National and International Policies to Control Illegal Forest Activities

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Table A2.1 Producer country: causes of illegal forest activities and policy options 57
The purpose of this study is to critically examine the range of national and international policy options available to reduce illegal forest activities. Illegal forest activities include a broad array of legal violations that range from violating ownership and use rights to engaging in corrupt relationships. They also may span activities at all stages of the forest production chain, from the acquisition of authorisations, to planning, to harvesting and transport of raw material and finished products, to financial management.

Illegal forest activities pose a significant threat to the sustainability of forest ecosystems, result in losses of government revenues, foster a vicious cycle of bad governance, and may contribute to increased poverty and social conflict. As such, they have received considerable attention from the international community, particularly in recent years.

Yet, significant gaps still exist both in the identification and evaluation of policy responses and in linking such responses to critical development priorities such as improved governance, improved livelihoods for the rural poor, environmental protection, sustainable forest management (SFM), and economic development. As such, the current debate on illegal forest activities has yet to recognise fully the broader implications of some options for such priorities.

In this study we provide a framework for addressing these issues and to narrow these gaps. We present an overview of the symptomatic manifestations of illegal forest activities: Forest products generated in violation of government policies represent a significant fraction of total production and may amount to US$10 billion to US$15 billion in lost government revenues.

We then provide a simple framework for understanding the problem. In this framework we lay out that profit and income maximisation are key aspects of the economic behaviour of firms and individuals. Illegal behaviour is more likely when the benefits derived from violating the law (e.g., timber mining, tax evasion, harvesting protected species or in unauthorised areas) exceed the costs of noncompliance.

The policy options listed in the report consist in large part of measures that reduce the economic rewards of illegal behaviour, by increasing either the rewards of compliance or the costs of noncompliance.

We identify potential underlying market, governance, and institutional causes of illegal forest activities as well as capacity and technical factors. We do so by first relying on the lessons learned from efforts to promote SFM over the past two decades. There are several reasons for doing so, particularly the fact that efforts to promote SFM and to reduce illegal forest activities are motivated by similar goals and challenges. The lessons learned from SFM experiences are then integrated with knowledge and insights gained from recent developments in our understanding of good forest governance to develop an array of possible policy responses by
producer and consumer countries.

An analysis of existing trade and environmental agreements, their lessons, and potential relevance to addressing illegal forest activities is presented.

An analysis of trade data shows that Asian producer countries export mainly to other Asian countries, whereas African countries export mostly to Europe. Therefore, trade measures adopted by Asian consumer countries are most likely to have an impact on illegal trade and illegal logging in Asia (with the exception of China, which imports from Africa as well). Trade measures implemented by European countries are most likely to be effective on illegal trade and illegal logging in Africa.

The report concludes by presenting principles, criteria, and initial sequencing steps to aid the development of appropriate policy options to reduce illegal forest activities.

**Principles**

- Reform efforts should proceed with input from all the important stakeholders.
- Property rights of forests must be clarified and resolved.
- Streamline the policy and regulatory framework.
- Divest certain functions to the private sector, nongovernmental organisations, civil society, and local governments.
- Promote integration and coordination with other sectors and with other players, both national and international.

**Criteria**

- Clarity
- Economic efficiency
- Effectiveness
- Equity
- Acceptability
- Motivating
- Institutional parsimony
- Exploits synergies
- Consistency with own priorities.

**Initial sequencing steps**

- Pick the reformers.
- Comprehensively diagnose the problem.
- Consider all available options creatively and match response to underlying cause.
- Pursue no-regrets policies first.

The most significant actions to address illegal forest activities will need to be taken by producer countries, as they can directly affect illegal forest activities, and particularly illegal logging. Also, it is only in producer countries that appropriate reforms can be undertaken to ensure that rural communities are not negatively affected but rather benefit from initiatives aimed at improving the management of forests.

Consumer countries can, of course, also play significant roles that range from supporting further reform processes, to providing technical assistance, to exchanging data and other economic intelligence, to introducing legislation that limits the import of illegal forest products and facilitates trade in legal forest products.

Yet, there remain aspects of illegal forest activities that are still unclear. For example, which violations, among the numerous types, are the most serious? Which ones are causing the most economic losses, the most environmental losses, the most governance and social losses? Which ones should be tackled first? And how? Unfortunately, rigorous inquiries into these questions are still lacking.
Illegal forest activities pose a significant threat to the sustainability of forest ecosystems, result in losses of government revenues, foster a vicious cycle of bad governance, and may contribute to increased poverty and social conflict. As such, they have received considerable attention from the international community, particularly in recent years. Yet, significant gaps still exist both in the identification and evaluation of policy responses and in linking such responses to critical development priorities such as improved governance, improved livelihoods for the rural poor, environmental protection, sustainable forest management (SFM), and economic development. As such, the current debate on illegal forest activities has yet to recognise fully the broader implications of some options for such priorities.

