduced or are planning to introduce institutional structures to regulate the use of forests for bio-prospecting, carbon sequestration and eco-tourism/recreation.

Costa Rica has made the greatest advances in this field, having set up an agency to promote the sale of biodiversity information to pharmaceutical and other companies, another to administer the sale of carbon offsets and a third to organise the sale of watershed protection services to hydro-electricity companies. Costa Rica has also been an active supporter of eco-tourism[24].

The promotion of eco-tourism and recreation has also recently been taken up by Chile (where five 30 year eco-tourism concessions were issued in protected areas in 1996), Bolivia, RSA, Indonesia, Honduras and the UK. PNG and Bolivia have recently introduced biodiversity permits and India is likely to follow suit in the near future with the passing of a new Biodiversity Law.

3.6 Certification

Certification has drawn the attention of governments interested in finding economic incentives to support SFM which do not involve significant government expenditure[25]. Companies around the world have also shown a growing interest in certification, as a tool to capture new markets as well as to guarantee existing markets. The issue of guaranteeing market access has

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[24] See Box 2.3

[25] Additional reading on the potential for certification in encouraging SFM may be found in Bass and Hearne (1997) and Upton and Bass (1995).

become critical for many companies selling to North America and especially Europe, where environmental groups have invested in an intense lobbying campaign to promote purchases of certified products. The growth in third-party certification by organisations accredited to the non-governmental Forest Stewardship Council (FSC), as well as the expansion in national forest management standards, is testimony to the power of consumer demand.

Certification is on the agenda for all but two of the countries (India and Slovenia) considered in this report. In general, certification is being discussed at a national level through multi-stakeholder groups. Where national standards are being developed, they tend to be voluntary and to take either the International Organisation for Standardisation's environmental management system ISO 14001, or the FSC's performance standard, or both, as guides.

In thirteen countries, companies have decided not to wait for the outcome of national deliberations and have become certified by an internationally recognised body, notably to FSC's global Principles and Criteria. In the USA, the process has been organised by an association of forestry operators rather than the government, while in Ireland, Coillte, the state owned forest enterprise, has initiated discussions on a standard for SFM. Table 3 in Annex III details the status of certification, at the national-level, company-level or association-level, in the countries considered.

3.7 Global transfers for forest conservation

Global transfers referred to in this report include initiatives by foreign or international entities to pay forest owners, or those with use rights to forests, for the global benefits such as carbon sequestration and biodiversity[26].

Flows from governments, multi-laterals and International NGOs

Early flows of funds from developed countries to developing countries for forest conservation tended to be transferred between governments or through multi-lateral agencies, such as the Global Environment Facility (GEF), to governments rather than directly to private entities. Environmental NGOs have also played an important part in transferring funds to governments and to developing country NGOs for forest conservation. An innovative mechanism pioneered by the WorldWide Fund for Nature in the nineteen eighties is the Debt for Nature Swap, involving the purchase of discounted developing country debt which is exchanged for domestic financial resources used to invest in conservation.

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[26]This focus here is on those environmental services which attract global finance. The discussion overlaps with that in section 3.5 on the promotion of environmental services.

Companies and private investors–a new source of finance

While GEF projects and Debt for Nature Swaps are important global incentives, in this report we focus on international transfers aimed directly at PSP in SFM[27]. These transfers have tended to be dominated by three groups of investors:

- private companies and associations interested in undertaking projects in Joint Implementation (JI) or similar[28];
- pharmaceutical and other companies, e.g. agri-business companies, interested in the conservation of biodiversity in order to save genetic information in wild species that may prove valuable in the production of drugs or other substances[29]; and
- portfolio or other investors interested in acquiring stakes in environmentally-friendly companies[30].

All three types of investments are relatively new phenomena and are thought to account for only a small fraction of total private finance going into forestry. Precise figures are hard to find, but green/ethical investment funds in 1996 accounted for US$1.6 billion, about 1 per cent of total investment in unit trusts[31].

Despite its small size, private sector interest in SFM and conservation investments is growing. The critical driving force behind JI projects is the anticipation of international legislation requiring, or creating incentives for, various forms of carbon offset investment. This has been given a boost by the recent acceptance of the Kyoto Protocol in 1997. If governments ratify the Protocol, legislation should soon follow allowing for carbon credits to be earned by investing in carbon sequestration in developing countries.

To gain experience in investing in developing countries' forestry sectors, companies (often through private associations) are increasingly undertaking JI projects. Companies who undertake these investments also aim to improve their public image and hope that these investments may be counted towards their carbon emissions targets once the new laws are passed[32].

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[27] GEF and NGO finance is also important for its role as a catalyst for private financial flows.
[28] JI projects refer to investments in forest conservation and SFM in a foreign country with the view to increasing forests' carbon sequestration. See Stuart and Costa (1998) for a fuller description.
[29] The potential funds available for bio-prospecting are discussed in OECD (1996), p126
[30] Portfolio investment by 'green' funds in forestry is often criticised for not having developed the expertise to evaluate forestry investments. For a discussion of the arguments for and against portfolio investment as an incentive for SFM see Grieg-Gran et al (1998)
[31] Grieg-Gran et al (1998)
[32] According to the Kyoto Protocol, JI projects can only be undertaken between two emissions-capped industrial and Eastern European countries. Projects between emissions-capped industrial countries and developing countries that have no emissions cap are referred to as Clean Development Mechanism projects. In what follows we refer to all these investments as JI projects. See Stuart and Costa (1998) for more information on JI.

The main driving force behind pharmaceutical and other companies' investments in forest conservation is their interest in securing access to genetic material that may be used in developing valuable new medicines, agricultural or industrial products.

Growing green portfolio investment aims to improve investors' public image, and to supply a niche market for individuals concerned that their savings are used to promote environmentally friendly activities, including sustainable forestry. They also act on (limited) evidence that responsible companies perform well financially.

In what follows, we outline the growing areas of foreign investment in PSP in SFM and conservation, in relation to the countries considered in this report. The discussion focuses on JI and bio-prospecting, as other work by IIED will assess information on the importance of private foreign investment in national forestry sectors. Table 4 in Annex III summarises country information on global incentives.

Joint Implementation

Although the Kyoto Protocol has not been ratified by all the signatories, several governments have pre-empted the global trading initiative referred to above and set up their own national schemes to monitor current JI projects. While such projects are not required to register with local agencies, it is in their interest to do so if the investor hopes to claim credits for sequestered carbon in future years.

The largest and oldest national scheme is the US Initiative on Joint Implementation (USIJI). This scheme has approved the majority of JI projects for forestry recorded in the countries investigated. Of the seven countries which received money through JI projects, only those in Malaysia did not come through the USIJI scheme. One was organised by the Netherlands's Pilot Project Programme and paid by Forests Absorbing CO2 Emissions (FACE) a private association of electricity companies. The second was paid for by New England Power, another private entity. The remaining JI projects, all of which are USIJI-approved, were found in Indonesia, Costa Rica, Honduras, Russia, Mexico and Bolivia. The Bolivia USIJI project is outlined in Box 3.7.

A more recent phenomenon, illustrated by Costa Rica, is that governments may become more active in promoting themselves for JI projects and setting up local institutions to deal with carbon offset sales. Costa Rica is planning on selling shares in its scheme through the Chicago Board of Trade in the form of CTOs[33].

[33] See Box 2.3 for details on the Costa Rican initiative

Box 3.7 The Noel Kempff Climate Action Project

In 1996 The Nature Conservancy (TNC), American Electric Power Service Corporation, PacifiCorp, BP America, the conservation group Fundacion Amigos de la Naturaleza (FAN) and the Government of Bolivia initiated a JI project to extend (nearly double) the Noel Kempff Mercado National Park in Santa Cruz. The Noel Kempff Climate Action Project (NKCAP) aims to conserve a large area of forest from logging and guarantee its carbon sequestration services in return for a financial transfer of US$9.5 million. In total, the extension in conserved forest area is 817,846 hectares, of which the project paid for 78 per cent. Project developers estimate that the area will sequester approximately 14.5 million metric tonnes of carbon over its 30 year lifetime.

The money transferred under the project was used for several tasks:

- US$1.6 million went to compensate loggers for the loss of their logging rights
- US$1.55 million went to set up environmentally friendly uses of the forest such as eco-tourism, the commercialisation of orchids and bio-prospecting
- US$1.5 million went to establish an Endowment Fund to ensure long term finance, and
- the rest funded leakage prevention activities, protection of the park and technical assistance.

The money paid as compensation was for the right-holders to give up their 20 year contracts, the existing infrastructure and their rights of renewal. They had received the concessions in 1993, so they would have expired in 2013. In general, the amount paid was less than the assessed market value as the concessionaires were aware that under new legislation they were likely to have given up some of their areas anyway, and they were constrained by debt problems.

Taken as a whole, the financial transfer for the extension paid for by the project comes to just under US$15 per hectare, well above the US$1 minimum set for timber concessions.

Bio-prospecting

Costa Rica and PNG have both attracted investments in bio-prospecting—in the former case since 1989 through INBio (see Box 2.3). Although no other countries record formal bio-prospecting contracts, they appear to be preparing for such contracts and some governments have introduced new legislation regarding property rights to these resources. Bolivia has recently passed legislation to permit the government to issue bio-prospecting permits. India is developing a new Biodiversity Law which would provide a framework for trade. The development of new legislation has often been held up by conflicts over how to ensure authorities and local people share the benefits of biodiversity information, that some of the income is invested in maintaining biodiversity, and that contracts do not result in significant forest disturbance over short periods[34].

[34]Although potentially a non-consumptive use, bio-prospecting often turns out to be consumptive, with up to 200 tonnes of a promising species needed just for chemical testing.

Forest authority administration[35]

Raising efficiency in forestry administrations

This section is concerned with reforms to government forest authorities which aim to increase their exposure to market forces. Moves to 'corporatise', as well as to fully privatise, forest authority responsibilities are driven by several factors including intentions to raise efficiency levels, cut costs and make the agencies more client-oriented.

In the countries considered by this report, governments have frequently restructured forest authorities in parallel with other forest sector reforms aimed at increasing PSP. While governments tend to retain control for national-level activities such as policy-making and monitoring and remain responsible for the implementation of forestry legislation, functions that can be left to autonomous agencies or private operators have been hived off.

Separating production from management

Where governments have both production and management responsibilities, a common trend has been to separate the two functions and to either privatise or corporatise the production activities. Corporatisation refers to the transfer of production functions to a financially autonomous entity which is state-owned. The new corporation is normally mandated to make a profit from the sale of timber and other products. Examples of countries where government production functions have been privatised or corporatised are given in Table 4.1.

Management responsibilities have also been handed to independent agencies. In general, management agencies are not given the same degree of administrative autonomy as production agencies and they tend to retain government representatives on their boards of directors. Moreover, unlike

[35] A general overview of the trends in forestry administration is found in Pettenella (1997).

production agencies, they may continue to depend on government financing. Nevertheless, there are cases where management agencies are self-sufficient or earn a large part of their revenue from fees linked to the provision of services to landowners and operators, as well as forestry charges[36]. Ghana's new Forest Service, for instance, is intended to be self-financing. Costa Rica, Honduras and Mexico are unusual for having privatised individual management tasks such as the provision of FMP and silviculture.

Contracting out

Another common feature of forest authority restructuring has been the increased use of private companies to undertake harvesting and management functions, both in state forests and at a national/regional level. This trend in contracting out was touched upon in sections 2.2 and 2.3. Tables 2.2, 2.4 and 2.5 list the countries which have increased their use of private sector contractors over the last ten years.

[36] See section 3.1.2 for a discussion on the incentive implications of financial autonomy

Table 4.1 Forest authority corporatisation and privatisation

Country	Corporatisation	Privatisation
Cameroon		Proposals to privatise the parastatal (ONADEF) in charge of forest management
Ghana	Plans for a semi-autonomous, client-oriented Forest Service	
RSA	Separated production from management functions and created an independent state enterprise, Safcol, to manage state industrial plantations in 1993.	Safcol's full privatisation started in 1999. At same time half of the industrial plantations in the former Homelands are being privatised. Option for further privatisation in 3 years.
Costa Rica		In 1995 responsibilities for Forest Management Plan, inventory, silvi-culture and other tasks were handed to 'forest regents' and effectively privatised. Considering privatising monitoring by handing responsibility to a certification body.
Honduras	Semi-autonomous research and extension service since 1993	Privatisation of all harvesting and most management activities in 1992
Poland	The SFE was created in 1991 as an autonomous, self-financing entity responsible for managing state forests	
Latvia	Proposals to transform the SFS into an autonomous corporation are being considered.	The government's state forest enterprises responsible for physical harvesting were privatised in 1994
Russia		Privatised 95% of forestry enterprises since 1993; The government still owns about 30% shares through 51 holding companies
Slovenia		The 14 Forest Management Enterprises were privatised between 1993 and 1998

Country	Corporatisation	Privatisation
Mexico		Privatisation of harvesting in 1986 and technical services in 1992
PNG	Autonomous National Forestry Service (NFS) which answers to multi-stakeholder board since 1992; plans for financial autonomy resisted; proposal for an autonomous inspectorate to monitor the NFS	
Bolivia	1996 restructuring and creation of administratively and financially autonomous forest authority	Privatised FMP and monitoring by accredited forestry professionals with responsibility for FMP and auditing
Finland	The Forestry and Park Service (FPS) and the Forestry Development Centre are administratively autonomous and the FPS has been financially autonomous since 1994	
Ireland	Coillte, created in 1988, is an autonomous self-financing state corporation responsible for managing the state plantations	
UK	The Forestry Commission split between the Forest Enterprise, Forestry Authority and Department of Forestry in 1992; the FE given agency status in 1996 and mandated to maximise financial returns	Privatisation of state forests permitted since 1981, but slowed since 1997 when a temporary moratorium introduced; currently only small sales permitted

Survey respondent opinions on forest sector reform

Whilst this report is primarily a snapshot of the dynamics of PSP in forestry, many respondents to our survey also offered views concerning forestry sector reform, which are summarised here. The respondents provided opinions on the reasons for reforms, difficulties encountered and the success of reforms[37].

While several respondents provided full answers, many did not. As a result, the information provided below does not represent a comprehensive list of respondents' opinions, but highlights what those who responded feel to be significant. Moreover, because different respondents for the same country often emphasised different factors, the number of causes, difficulties and successes highlighted for a country depends in part on the number of responses that were received for that country. For instance, the fact that reform in China appears to have a more complex set of causes than in Malaysia may be partly due to the fact that three survey responses were received for China as compared to one for Malaysia.

Our analysis of respondents' opinions is not intended to offer a complete picture of the dynamics of country reform processes, but rather to provide some insight into what those close to the process see to be important factors. More thorough answers to the questions asked would require detailed country studies, which are planned in the next phase of this project to be undertaken by IIED. No attempt is made to evaluate the opinions expressed by respondents here[38].

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[37] Refer to Annex I for a copy of the survey. No response was received from Russia and, hence, no opinions were expressed on the reform process; where individuals sent papers they had written in place of a survey response, opinions expressed in the paper are used.

[38] See Annex II for the project outline.

5.1 Reasons for reforms

Table 5.1 below summarises the responses regarding reasons for reforms in the forestry sector. In broad terms, the responses highlighted six main causes for change:

- a desire to raise efficiency and cut costs in forestry administration and the extractive sector
- domestic pressure from environmental groups, indigenous groups, industry and/or consumers
- a desire to achieve SFM
- broader economic or civil service reform that has been extended to the forestry sector
- international pressure by environmental groups, foreign governments, consumers and/or donors
- a desire to abide by international commitments such as those set out in Agenda 21 and subsequent conventions

Table 5.1 Most frequently quoted reasons for reform

Reason	Number of countries	Countries
Efficiency	12	Cameroon, Ghana, RSA, India, Indonesia, Costa Rica, Honduras, Canada, Bolivia, Chile, Brazil, UK
Domestic pressure	11	Cameroon, China, Indonesia, Costa Rica, Canada, USA, PNG, Bolivia, Brazil, Chile, Finland
SFM	10	Ghana, China, India, Malaysia, Honduras, Mexico, PNG, Bolivia, Brazil, Chile
Broader reform	9	RSA, China, Honduras, Latvia, Slovenia, Canada, Brazil, Chile, Finland
International pressure	8	Cameroon, Indonesia, Honduras, PNG, Bolivia, Brazil, Chile, USA
International Commitments	5	Cameroon, Ghana, Bolivia, Chile, Finland

Efficiency

The desire to raise efficiency in the forestry sector is the most commonly highlighted reason for reform. Respondents point to both reforms aimed at raising forest authority efficiency and private sector efficiency, though the former appeared to receive greater emphasis. Respondents for nine of the twelve countries point to public sector inefficiencies as a key driver for reform.

It is interesting to note that a key factor being tackled by reforms aimed at raising efficiency in both the private and public sectors is corruption. A respondent for Bolivia, for example, speaks of the government's vulnerability to *"the economic power exercised by business concerns... and party political*

influence" as a critical focus of reforms. A respondent for Indonesia also highlights the issue of corruption, but in the private sector, as the target of reforms:

> *"the private sector's continued mismanagement of the allocated forests, non-sustainable logging, high waste ratios…cartel building among industries. Collusion, nepotism and bribery."*

Domestic pressure

Respondents from eleven countries highlight NGOs, consumers, indigenous groups, companies and in some cases local banks as drivers for change.

While in many countries these factors are distinct pressures, in some cases they are closely intertwined. Where companies are a growing force for change, for instance, they are often responding to a growing demand for certified products from consumers and NGOs and even local banks. This point is highlighted by a respondent for Brazil who points to an emerging consensus amongst large companies that improved forest management is key to their future profitability. Not only do companies need a clear policy framework to remove the uncertainty surrounding forestry investment, but they are responding to growing demands for improved forest management and certification from their consumers in Europe and North America. Moves by one national bank, BNDES, to consider certification as a potential tool for screening investors will add to the pressures on companies demanding reform.

Those highlighting public concern for the environment as a driver for reform are not only from the developed world. Along with respondents from the US and Canada who point to the *"changing needs of society"*, respondents from poorer countries such as Costa Rica and Chile also speak of an increasingly *"conservation-conscious society"* or *"increased environmental awareness on the part of the citizen"* as key drivers for change. In PNG, following the publication of the Barnett report in 1989, public concern over forest mismanagement has become one of the most serious forces behind reform. According to one respondent

> *"Scandalous corruption and mismanagement exposed by the Commission of Inquiry in 1989 provided domestic political momentum for a policy reform programme ...."*

SFM

The importance of targeting SFM and reducing the destruction resulting from poor forest management was touched on by respondents from ten countries. A respondent for India highlights an opinion expressed by many. He points to a general recognition that *"degradation and deforestation have led to serious ecological consequences including soil erosion, siltation, flooding and the*

spread of 'wastelands'" and notes that this recognition has been critical in galvanising support for reforms which prioritise SFM.

Broader reform

In nine of the countries considered, respondents pointed to economy-wide reforms as an important cause for change in the forestry sector.

For economies in transition, broader reforms of land restitution and increasing PSP in production activities has had significant implications for forestry. According to three respondents for Slovenia, economic transition has been the main driver for change. A Latvian respondent also states that the process of land restitution has been critical in forcing policy-makers to re-think forest management and stimulated changes in the legislative and regulatory framework to ensure sustainability.

In China, two respondents stress that the forestry reform process must be seen within the broader context of national reform. Since the late seventies the government has been pushing forward with plans to build a *"socialist market economy"*. It has also been pursuing a strategy of administrative decentralisation whereby lower levels of government, community groups/collectives and individuals have been given greater responsibility for decision-making. Both sets of reforms have important implications for the forestry sector.

Even in market economies such as Canada, Chile and Finland, broader reforms to reduce the role of the state and raise PSP in all activities have made their mark on forestry. A respondent for Chile, for instance, emphasised the need for reform in forestry to conform to broader moves to increase *"private sector participation in every aspect of production"*.

International pressure

According to respondents, international pressure for reform has come from two main areas: the multilateral institutions and foreign buyers' groups.

Pressure by the World Bank and the International Monetary Fund (IMF), often in the form of conditions attached to the release of loans, is emphasised as a significant driver for change in all three South American countries as well as Cameroon, Indonesia and PNG. Moreover, the influence of the World Bank and IMF is greater than suggested by these figures. In addition to the institutions' direct impact through their requirements for specific forestry reforms, they also have an indirect impact through their demands for broader economic reforms.

A respondent for PNG points to the central role of the World Bank in *"master-minding"* the reform programme. He goes on to emphasise the World Bank's role in maintaining pressure for change:

"[The] Bank later used Structural Adjustment Programme conditionalities to prevent the PNG government from backsliding on its commitment to the reform process, especially with regard to the new revenue system and independence of the National Forest Board."