The purpose of this study is to critically examine the range of national and international policy options available to reduce illegal forest activities. It does so by (i) reviewing what is known regarding the nature and extent of the problem; (ii) identifying possible policy responses applicable by producer countries, by consumer countries, or via international initiatives; and (iii) suggesting possible principles and criteria for further evaluation and selection of policy options.

The report is structured as follows. Section 2 considers the definition of illegal forest practices, their global and national extent, and their potential impacts on a variety of development indicators. Section 3 then provides a simple framework based on economic rationality for understanding the problem.

In section 4, we review the lessons learned from the efforts made to promote SFM. Our reasons for looking at the SFM experience were several. First, SFM has almost everywhere been promoted through policy reform (Poore and Chiew 2000) and, consequently, violations of government-defined SFM regulations are illegal. Second, efforts to promote SFM and to reduce illegal logging are motivated by similar goals. For example, both attempt to harmonise sustainable development and environmental protection goals. In fact, measures to reduce forest crime are seen as critical instruments to improve forest management (FAO 2001). Third, measures to advance SFM and reduce illegal logging also face the same complex challenges that range from poor governance to institutional weaknesses to adverse economic incentives. Fourth, while illegal activities have begun to receive significant attention from international donor agencies only in the last few years, SFM has been funded substantially for almost 20 years. Rice et al. (2001), for example, estimated that during the mid-1990s approximately three-quarters of a billion\(^1\) dollars have been spent annually on international forestry assistance in the tropics, a large portion of which was spent directly or indirectly to support SFM (Shepherd et al. 1998). Much can be learned from the experience and research that has supported the advancement of SFM. Finally, initiatives to promote SFM and initiatives to

\(^{1}\) Billion means 1,000 million.
reduce illegal forest activities both operate in a world characterised by a multiplicity of actors with different motivations, knowledge, resources, vulnerabilities, and alternatives.

We then turn to the analysis of the causes of illegal forest activities and the related policies options for producer and consumer countries. We do so in section 5. A review of international agreements, lessons for addressing illegal forest activities, and recommendations follows. Section 7 then provides an analysis of trade data aimed at assessing the potential effectiveness of trade measures implemented by consumer countries. The report concludes by outlining principles and criteria to aid the development of appropriate policy options to reduce illegal forest activities.
2.1. Defining illegal forest activities

Illegal forest activities are defined here to include all illegal acts that relate to forest ecosystems, forest-related industries, and timber and non-timber forest products. They range from acts related to the establishment of rights to the land to corrupt activities for acquisition of forest concessions and activities at all stages of forest management and the forest goods production chain, from the planning stages, to harvesting and transport of raw material and finished products, to financial management.

A classification of illegal forest practices, based partly on Contreras-Hermosilla (2001), is presented in Table 1. It stresses the different stages of allocation and acquisition of forest resources, and forest management and timber processing and trade, with an emphasis on the various types of violations.

Violations of indigenous people’s rights, public trust, and public or private ownership rights may involve acts against constitutional, civil, criminal, or administrative law. Violations of forest management regulations and other contractual agreements in either public or private forestlands are acts against forest legislation; this is the category that includes most of the acts that may be most appropriately referred to as ‘illegal logging’. Violations of transport and trade regulations include acts that violate forest legislation, but they may be related to legally or illegally harvested forest products. This category is referred to as illegal forest trade. Timber processing activities may be regulated by industry- and trade-related legislation, as well as forest legislation. In this category, a violation directly linked to illegal logging is the use of illegally harvested logs. Violation of financial, accounting, and tax regulations may involve acts related to legally and/or illegally harvested and traded timber. This category is referred to in the report as illegal financial activities.

The various illegal activities may be linked to each other in different ways, but two of the most significant links are worthwhile stressing here. Violations of indigenous people’s rights and of public trust may result in the establishment of forest operations that have a legal appearance. Timber extracted by these operations may seem legal to unaware traders and consumers, unless schemes aimed at certifying legality (see later in the report) also assess that due process is followed in the allocation of land to forest activities and in the allocation of forest concessions.

All violations can occur as the result, or at the prompting, of corrupt public officials. Corruption can affect the allocation of forestland, monitoring of forest operations, and law enforcement. Therefore, it can be one of the most significant factors contributing to illegal forest activities.

The occurrence of a violation does not necessarily imply that policy options should necessarily focus on its prevention and repression. It is plausible that in some instances a
revision of the legislation may be warranted. An example is a situation in which the legislation favours large-scale industrial harvesting operations and, as a result, small-scale rural operations find themselves operating illegally.