Buyers' groups of certified products are seen as an important force for change by respondents from Chile and the US. A Chilean respondent emphasises *"pressure from international markets for forest products that come from sustainably managed forests"* as a critical factor. The US respondent also identifies *"global markets for certified wood products"* as a key driver for reform. Together with pressure by domestic companies, who are themselves responding to a growing demand for certified products (see 'Internal pressure' above), certification features strongly as a reason for reform.

International commitments

Five respondents pointed to international commitments as a driver for reform. Commitments to treaties and conventions such as the Convention on Biological Diversity, the Framework Convention on Climate Change and the Convention to Combat Desertification are highlighted.

5.2 Difficulties with reforms

A summary of the difficulties with the reform process identified by respondents is presented in Table 5.2. These can be broadly split between

Table 5.2 Most frequently cited difficulties for reform

Difficulty	Number of countries	Countries
Policy failure		
• tenure/rights security	4	China, Honduras, Bolivia, India
• unclear institutions	3	Cameroon, Bolivia, Chile
• conflicting signals	2	Cameroon, China
• missing policies	6	Indonesia, Honduras, Costa Rica, Canada, Bolivia, UK
Implementation failure		
Lack of resources	14	Cameroon, Ghana, China, India, Costa Rica, Honduras, Latvia, Poland, Slovenia, Mexico, Bolivia, Brazil, Chile, Finland
Stakeholder resistance	13	Cameroon, RSA, India, Indonesia, Malaysia, Costa Rica, Honduras, Canada, PNG, Bolivia, Brazil, Chile, Finland
Market risks	8	China, India, Costa Rica, Honduras, Slovenia, PNG, Bolivia, Brazil
Lack of information/ understanding	7	Cameroon, Ghana, Costa Rica, Slovenia, Canada, Chile, Finland

problems associated with the policies themselves and problems associated with their implementation. The two sets of failures are not always independent as difficulties in implementing reforms may often be traced back to problems with the original reform design. Together these failures are blamed for governments' inability to force through change as well as for governments' own backsliding or reluctance to carry out reforms.

Policy failures

Numerous policy failures were identified by respondents. Of these, four of the most frequently cited problems are:

- a lack of tenure/rights security amongst forest users
- poorly designed institutional arrangements which lead to conflicts of interest within or between forest sector agencies
- conflicting MBIs used by agencies within and/or outside the forestry sector
- missing policies—*"reforms don't go far enough"*

Lack of secure rights

Tenure insecurity is emphasised by respondents for China, Honduras, Bolivia and to some extent India. In China the rapid expansion in contractual relationships between government authorities and private entities has led to confusion as to what is supported by law and what is a temporary arrangement that authorities may reverse. In many provinces, contracts have been reneged and land holders have become skeptical as to whether it is safe to invest in the plots they have been assigned. This skepticism in government contracts is summed up by a respondent for China:

> *"Although regulation regarding contracts for land management specify the rights and responsibilities of both parties which are legally enforceable, there is a lack of confidence in these instruments"*

More recently, the Chinese government has attempted to increase tenure security by formalising the new contractual relationships in its Forest Law of 1998.

All four respondents for Honduras highlight the damage done by an unclear legislative framework. One respondent states that:

> *"Despite passing usufruct rights to forest products to landowners, contradictions and lack of clarity in the legal framework and administrative/normative obstacles have not encouraged SFM and reforestation, especially by small-scale land owners".*

Unclear institutional arrangements

Overlapping and unclear institutional arrangements are cited as a major problem with reforms in Cameroon, Bolivia and Chile. In Bolivia, for instance,

respondents stress the slow progress of institutional reform within the central government and the unclear division of responsibilities between institutions as major stumbling blocks. One states that:

> *"weak linkages between local government units, the Superintendencia Forestal and the Ministry for Sustainable Development and Planning might threaten the effectiveness of the new regime".*

Conflicting signals

The effect of conflicting signals given by different government instruments is an important hurdle for reform in Cameroon and China. According to a respondent for Cameroon the government's policies are weakened in two critical ways:

1. The government's continued protection of the processing sector and its plan to introduce a log export ban in 1999 is in direct conflict with the aim of other reforms such as the introduction of auctions for concessions and *Ventes de Coupe*. Auctions aim to push up area fees, and increased the value of trees to create incentives for investment in forest management. Trade restrictions, on the other hand, have been shown to reduce local log prices and reduce incentives for investment in forest management.
2. The decision to reject the initial proposal for a 40 year concession in favour of a 15 year concession further reduces investors incentives to take a long term management perspective and invest in future harvests.

A Chinese respondent highlights the *"contradictory rules and regulations"* administered by the government. While greater market liberalisation has provided private individuals with incentives to increase their output, these have been counteracted by the new harvesting certificate system aimed at controlling excessive timber extraction in leased lands. Under this system investors may be refused the right to harvest trees they recently acquired. In addition, the complex and heavy taxation system and the lack of extension services reduce the incentive to invest in management.

Missing policies

This is a broad category including other policy related failings highlighted by respondents. Complaints are made:

- by a respondent for Indonesia that *"there is no clear objective set ...other than some vague notion that they will promote SFM"*;
- by respondents from Canada, Honduras and Bolivia that the government has failed to introduce incentives for long term forest management; and
- by respondents from Costa Rica and the UK that the government has failed to go far enough in considering options for PSP.

Implementation failure

Turning to problems encountered in the implementation of reforms, common difficulties highlighted in Table 5.2 include a lack of resources (e.g. expertise and finance) in the state and private sectors, stakeholder resistance, market risks which discourage investment in SFM and a lack of information or understanding about the reforms to be implemented.

Lack of resources and expertise

The most commonly cited problem with implementation is that of a lack of resources. Of the fourteen countries identified as suffering from a lack of resources, seven are thought to lack finance and expertise in both the private and state sectors.

In Latvia, as in the other transitional economies, the state's withdrawal from its active role in forestry in private lands has meant forest owners must take the lead in planning and managing their operations in addition to their traditional role in production. According to one respondent, many owners lack both the money and the expertise in the techniques of forest management to fulfil their new role. Moreover, budget restrictions faced by the government limit its ability to provide owners with extension services such as training or to monitor private activities. These problems are compounded by the small average size of plots which raise the costs of forest management. Thus, although the Forest Law may indicate that the private sector is increasing its role in forest management, in reality the private sector's activities may not have increased.

Respondents for Costa Rica also draw attention to inadequate expertise in the private sector. One states that:

> *"the main problem is in preparing the [private sector] to carry out their role effectively, given that the role implies new levels of knowledge and training that they will not have had to undergo previously"*

In Bolivia, the forestry authority and municipalities are said to suffer a shortage of funds and skilled manpower to implement their new functions, e.g. controlling the development of FMPs and monitoring implementation. The two are inter-linked as low salaries mean that institutions cannot afford skilled employees and those who do join are likely to leave after a short period, thereby undermining continuity within the institutions. Moreover, under-paid staff may be more vulnerable to corruption.

In the private sector, operators and landowners in Bolivia face increased costs to re-tool and re-orient their production around lesser known species. If the sector is *"inefficient, under-capitalised and uncompetitive"* as one respondent states, these costs are likely to be high and in many cases may be prohibitive.

Respondents for Brazil look for underlying difficulties which need to be solved to increase resources available to the private sector. They point to the lack of reasonably priced credit for forestry operators who wish to invest in SFM as a key problem for reforming private operations. Financial institutions are blamed for their *"underlying perception...that natural forest management is of high risk"*. High interest rates may reduce incentives to invest in forest management and lead operators to avoid lengthy applications for logging permits.

Stakeholder resistance

The problem of resistance to reform by one or more of the groups involved in the forestry sector (e.g. the state, private and NGO sectors) is widespread and identified as a major difficulty in thirteen countries.

State sector inertia is common where the reform process involves significant changes to the forest authorities' power and staffing levels. Where large redundancies are expected or individuals are to lose control over activities, those involved tend to resist change. State employee resistance has been highlighted for ten countries including Cameroon, RSA, India, Indonesia, Costa Rica, Honduras, Canada, PNG, Bolivia and Brazil.

The most fiercely resisted reforms appear to be those that lack the support of the politicians and higher levels of government. This is common where reform is perceived as being imposed by donors such as the World Bank and IMF as a condition of loans. Cameroon's and PNG's reform processes have largely resulted from external pressure and have been resisted by government officials. In the case of Cameroon this has led to a series of policy inconsistencies highlighted above. In PNG political resistance has dramatically slowed the implementation of a new revenue system. One respondent for PNG noted that forestry reforms have been:

> *"strenuously resisted by an 'unholy alliance' of logging companies,..., venal politicians, and directors of landowner companies (many of which hold TPs in their own right and engage the logging companies as their contractors)."*

Domestic resistance to reform in PNG suggests that it is vulnerable and may not be sustained:

> *"If the government can escape the fiscal crisis which has forced it to bow down to the World Bank's policy prescriptions (e.g. through the development of new oil and gas fields), forest policy reforms could prove fragile in the absence of a strong domestic coalition for SFM"*.

Where landowners, timber rights holders or communities feel their rights to forest resources are threatened, or that they are being burdened with unfair responsibilities for forest management, they will tend to fight reform. This is the case in RSA, India, Costa Rica, PNG, Brazil, Chile and Finland. According

to one respondent for Costa Rica, the lack of enthusiasm for change amongst the private sector is clear:

> *"The private sector became involved in forest activity for ancestral/family reasons or because of business opportunities. The industry is now obsolete and there is no interest in improving or modernising it."*

NGO resistance has been highlighted as significant in India, Brazil and Finland. In India the NGO sector has put up a vigorous defence against reforms to allow company leases in degraded lands as they fear the new laws will threaten community usufruct rights. In Brazil the NGOs are known for resisting the introduction of a concession system in National Forests because they argue the government will not be able to supervise forest management by operators.

Market risks

Market risks highlighted by country respondents are two-fold. There are risks associated with fluctuating prices for forest products and risks associated with changing costs of production. These risks are not unique to the forestry sector, but are seen by respondents as an impediment to forestry reform as they hold back investment in long term forest management.

Market risks are particularly important in transitional economies where producers are less experienced with market fluctuations. This point is highlighted for China where unexpected changes in prices are said to cause serious cash-flow shortages for households.

Market risks are in no sense limited to transitional economies. This has been made clear by the pain felt by many in the sector following the Asian crisis. The collapse in stock markets, exchange rates and economic activity over the last two years in Asia has forced down prices for forest products and reduced producers' ability to invest. This point is highlighted with respect to PNG, but is likely to be an important factor all over the world as forest producers face increasingly stiff competition from cheap Asian exports. Moreover, recent economic turmoil and exchange rate devaluations in Russia and Brazil have reduced prospects for prices rebounding in the near future.

In addition to the recent market deterioration, respondents for Brazil and Bolivia single out the growing importance of certification as a crucial factor adding to market uncertainty and holding back investment in forest management. By segmenting the market for forest products between those demanding certified products and those who do not, certification has raised concerns that exporters to Europe and North America will lose markets. Equally, those choosing to become certified face an uncertain market. On the cost side, those undertaking certification cannot always easily predict the additional costs of production.

Even where certification is not yet an issue, producers often face increasing forest management requirements by their governments and uncertain future costs of production. Risk associated with higher forest management standards is highlighted for Costa Rica, Honduras, Bolivia and Brazil. In Honduras one respondent points to the *"costs and bureaucratic complexity of complying with the regulatory framework"* as a disincentive for SFM.

Lack of information/understanding

The lack of understanding regarding the reasons for reform overlaps with that of a lack of expertise identified earlier and contributes to private sector resistance to reform. Even in countries which have trained professionals to undertake forest management, operators need to be convinced that they should invest in these activities in order that the improved techniques are taken up.

Respondents for Ghana, Slovenia, Chile and Costa Rica touched on the lack of appreciation of SFM by forest operators and landowners as an important problem with reform. Their views are neatly summed up by the following quote provided by a respondent for Costa Rica:

> *"the main difficulty has been the immaturity of many private organisations, who have not taken seriously their role and the responsibilities that genuine management of resources entails...there is also an ignorance about forest culture on the part of the forest owners: many take a short term view of the forests and see only their wood, and do not see monitoring and management as important aspects in the replacement of the forest resource"*

5.3. Have reforms been successful?

Respondents' views concerning the success or failure of individual reforms in promoting SFM are summarised in Table 5.3 and Table 5.4. Table 5.3 presents respondents' views where these were given for specific reforms under the three reform categories: increased PSP, the use of MBI to encourage SFM and reforms to increase the forestry authority efficiency. Table 5.4 summarises opinions which were given for the overall reform process.

It should be stressed that the response rate to this question was lower than for those relating to the reasons for reforms and the difficulties experienced. On average of all the countries implementing a particular reform, an opinion was given for only 20 per cent. In most instances respondents either did not offer any comments or misinterpreted the question and their answers could not be used. In a few cases respondents emphasised the difficulty of assessing the success or failure of a specific reform. Common difficulties cited are that reforms have not been fully implemented, it is too early to assess their impacts or the impact has varied between different localities. Another reason respondents emphasised they were unable to express an opinion was that other

changes underway in the economy, e.g. liberalisation in transitional economies, swamp the impacts of forestry reform.

Where respondents offer an opinion concerning reform success, it must be remembered that the information is subjective and is not a basis for evaluating different types of reforms. The success or failure of reforms will depend on numerous factors such as how well thy were designed and whether they were implemented effectively. Moreover, in many cases two respondents for the same country may offer opposing views on the success of reforms. Nevertheless, to the extent that a certain reform is found to work well in several countries, this provides a basis for further investigation into the reasons for its success and whether the conditions can be easily replicated. In what follows, we consider opinions on the success of individual reforms first and then opinions on the overall reform package.

Raising PSP in forestry

Opinions on the success of increasing the role of the private sector in forestry tended to focus on forest management. Only two views were expressed on the success of PSP in forest utilisation and two on the success of PSP in ownership. Increased private involvement in utilisation was thought to have had a neutral effect by a respondent for Ireland. A respondent for Slovenia simply stated that it is too early to judge the impact of reforms. Increased PSP in ownership received a warmer endorsement from respondents for Ghana and Mexico.

As noted above, reforms aimed at increasing PSP in forest management attracted the most comment. Of the twelve countries for which responses where given, respondents from Ghana, Costa Rica, Honduras, Poland, Canada and Mexico are positive and respondents from Honduras, Poland and Slovenia are negative. Neutral opinions are expressed for Costa Rica, Indonesia, Brazil and PNG while respondents for India and Ireland state that it is too early to assess the impacts of increased PSP in forest management.

In several cases more than one view is expressed for a single country. The variation in opinions is illustrated for Costa Rica. While two respondents believe reforms have been positive, others are less certain. A proponent of reform states:

> *the privatisation of logging control has been a success story. The incidence of corruption and payment of bribes would appear to have fallen dramatically while quality of logging has been improving...Costa Rica would have been unlikely to move towards sustainable management so quickly if it were not for the involvement of the private sector.*

Another respondent offers a more guarded assessment:

> *There are some instances where private sector participation has yielded good results, by increasing public awareness of the benefits of sustainable management of the forest and its resources and also by bringing about the emergence of micro-companies which deal with the management and conservation of areas, thus improving the quality of life of the locality, and breaking away from the traditional idea of it being beneficial only in generating employment. However, these instances have not been coincidental or spontaneous local initiatives, but long processes where funds have been available via projects.*

Introducing market based instruments

A variety of new policies aiming to promote SFM through the use of MBIs appear to have been successfully adopted. The greatest number of opinions were expressed on certification. Poland, the USA, Brazil and Indonesia were found to have benefited from certification. RSA is viewed to have gained from market liberalisation and Canada from reforms to tenure conditions. A positive opinion was also expressed for Finland's compensation strategy. The only negative opinion expressed was with respect to Slovenia's rapid transition to a market economy. No opinions were given for policies to promote NTFPs and environmental services, global incentives or reforms to revenue systems.

Forestry authority corporatisation and/or privatisation

Opinions on the impacts of forestry restructuring/reform were expressed for four countries and positive views given for Ireland and Poland for their policies of corporatisation. Respondents for Bolivia and Finland gave neutral opinions and the respondents for Ghana and Slovenia stated that it is too early to assess the outcome.

Overall reform package

Opinions on the success of reforms in general are summarised in Table 5.4. Positive responses were received for 39 per cent of the countries for which views were expressed. These included Malaysia, Costa Rica, Honduras, Canada, Mexico, the USA, PNG, Bolivia and Brazil. Negative responses were received for Honduras and Latvia. Respondents for 12 countries felt it was either too early to assess the success of reforms or felt the impact had been neutral.

It is interesting to note that positive views were more common amongst country specialist respondents than government officials. 42 per cent of the country specialists who responded expressed support for changes, while only 36 per cent of the government officials did.

Table 5.3 Success of specific reforms as highlighted by survey respondents

Reform	No. of countries with response	Countries with positive responses	Countries with negative responses	Countries with neutral responses	No comment	Response rate
Increased PSP						
Ownership	2	2	0	0	7	22 %
Utilisation	2	0	0	2	11	15 %
Management	12	6	3	6	11	54 %
Company-community partnerships	1	0	0	1	9	10 %
MBA						
stumpage value capture/cost recovery	2	0	0	2	6	25 %
Incentives	2	1	0	1	14	13 %
Tenure conditions	2	1	0	1	7	22 %
Market liberalisation	2	1	1	0	11	15 %
NTFP and environmental service promotion	0	0	0	0	10	0 %
Certification	4	4	0	0	9	31 %
Global Incentives	0	0	0	0	7	0 %
Forestry authority restructuring						
Corporatisation	4	2	0	2	4	50 %
Privatisation	1	0	0	1	6	14 %
Contracting out	1	0	0	1	12	8 %

Note: The same country may appear twice under one reform category where two respondents offer different opinions. For instance, if one respondent for Indonesia suggests efforts to increase PSP in forest management have been positive and another thinks they have been negative, the country will be counted in both the positive and negative response columns. For this reason the columns do not add up. The number of countries with a response may be less than the sum of the countries with positive, negative or neutral responses.

Table 5.4 Success rate of overall reform package

	Government officials	Country specialists	Total number of respondents	Number of countries
Positive impact	4	8	12	9
Negative impact	1	2	3	2
Neutral impact	6	9	15	12
% positive	36%	42%	40%	39%

Overview and issues for research

6.1 An overview

This report is primarily descriptive, attempting to track the recent changes in PSP in SFM in an era of globalisation and decentralisation. It forms a basis for analysis, research and debate, according to specific themes or in selected countries (see section 6.2).

In section I we described how forestry sectors the world over are in a state of flux. Three of the main features of reform underway over the last ten years include:

- increased PSP in forest ownership, utilisation and management;
- a growing use of MBIs to encourage SFM; and
- a push to raise forest authority efficiency through increased exposure to market forces.

These trends have been examined individually for twenty-three countries in sections 2 through 4. Similarities and differences between country experiences have been highlighted.

In this section, we return to the broader picture and draw together the information described in the main body of the report. Table 6.1 presents a summary of countries which have been implementing reforms in the last ten years. Chart 6.1 depicts the information graphically, to highlight the relative frequency of different measures. No assessment is made as to the success and prospects of reforms, as such an evaluation is beyond the scope of this report. Nevertheless, respondent opinions as to the success of changes and difficulties encountered were highlighted in section 5.

Frequency of different reforms

The evidence presented supports the picture of reform described in section 1. Not only have all twenty-three countries implemented, or are in the process of implementing, reforms to increase PSP in the forestry sector, but all the countries have introduced at least one MBI to guide private operators towards SFM. Forest authority restructuring in the form of privatisation, corporatisation and contracting-out has been in progress in just under 70 per cent of the countries.

Within each of the reform categories—PSP, MBI and forest authority reform—some measures are clearly more common than others:

- Increased PSP appears to have been most common for forest management activities, with all twenty-three countries either attaching new conditions to leases/concessions issued in state or community forests, or increasing the use of private contractors.

- Of the MBIs, incentives have been most widely implemented over the last decade, followed by the promotion of markets for NTFPs and environmental services. Certification has been the third most common MBI employed. The ranking alters when we also consider countries that are planning or considering the implementation of new MBIs. In this case, certification becomes the most popular measure.

- Finally, of the forest authority reforms considered, contracting out has been most widely adopted, followed by privatisation and then corporatisation.

The importance of reform linkages

Comparing the frequency of different reforms is useful in identifying trends, but it is important to remember that only rarely are these measures introduced individually. In most instances, countries implement a number of initiatives aimed at increasing PSP, MBI and forest authority efficiency. The composition of these reform 'packages' is likely to have a critical bearing on the success of individual measures.

Despite its importance, the issue of inter-linkages between instruments has not been dealt with this report. An understanding of context is critical for an appreciation of the linkages. While a better understanding of country reform packages may be gained from individual country profiles compiled in producing this report, the issue will be dealt with more thoroughly as part of country studies to be undertaken by IIED in the second phase of its project, *Instruments for Sustainable Private Sector Forestry*[39].

[39]See Annex II

Innovations

Although many of the reforms under way are based on established theoretical arguments, some countries have ventured into untested territory. These are of interest for policy-makers and donors searching for new ways to promote SFM that may overcome hurdles associated with better known techniques. Innovative instruments that appear to be gaining popularity include:

- forest certification,
- company-community partnerships, and
- measures to increase PSP in forest conservation such as compensation, the promotion of markets for environmental services and global incentives[40].

Countries undertaking these reforms are listed in Table 6.1[41].

Certification

While the concept of forest certification has been around for over a decade, it is only recently that it has started to be put into practice around the world. The founding of the FSC in 1993 provided a major boost and the FSC is still the only international accreditation body devoted specifically to forest certification. National certification schemes are also in their infancy, but rapidly expanding as highlighted in Table 3 of Annex 3.

Company-community partnerships

As a relatively new technique to increase PSP in forestry, company-community partnerships have attracted much attention. Thirteen of the countries considered have successfully promoted at least one company-community initiative over the last decade. In countries with large expanses of community forest ownership, such arrangements are likely to expand. Although in some countries such as PNG, companies and communities have a long history of association—not always successful—formal partnerships are new in most of the countries considered. Despite their novelty, it appears that a variety of contractual relationships, such as outgrower schemes, equity-sharing, joint ventures and other arrangements, are emerging. In addition, in some countries such as Canada, communities are establishing their own enterprises. A key issue is how the community is constituted and represented.

PSP in conservation

A third significant innovation in forest sector reform is a new emphasis on PSP in forest conservation, and a renewed interest in forests' environmental services as financially attractive alternatives to timber. Traditionally, forest

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[40] Although the concept of compensation for land-use restrictions is not new, its application in the forestry sector as a technique to promote conservation is relatively recent.

[41] Of the ten countries included under 'promoting NTFPs and environmental services', five have attempted to create private markets for environmental services. These are Costa Rica, Honduras, Chile, Bolivia and the USA.

conservation has been considered a cost that only the public sector would bear as the benefits that result from protection, such as the maintenance of biodiversity, do not generate financial income. This appears to be changing, as the private sector in several countries is increasingly willing to invest in forest protection in both state forests and private forests. In this study, evidence of increased PSP is found in RSA, Costa Rica, Honduras, USA, PNG, Chile and the UK.

Although the new interest being shown by forest owners in conservation is frequently linked to the growth in non-extractive uses of forests, such as eco-tourism and carbon sequestration, governments have facilitated the growth in PSP through three mechanisms:

- Firstly, to encourage forest protection, governments have paid owners for forest conservation. This has normally been in the form of compensation for lost income associated with not using the forests for timber or converting them to another use.

- Secondly, to help channel private finance for conservation activities, governments have promoted the development of markets where private investors negotiate with forest owners to protect their forests. Each country's approach is different. Costa Rica, for instance, has developed an array of new property rights for individual services including carbon sequestration, biodiversity and watershed protection. Chile has auctioned five areas in National Parks to be managed for all their benefits.

- Thirdly, governments have attempted to attract international or foreign finance for conservation. In many cases, governments have spurred the development of markets for forest conservation by attracting multinational finance.

Taken as a group, at least twelve countries' governments have implemented at least one of these three measures.

Table 6.1 Reforms in the forestry sector over the last ten years

Feature	Considering	Approved	Implementing(ed)
PSP			
Ownership		Poland RSA	Ghana, Costa Rica, Latvia, Slovenia, Mexico, Brazil, Chile, Ireland, UK
Utilisation			
leases/concessions/ volume allotments	India	RSA	China, Honduras, Latvia, Russia, Slovenia, Ireland
contract loggers			Poland, Finland, Ireland, UK
environmental services	India	Bolivia	RSA, Indonesia Costa Rica, Honduras, USA, PNG, Chile, UK
Management			
FMU-level			everywhere
national/regional-level			Cameroon, China, Malaysia, Costa Rica, Latvia, Poland, Slovenia, Russia, Mexico, PNG, Bolivia
Company-community partnerships			Ghana, RSA, China, India, Indonesia, Honduras,Canada, Mexico, USA, PNG, Brazil, Chile, Ireland
MBI			
Revenue system to capture stumpage value/cost recovery	RSA	Ghana, Indonesia, Russia, Slovenia, Bolivia	Cameroon, Ghana, China, Indonesia, Malaysia, Costa Rica, Honduras, Latvia, Russia, PNG, Brazil (Minas Gerais)
Incentives to promote SFM subsidies	Honduras		Indonesia, Costa Rica, Latvia, Poland, Slovenia, Mexico, Chile, Finland, Ireland, UK
compensation		RSA	Costa Rica, Latvia, Slovenia, Brazil, Finland, UK
performance bonds	Cameroon, Indonesia	Ghana	Malaysia, India, [Honduras], PNG, Chile, Finland
cheap loans			China, Indonesia, Costa Rica
tax exemptions	Slovenia		Malaysia, Costa Rica, Poland, Canada, Bolivia, Brazil, Chile, Ireland
Tenure Conditions			
auctions		Ghana, Indonesia, Slovenia, Bolivia	Cameroon, RSA, China, Malaysia, Honduras, Latvia, Russia
lengthened duration/ renewability	Indonesia, Malaysia, Latvia	Ghana	Cameroon, RSA, China, Russia, PNG, Bolivia
transferrability		Ghana	Cameroon, RSA, China, Indonesia, Honduras, PNG, Bolivia

Market Liberalisation	UK		RSA, China, India, Indonesia, Malaysia, Costa Rica, Honduras, Latvia, Poland, Russia, Slovenia, Mexico, Bolivia
NTFP & Environmental Service Promotion	India, Cameroon		RSA, China, India, Indonesia, Costa Rica, Honduras, Latvia, Slovenia, Mexico, USA, PNG, Bolivia, Brazil, Chile, Finland, UK
Certification (national & third party)	Cameroon, Ghana, RSA, China, Malaysia, Costa Rica, Latvia, Russia, Mexico, USA, Bolivia, Brazil, Chile, Finland, Ireland		RSA, Indonesia, Malaysia, Costa Rica, Honduras, Poland, Canada, Mexico, USA, PNG, Bolivia, Brazil, Chile, UK
Global Incentives (JI, bio-prospecting)	India		Indonesia, Malaysia, Costa Rica, Honduras, Russia, PNG, Mexico, Bolivia
Forest authority restructuring			
Corporatisation	Latvia, PNG	Ghana	RSA, Honduras, Poland, Bolivia, Finland, Ireland, UK
Privatisation	Cameroon		RSA, Costa Rica, Honduras, Latvia, Russia, Slovenia, Mexico, Bolivia, UK
Contracting Out	Bolivia		Cameroon, RSA, India, Malaysia, Honduras, Latvia, Poland, Slovenia, Mexico, PNG, Finland, Ireland, UK

6.2 Research questions

This report has provided a snap-shot of forest sector reforms in twenty-three countries over the past decade, and attempted to identify emerging trends and areas where there has been a recent surge of interest. As already emphasised, an important aim has been to gather information as a basis for designing further research to be undertaken by IIED and its partners, through country and thematic studies in the next phase of the project.

Numerous questions arise from the information obtained. In the list that follows an attempt is made to isolate the most significant questions. The queries are split between those relating to country reform processes and questions relating to the innovative techniques identified. The first set is aimed at guiding in-depth country studies and the second, cross-country thematic studies.

Possible focus countries for the first set of questions are listed in Table 6.2. The countries have been selected from those included in this report, based on

various criteria, including the number of relevant reforms undertaken in the country, when the reforms were implemented, whether further in-country research is likely to contribute to the process of reform, whether the lessons learnt will be useful for other countries considering reform and the interest expressed by potential local counterparts in such a study.

Suggested questions for country studies

- **Was there an identifiable set of pre-conditions that were necessary for reforms to be introduced?**
  This question has particular relevance in explaining why measures which have been advocated by academics for years, such as the introduction of a stumpage value-based revenue system, have only recently gained acceptance. For countries such as Costa Rica, answers to this question should also seek to explain what conditions have permitted other innovative mechanisms to be adopted so readily.

- **Which reforms work well together and which do not?**
  In other words, are there identifiable positive and negative linkages between instruments? One linkage which has been touched on in this review is that between forest authority reform and increased PSP in activities traditionally reserved for governments. Other linkages are likely to exist between different MBIs.

- **What are the main challenges which threaten the success of reform? If these have been overcome, how was this achieved?**
  This question looks for a thorough analysis of techniques used to overcome difficulties with reforms.

- **Have reforms promoted SFM?**
  This necessitates a thorough analysis in relation to locally-defined goals for SFM. It may be difficult to answer without an adequate baseline.

- **What are the costs and benefits of particular reforms, and who are the main gainers and losers?**
  Even if reforms promote SFM, they need not be optimal in the sense that they are better than an alternative package. It is important to compare alternatives' costs and benefits. Equity considerations will be important here.

Questions for thematic issues/cross-country studies

Forest certification

- Does certification lead to improved field-level forest management?
- What are the costs and benefits associated with its implementation at micro (forest/enterprise) level and how are they distributed?

- Do the costs and benefits differ significantly at macro level e.g. between countries? If so, how and why?
- Does demand for certified products look set to grow and is certification therefore a sustainable policy initiative?

Company-community partnerships

- What are the main driving forces behind the emergence of company-community partnerships for the production of NTFPs or forest conservation, as well as timber production?
- What are the costs and benefits of alternative schemes?
- Do the costs and benefits vary significantly between countries/case studies? If so, why?
- How might arrangements be developed to suit different products/services and community types?
- Do partnerships lead to SFM?

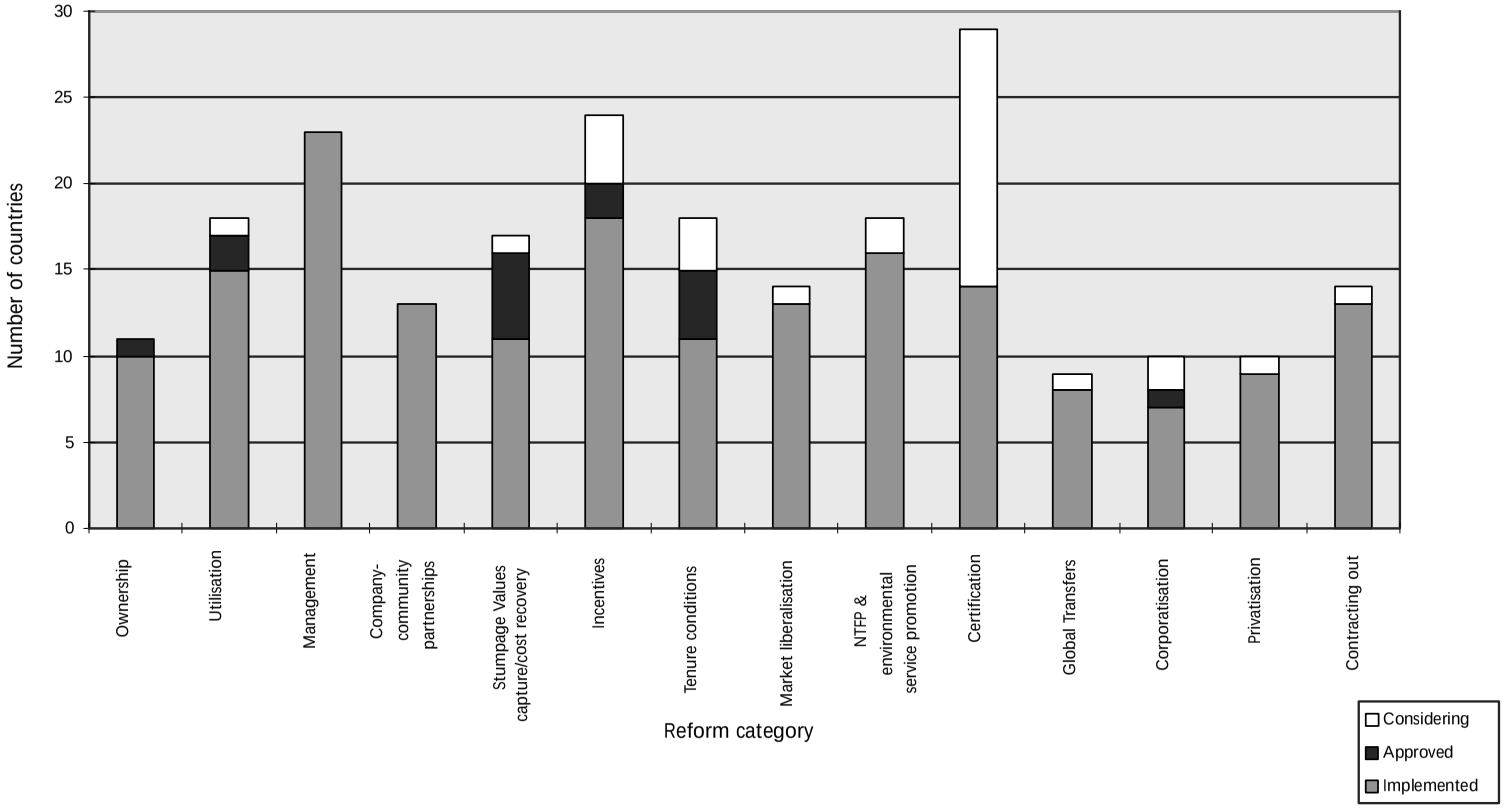
Schemes to promote PSP in conservation (compensation, global incentives and the promotion of markets for environmental services)

- Have these schemes been successful in increasing PSP in conservation?
- What are the costs and benefits associated with alternative schemes and how do these vary between countries?
- What factors determine differing experiences between countries?
- Is increased PSP in conservation sustainable?

Table 6.2 Potential focus countries

Brazil
Cameroon
China
Costa Rica
India
Indonesia
PNG
Poland
RSA
Russia

Chart 6.1 Forestry sector reform over the last ten years: an overview



Bibliography

Balogun, P., B. Howard, S. Bass, O. Dubois, J. Mayers and E. Morrison. 'Institutional Change in Public Sector Forestry: A Preliminary report of the Issues'. Draft prepared for DFID. Nov., 1997.

Barbier, E., J. Burgess, J. Bishop and B. Aylward. 'The Economics of the Tropical Timber Trade'. Earthscan Publications Ltd., London. 1994.

Bass, S., P. Balogun, J. Mayers, O. Dubois, E. Morrison and B. Howard. 'Institutional Change in Public Sector Forestry: A report of the Issues'. IIED, London. May, 1998.

Bass, S. and R. Hearne. 'Private Sector Forestry: a review of instruments for ensuring sustainability'. Forestry and Land Use Series No. 11. IIED, London. 1997.

Beckley, T. 'Moving Toward Consensus-Based Forest Management: A Comparison of Industrial, Co-managed, Community and Small Private Forests in Canada'. 1998.

Bourke, I. J. and J. Leitch. 'Trade Restrictions and their Impact on International Trade in Forest Products'. FAO, Rome. 1998.

D'Silva, E. And S. Appanah. 'Forest Management for Sustainable development'. An EDI Policy Seminar Report, No. 32. The World Bank, 1993.

FAO. 'State of the World's Forests'. FAO, Rome. 1997.

FAO. 'People and Forests'. FAO, Rome. 1997b.

Gray, J. A. 'Forest Concession Policies and Sustainable Forest Management of Tropical Forests' in UNDP Proceedings for the Workshop: Forest Policies and Sustainable Development in the Amazon'. Rio de Janeiro, Brazil. 14-16 July, 1997.

Gray, J.A. 'Forest Revenue Systems in Developing Countries: Their Role in Income Generation and Forest Management Strategies'. FAO Forestry paper 43, Rome. 1983.

Grieg-Gran, M. 'Fiscal Incentives for Biodiversity Conservation: The ICMS Ecologico in Brazil'. Environmental Economics Discussion Paper (forthcoming).

Grieg-Gran, M., T. Westbrook, M. Mansly, S. Bass and N. Robins. 'The Role of Foreign Portfolio Investment in Sustainable Development: the Case of the Forest Products Sector in Emerging Markets'. IIED. 1998.

Gregersen, H., J.E.M. Arnold, A. Lundgren, A. Contreras, M.R. de Montalembert and D. Gow. 'Assessing Forestry Project Impacts: Issues and Strategies'. FAO Forestry Paper No. 114. Rome, 1993.

Grut, M., J.A. Gray and N. Egli. 'Forest Pricing and Concession Policies: Managing the High Forests of West and Central Africa'. World Bank Technical Paper No. 143. Africa Technical Department Series. Washington, DC. 1991.

Haltia, O. and K. Keipi. 'Financing Forest Investments in Latin America: The Issue of Incentives'. IDB ENV-113. Washington, DC. Dec., 1997.

Hobley, M. 'Institutional Change Within The Forestry Sector: Centralised Decentralisation'. ODI Working Paper No. 92. June, 1996.

Hyde, W., D. Newman and R. Sedjo. 'Forest Economics and Policy Analysis: An Overview'. World Bank Discussion Paper No. 134. The World Bank. 1991.

Hyde, W. and R. Sedjo. 'Managing Tropical Forests: Reflections on the Rent Distribution Discussion'. Land Economic, 68(3):343-350. 1992.

Lopez, R. 'Policy Instruments and Financing Mechanisms for the Sustainable Use of Forests in Latin America'. IDB ENV-106. Washington, DC. Dec. 1996.

Merlo, M. and M. Paveri. 'Formation and Implementation of Forest Policies: A Focus on the Policy Tools Mix' in the Proceedings of XI World Forestry Congress. Antalya, Turkey. Oct. 13-22, 1997. FAO, Rome.

Miranda, M.L. O.M. Corrales, M. Regan and W. Ascher. 'Forestry Institutions' in Sharma, N.P. (ed) 'Managing the World's Forests: Looking for Balance Between Conservation and Development'. Kendall/Hunt Publishing Co., Iowa. 1992.

OECD. 'Saving Biological Diversity: Economic Incentives'. OECD, 1996.

Palo, M. 'No Sustainable Forestry Without Adequate Privatisation'. Draft from the Finnish Forest Research Institute METLA, Helsinki. Nov., 1997.

Paris, R. and I. Ruzicka. 'Barking up the Wrong Tree: The Role of Rent Appropriation in Sustainable Tropical Forest Management.' ADB Environmental Office Occaisional Paper. No. 1. 1991.

Pattenella, D. 'New Trends in Public Forestry Administration' in the Proceedings of XI World Forestry Congress. Antalya, Turkey. Oct. 13-22, 1997. FAO, Rome.

Poore, D., P. Burgess, J. Palmer, S. Rietbergen and T. Synnott. 'No Timber Without Trees: Sustainability in the Tropical Forest'. Earthscan Publications Ltd., London. 1989.

Quesada Mateo, C.A. 'Debt for Nature Swaps'. FAO Conservation Guide No. 23. 1993.

Repetto, R. 'The Forest for the Trees? Government Policies and the Misuse of Forest Resources'. WRI, 1988.

Repetto, R. And M. Gillis (eds.). 'Public Policies and the Misuse of Forest Resources'. WRI. Cambridge University Press, 1988.

Richards, M., G. Navarro, A. Vargas and J. Davies. 'Decentralising Forest Management and Conservation in Central America'. ODI Working Paper No. 93. 1996.

Ross, R.L. 'Government and the Private Sector: Who Should Do What?'. The RAND Corporation. 1988.

Ruzicka, I. And P.M. Costa. 'Sustainable Forest Management: Allocation of Resources and Responsibilities'. Unpublished?

Sargent, C. 'Signals for Change - a brief review of the concept and application of incentives for improved tree and forest management'. Forest House Paper 1. IIED. Unpublished.

Sharma, N.P. (ed.). 'Managing the World's Forests: Looking for Balance Between Conservation and Development'. Kendall/Hunt Publishing Co., Iowa. 1992.

Sharma, N., S. Rietbergen, C. Heimo and J. Patel. 'A Strategy for the Forest Sector in Sub-Saharan Africa'. World Bank Technical Paper No. 251. Africa Technical Department Series. Washington, DC, 1994.

Stuart, M. and P. M. Costa. 'Climate Change Mitigation by Forestry: A Review of International Initiatives'. Policy that works for Forests and People: Discussion Paper. Series No. 8. 1998.

Upton, C and S. Bass. 'The Forest Certification Handbook'. Earthscan. London, 1995

Vincent, J.R. 'Rent Capture and the Feasibility of Tropical Forestry Management'. Land Economics, 66(2): 212-223. 1990.

Vincent, J.R. and C.S. Binkley. 'Forest Based Industrialisation: A Dynamic Perspective' in Sharma, N.P. (ed) 'Managing the World's Forests: Looking for Balance Between Conservation and Development'. Kendall/Hunt Publishing Co., Iowa. 1992.

World Bank. 'Forestry; The World Bank's Experience'. Operations Evaluation Department, The World Bank. 1991.

World Bank. 'The State in a Changing World'. World Development Report, 1997. Oxford University Press.

Annex I: Global survey and country response rates[1]

Global review of private sector participation in sustainable forest management[2]

Forest Authority/Country Specialist Questionnaire

Country:	
Name of Forest Authority:	
Contact person and details for future communication:	
Date:	

1. Private sector participation in sustainable forest management

a. Has the role of the private sector in forestry increased in your country over the last ten years? If so, what are the main areas of increased private sector involvement (e.g. land ownership, forest management, harvesting, service provision such as monitoring, etc.)?

b. Have there been any attempts to introduce new market-based approaches, or to reform existing policies, e.g. royalties, area fees, performance bonds, certification, etc. in the last ten years? If so, please describe the main components of these reforms.

c. Has the forest authority in your country taken on new responsibilities, or been granted more autonomy (administrative and/or financial) in the last ten years? If so, please describe the new arrangements.

d. What are the main reasons for the reforms described in a through to c above?

e. Please describe any difficulties encountered in introducing the above reforms, or any which you expect to arise.

[1]The survey was available in English, French, Spanish and Portuguese.

[2]The private sector is distinguished from government and civil society by its principal aim to earn a profit.

f. In your opinion, how have the reforms you describe helped (or hindered) the adoption of more sustainable forest management practices? Please indicate the impact of measures individually.

2. Resource ownership

a. How is forest resource ownership organised in your country? Please fill in the table below. If land ownership is dealt with separately from the ownership of trees, please go to tables b and c.

Forest resource ownership	National forest area (ha)[3]	% Total Forest Area (tick relevant range)				
State		0-20%	20-40%	40-60%	60-80%	80-100%
Private		0-20%	20-40%	40-60%	60-80%	80-100%
Communities		0-20%	20-40%	40-60%	60-80%	80-100%

Please go to section 3.

b

Forest land ownership	National forest area (ha)	% Total Forest Area (tick relevant range)				
State		0-20%	20-40%	40-60%	60-80%	80-100%
Private		0-20%	20-40%	40-60%	60-80%	80-100%
Communities		0-20%	20-40%	40-60%	60-80%	80-100%

c

Forest resource ownership	National forest area (ha)	% Total Forest Area (tick relevant range)				
State		0-20%	20-40%	40-60%	60-80%	80-100%
Private		0-20%	20-40%	40-60%	60-80%	80-100%
Communities		0-20%	20-40%	40-60%	60-80%	80-100%

3. Concession allocation[4]

a. Are forest concessions allocated to the private sector? Yes ☐ No ☐

If yes, please fill in the tables b, c and d. If no, go directly to table d.

b. Concessions may be allocated to private forestry operators in various ways, e.g. by administrative decision or competitive bidding. In the case of administrative allocations, the decision criteria for selecting concession holders may or may not be made public. Similarly competitive arrangements may involve open bidding or sealed tenders. Please describe the approach(es) taken in your country.

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[3] National forest refers to the total area classified as forests in your country.

[4] A concession is an exclusive right to harvest timber or non-timber products from a particular forest area, or to provide specified forest-based services (e.g. recreational facilities). Other terms commonly used to describe this right include harvesting permits, rights agreements and forest leases.

Method of Allocation	Details
Administrative	
Competitive	

c. Concessions are sometimes grouped into categories defined by size or other features, in order to simplify administration by forest authorities. The following box asks you to list details for different sized concessions in your country. If concessions are not distinguished by size, please describe how they are grouped for administrative purposes in the space provided for comments.

Size Range (ha) e.g. 0 -1,000 ha	Duration (yrs)	Transferrable (yes/no)[5]
Comments:		

d. Please tick the box (or boxes) which best describe the majority of forest concession holders in your country. If new entrants are of a different character, please note the main differences in the space for comments. If more than one box is ticked, briefly explain why in the space for comments.

Individuals/ families	Small national companies	Medium sized national companies (<50 employees)	Large national companies (50-500 employees)	Multi-national companies (>500 employees)
Comments:				

4. Private sector participation at forest management unit level

Please identify management activities undertaken by the private sector at the level of the forest management unit. Where the private sector is involved, briefly describe its role in the column entitled 'Comments'.

Management activity	Private sector involvement? (yes/no)	Comments
Assessing environmental and/or social impacts		
Resource inventory		
Demarcating boundaries		
Forest management planning		

[5]Concessions are transferrable if they can be sold by the concession holder before the concession expires.

Land preparation		
Road building and maintenance		
Marking trees to be harvested		
Harvesting		
Silvicultural treatments		
Chemicals and pest treatments		
Reforestation		
Monitoring		
Auditing/Certification		
Training		
Contributing to social welfare		
Other (please specify):		

5. Private sector participation in national level forestry activities

Please identify forestry activities undertaken by the private sector at a national or regional level.[6] Where the private sector is involved, briefly describe its role in the column entitled 'Comments'.

Management activity	Private sector involvement?	Comments
	(yes/no)	
Revenue collection		
Fire protection services		
Monitoring and enforcement		
Exporting and marketing services		
Research and extension		
Training and education		
Provision and maintenance of recreational facilities		
Other (please specify):		

[6]Please replace the word 'National' with State/Provincial/Territory or any other regional classification to reflect the relevant level of government at which the selected forestry activities are undertaken.

Surveys and follow-up queries completed by country

Region and country	Surveys completed	Follow up queries Sent	Follow up queries Replies
Africa	**38**	**20**	**7**
Benin	3	0	0
Burundi	2	0	0
Cameroon	2	2	2
Cape Verde	1	0	0
Central African Republic	1	0	0
Chad	1	0	0
Congo (Brazzaville)	1	0	0
Cote d'Ivoire	1	0	0
Equatorial Guinea	1	0	0
Gambia	1	0	0
Ghana	2	2	2
Guinea-Bissau	1	0	0
Kenya	3	3	0
Lesotho	1	0	0
Malawi	2	2	0
Niger	1	0	0
RSA	1	1	1
Sierra Leone	1	0	0
Senegal	1	0	0
Tanzania	3	3	1
Togo	1	0	0
Uganda	2	2	0
Zambia	5	5	1
Asia	**26**	**28**	**13**
Bangladesh	5	5	0
Cambodia	1	1	1
China	3	3	2
India	3	3	2
Indonesia	3	8	5
Laos	2	2	1
Malaysia	1	6	2
Pakistan	3	0	0
Philippines	4	0	0
Thailand	1	0	0
Caribbean	**5**	**2**	**2**
Belize	1	1	1
Dominican Republic	1	0	0
Guyana	2	1	1
Jamaica	1	0	0
Central America	**14**	**12**	**4**
Costa Rica	5	6	2
El Salvador	1	0	0
Guatemala	1	0	0
Honduras	6	6	2
Panama	1	0	0

Eastern Europe and CIS	**16**	**13**	**8**
Albania	3	0	0
Armenia	1	1	1
Croatia	2	2	1
Czech Republic	1	1	1
Estonia	1	1	0
Latvia	1	1	1
Lithuania	1	1	1
Poland	1	1	1
Romania	2	2	1
Slovenia	3	3	1
North America	**4**	**2**	**2**
Canada	2	1	1
Mexico	1	0	0
USA	1	1	1
Pacific	**9**	**9**	**3**
Australia	2	2	0
Fiji	1	1	0
New Zealand	2	2	1
PNG	2	2	1
Solomon Islands	1	1	0
Vanuatu	1	1	1
South America	**18**	**8**	**3**
Argentina	1	0	0
Brazil	4	2	0
Bolivia	4	2	2
Chile	1	1	0
Ecuador	5	3	1
Peru	2	0	0
Uruguay	1	0	0
Western Europe	**12**	**9**	**6**
Denmark	1	1	1
Finland	4	4	3
France	1	0	0
Ireland	1	1	1
Portugal	1	0	0
Sweden	2	2	0
Turkey	1	0	0
UK	1	1	1
Total	**142**	**103**	**48**

Surveys sent and completed by region

Region	No. of surveys requested	No. completed	No. countries covered	Response rate (% of requested)	Follow ups sent	Follow ups returned	Follows ups response rate (%)	Follow ups sent as % surveys received
Africa	90	38	23	42%	20	7	35%	53%
North America	5	4	3	80%	2	2	100%	
Asia	47	26	10	55%	28	13	46%	108%
Caribbean	21	5	4	24%	2	2	100%	40%
Central America	32	14	5	44%	12	4	33%	86%
Eastern Europe and CIS	44	16	10	36%	13	8	62%	81%
Pacific	24	9	6	38%	9	3	33%	100%
South America	44	18	7	41%	8	3	38%	44%
Western Europe	21	12	8	57%	9	6	67%	75%
Total	**332**	**142**	**76**	**43%**	**103**	**48**	**47%**	**73%**

Annex II Outline of IIED'S project

Instruments for Sustainable Private Sector Forestry- an IIED collaborative research project, 1998 to 2000

The project's aim: To identify effective market and regulatory instruments for ensuring that the private sector produces social and environmental benefits from forest management; and to promote these instruments.

The approach: Based on collaborative research with local, multi-disciplinary teams in six focal countries, and on assessing key experience elsewhere. Coordinated by the Forestry and Land Use Programme, and involving staff of the Environmental Economics Programme and Sustainable Consumption initiative. Includes collaboration with the Oxford Forestry Institute and Overseas Development Institute. The work will cover:

- Global review of private sector participation in forest management [the current report]
- Research on mechanisms/instruments; their impacts; and how to improve them:
  1. partnerships between companies and communities
  2. certification and audit
  3. other innovative instruments affecting public and private lands
- Research on companies: potentials and constraints facing selected companies
- Research in countries: six in-country multidisciplinary teams develop options for instruments and policy environment for sustainable private sector forestry.
- Dissemination activities: feeding findings and recommendations into international fora, private sector fora, as well as into national processes in the six focal countries
- Design of pilot activities: to develop/test instruments and to improve capacities, focusing on the six countries

The project is funded by the European Commission (DG-VIII) and the UK Department for International Development.

Annex III Supplementary report tables

Table 1 The private sector share of commercial timber extraction[1]

Country	Share of total output (%)
Africa	
Cameroon	>90%; 100% natural forests; government utilises 42,000 ha plantations
Ghana	<100%; a third of concessions in Reserve forests awarded to state companies
RSA	88% of total commercial roundwood (1996/7); state enterprises supply over 60% softwood sawlogs, planned privatisation of commercial harvesting
Asia	
China	No data, but the private sector's share is growing
India	Scattered private plantations are estimated to produce 30% to 90% for different states
Indonesia	<100%; private sector has 90% of concessions in production forests; 10% are held by state companies
Malaysia	100%; 60% from national production forests, 40% state forests
Central America	
Costa Rica	100%; all from private forests
Honduras	<100%; private and community groups in state forests and extraction from private and community forests. State harvesting ended in 1992
Eastern Europe & CIS	
Latvia	100%; all state and private forest harvesting done by PS
Poland	81% total (6% from private forests, and 80% of the 94% of total extraction from state forests)
Russia	About 70% (95% of forestry enterprises privatised, but state retains shares to about 30% of companies)
Slovenia	100%; 37% from privatised FMEs and 63% from smallholders
North America	
Canada	100%; 81% from provincial/territorial forests and 19% private forests
Mexico	Just under 15% of ejidos and indigenous communities with forest land sell standing timber to private loggers
USA	100%; 94% of total from private forests, and all extraction from state forests
Pacific	
PNG	100%; 88% of exports by companies in community forests and 12% by land-owning companies
South America	
Bolivia	<100%; all from state forests and private forests; uncertain share of community forest output
Brazil	100%; 75% from native forests, 25% private plantation
Chile	100% private; all from private plantations
Western Europe	
Finland	91% from private forests and small share of state forest extraction
Ireland	100%; 5% private plantations, 95% from state forests
UK	46% from private forests; 27% state forests auctioned standing; most of the state Forest Enterprise extraction contracted out

[1]These figures include private sector extraction from private, state and community forests.

Table 2 Forest management by private operators in private forests

Countries	Date reform	Private responsibilities
Government controls		
RSA	1998	Until 1998 afforestation permits require EIAs and other forest management commitments; from 1998 minimum standards
India	1980	Forest Conservation Act requires FMP
Costa Rica	1996	Forest Act requires owners to pay a registered 'forest regent' to undertake: I, FMP, M and themselves to undertake: S, CT, RC&M and R
Honduras	1992	Required to undertake FMP and other activities in plan
Poland	1991	Forest Law limits harvesting in protected areas and management must follow a state FMP.
Slovenia	1993	Forest Act requires FMP, S, R, etc.
Latvia	1994	Forest Act requires FMP, S, R , etc. Proposals for increased owner discretion
Canada	>10 yrs	Forest management in private forests is not controlled, but promoted through incentives and by linking approval of concessions in public land to performance in private land
USA	>10 yrs	Federal laws require environmental protection; state Forest Acts require various forest management tasks; Best Management Practices (BMP) are encouraged through incentives: PSP in EIA, I, FMP, S, CT, TM, R, RC&M
Bolivia	1996	Require FMP and activities in plan
Brazil	1980s	Large processors are required to ensure forest management in areas that supply their timber to receive a 'way bill'; undertake I, FMP, S, R
Chile	1993?	EIAs, FMPs, I, BD, TM, RC&M, S, R
Finland	1997	Forest Act sets broad goals for ecosystem management and increases owners' discretion in achieving the goals.
Ireland	early 90s	Receipt of grants depends on owner committing to forest management guidelines; FMP, S, R
UK	1989,	Receipt of grants depends on owner committing to forest management 1991 guidelines; FMP, S, R
Self-regulation		
RSA		Guided by government best-practice recommendations; larger companies have their own environmental codes
Canada	mid-90s	Companies voluntarily undertake certification (either FSC, ISO 14001 or the Canadian Standard Association scheme) which requires adherence to guidelines for forest management
USA	1996	90% of large forest companies are committed to the American Forests & Paper Association's Sustainable Forestry Initiative which sets out 12 principles for forest management, but is not yet audited
Brazil	>10 yrs	High level of plantation management to ensure maximum productivity

Key:

EIA environmental impact assessment
I inventory
FMP forest management plan
BD boundary demarcation
TM tree marking
S silviculture
CT chemical treatment
R reforestation/regeneration
RC&M road construction and maintenance
SI social infrastructure: hospitals, schools, recreational facilities, etc.
T training
M monitoring
C/A certification/auditing

Table 3 Certification as an instrument for SFM

Countries	Date introduced	Comments
National Standards		
Cameroon	ongoing	Draft national FSC standard 1996; working on final version
Ghana	ongoing	Draft national quality management system standard produced, including performance standards based on government regulations; no certified forests to date
RSA	ongoing	Developing a national standard
China	planned	WWF-China is exploring options for certification, SFM indicators and criteria; Co-operation with the Chinese Academy of Forestry
Indonesia	1998	Indonesian Eco-labelling Institute LEI developed a national standard. Top 3 grades are recognised by the FSC. Approximately 12 companies submitted applications with a further 4 currently being assessed
Malaysia	ongoing	National certification body established. Draft national standard based on ITTO guidelines. Pilot certification project completed in three states.
Costa Rica	ongoing	National committee established in 1996 to develop national standards. Certification also likely to play major role in carbon offset market as a verification mechanism
Latvia	ongoing	Early discussions and a multi-stakeholder council set up in 1995 to consider options for national-level certification
Russia	ongoing	2 national workshops in 1998; Government strongly favours obligatory system, but resisted by private sector and NGOs
Canada	1996	The Canadian Standards Association developed a national certification scheme. 8 million ha expected by 2003
Mexico	ongoing	National standard being developed by a network of NGOs set up in 1996; linked to Rainforest Alliance's Smartwood Programme
USA	ongoing	Working group has been set up to consider an ISO 14001 standard
Bolivia	ongoing	National FSC-approved standard being developed
Brazil	ongoing	National working group on national scheme to report in 1999
Chile	ongoing	National working group discussing alternatives
Finland	ongoing	An ISO 14001 national environmental management standard approved; By 1998, 14 companies certified; a new initiative launched and moving toward a regional scheme allowing for small group certification
UK	1998	A UK Forestry Standard introduced; designed to be FSC-compatible

Countries	Date introduced	Comments
Third Party Certification		
RSA	1990s	Safcol's Kwazulu-Natal plantations, Mpumulanga South plantations and its Weza sawmill FSC certified. Mondi 214,000 ha FSC approved, expects total area of 650,000 ha to be approved 1998; smaller exporters FSC certified
Malaysia	1990s	Two companies FSC certified.
Costa Rica	1990s	Two NGOs have applied to become local FSC accreditation bodies; 25,173 ha certified, mostly plantation forests.
Honduras	1990s	One agency established links with the Rainforest Alliance's Smartwood initiative in the USA; Two community areas certified (>14,000 ha)
Poland	1990s	4 of the 17 Regional Directorates of the State Forest Enterprise, covering over 1.5 million hectares, have received FSC certification
Canada	1990s	FSC and ISO 14001. By 2003, expect 8 million ha FSC and 69 million ha ISO
Mexico	1990s	4 community based and ejido operations have been independently certified under the Rainforest Alliance's Smartwood programme and 30 are expected to be certified in the near future.
USA	1990s	1.4 mil ha FSC certified
PNG	1990s	FSC certification pushed by international NGOs and donors for small producers; no large companies certified
Bolivia	mid-90s	Third party certification incorporated in 1996 Law as alternative to 5 yearly audits; 430,000 ha Smartwood accredited to date; 1 million ha awaiting approval
Brazil	1990s	Total FSC certified: 380,000 ha
Chile	1990s	3 companies have ISO 14001 accreditation
UK	1990s	Several small forests certified by FSC-accredited bodies
Other		
USA	1996	The AF&PA's Sustainable Forestry Initiative is a producer group scheme based on principles of SFM and monitored by multi-stakeholder group, but no in-forest verification
Ireland	ongoing	Coillte, the state enterprise, interested in certification and published a consultation document on SFM in 1998. Prepared with an eye on FSC standards

Table 4 Global transfers

Countries	Date introduced	Comments on PSP
JI Projects		
India	planned	One company, Sterling Tree Magnum, exploring opportunities for JI for plantation
Indonesia	1997	One USIJI project to undertake reduced impact logging to reduce emission of green house gases in Borneo. Area of 600 ha at estimated cost US$180,000. PSP through 2 concessionaires and the Association of Indonesian Concession Holders
Malaysia	1990s	Two projects in Sabah. Carbon offset through enrichment planting and reduced impact logging in collaboration with FACE of the Netherlands and New England Power respectively
Costa Rica		Carbon offset certificates pioneered so can sell as part of JI projects; certificates to be launched on Chicago Board of Trade; Three USIJI approved projects
Honduras	1990s	A USIJI approved project exists between the Edison Electric Institute's International Utility Efficiency Partnership, the government and processors to recycle wood waste to produce energy while cutting carbon emissions
Russia	1995, 1996	Two USIJI projects. The RUSAFOR Saratov Afforestation Project: 290,000 tonnes carbon, in 900 ha, over 60 years and cost over US$130,000. Vologoda project: 878,000 tonnes carbon, in 2000 ha, over 60 years for US$1.33 million
Mexico	since 1997	Two USIJI projects approved. The Scolel Te, sustainable land management and carbon sequestration project in Chiapas aims to develop 'proto-carbon credits' for sale. A second project in Oaxaca aims to reforest and improve forest management in 50,000 ha over 30 years for US$4,961,626
Bolivia	1996	USIJI approved project to extend Noel Kempff Mercado National Park; money transfer for carbon equivalent to US$ 14.90/ha versus $1/ha min applied to timber concessions
Bio-prospecting		
India	planned	Considering a new Biodiversity Law that will provide framework for bio-prospecting contracts.
Costa Rica	1989	INBio established to sell bio-prospecting rights in forests and has since signed several contracts with private pharmaceutical companies
PNG	1990s	Pharmaceutical companies forming contracts with landowners
Bolivia	1996	Legislation introducing option for issuance of bio-prospecting concessions