Table 1. Illegal forest practices

| Violations of indigenous people's rights | • Illegal appropriation of indigenous land |
| Violations of public trust | • Forestlands allocated unlawfully to other uses |
| | • Issuing and implementing regulations conflicting with other/higher regulations to legalise illegal timber products and activities |
| | • Issuing logging concessions, permits, and authorisations in exchange for bribes and other private economic and political benefits |
| | • Using bribes, threats, and violence to avoid prosecution/penalties or to obtain complacency |
| | • Using funds from illegal forest activities for political purposes |
| Violations of public or private ownership rights | • Illegal expropriation of private or community forests |
| | • Illegal occupation of public forestlands, including slash-and-burn agriculture |
| | • Illegal harvest on public lands (outside concession areas) |
| | • Illegal harvest on indigenous lands |
| Violations of forest management regulations and other contractual agreements in either public or private forestlands | • Logging without authorisation and/or required plans |
| | • Logging in excess of permitted cut |
| | • Logging unauthorised volumes, sizes, species (including protected ones) |
| | • Logging in prohibited areas such as steep slopes, riverbanks, and water catchments |
| | • Girdling or ring-barking to kill trees so they can be legally logged |
| | • Logging in protected areas |
| | • Arson to force conversion to other land use |
| Violations of transport and trade regulations | • Transporting logs without authorisation |
| | • Illegal transport of illegally harvested timber |
| | • Smuggling timber |
| | • Exporting and importing tree species banned under international law, such as the Convention on the International Trade in Endangered Species of Flora and Fauna |
| | • Exporting and importing timber in contravention of national bans |
| Violations of timber processing regulations | • Operating without a processing licence |
| | • Expanding capacity without authorisation |
| | • Using illegally obtained wood in industrial processing |
| | • Operating in violation of environmental, social, and labour laws |
| Violations of financial, accounting, and tax regulations | • Untrue declarations of volumes, species, values |
| | • Declaring inflated prices for goods and services purchased from related companies, including transfer pricing* |
| | • Evasion and avoidance of taxes |
| | • Money-laundering through forest activities or from illegal forest activities |

* When one part of a multinational organisation in one country transfers (that is, sells) goods, services or know-how to another part in another country, the price charged for these goods or services is called ‘transfer price’. It may be a purely arbitrary figure, that is, it may be unrelated to costs incurred, to operations carried out, and to added value. By manipulating the transfer price, multinational organisations can reduce or even cancel out their total tax burden. Transfer pricing is not always illegal.

2.2. Potential impacts of illegal forest activities

The debate on illegal forest activities has focused almost completely on perceived negative aspects and impacts (see, for example, Contreras-Hermosilla 2001), as they may:
• contribute to deforestation and loss of biological diversity;
• result in government revenue losses of billions of dollars;
• foster a vicious cycle of bad governance, i.e., corrupt individuals who gain power through illegal revenues may then support bad governance to maintain revenues and acquire more power;
• contribute directly to increased poverty when people lose their resources, and indirectly as
Table 2. Illegal forest practices

<table>
<thead>
<tr>
<th>Type of violation</th>
<th>Environmental domain</th>
<th>Financial domain</th>
<th>Economic domain</th>
<th>Social domain</th>
<th>Governance domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violations of indigenous rights</td>
<td>Loss*: reduction in indigenous people’s revenues</td>
<td>Indirect through the combined effects of financial loss and gain</td>
<td>Loss: indigenous people may lose cultural identity, indigenous resource management institutions weakened</td>
<td>Gain: parties taking over rights gain from increased resource availability</td>
<td></td>
</tr>
<tr>
<td>Violations of public trust</td>
<td>Indirect</td>
<td>Loss: poor people have to bribe to access resources</td>
<td>Loss: loss of revenue impacts on economy; distortions through rent-seeking; competitiveness of industry affected; small companies and individuals may be marginalised; perverse incentives</td>
<td>Loss: further marginalisation of those without access to resources and little political clout</td>
<td>Loss: erosion of rule of law; weakened environmental governance</td>
</tr>
<tr>
<td>Violation of public or private ownership rights</td>
<td>Loss: biodiversity reduced and alteration of watershed and ecosystem functions, carbon emissions</td>
<td>Loss: loss of government revenues, loss of company profit, individual financial loss</td>
<td>Loss: similar as above</td>
<td>Loss: impacts on livelihoods from negative environmental change and through reduced government spending; social conflict; further marginalisation and impoverishment of vulnerable communities that suffer violations</td>
<td>Loss: erosion of basic rights and of rule of law; corrupt politicians increase their power and may in turn weaken general and environmental governance</td>
</tr>
</tbody>
</table>

Gain: increased logging activity benefits economy from increased employment, spending, exports
Gain: allows survival strategy to some marginalised groups. Alleviates social pressures from the poor when government lacks capacity or intention to provide access to resources and services
**Table 2. Illegal forest practices (continued)**

<table>
<thead>
<tr>
<th>Type of violation</th>
<th>Environmental domain</th>
<th>Financial domain</th>
<th>Economic domain</th>
<th>Social domain</th>
<th>Governance domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violations of forest regulations</td>
<td>Loss: direct from minor to significant, depending upon the type of violation. May affect future growth, biodiversity, provision of environmental services</td>
<td>Loss: forest owner and government lose revenue</td>
<td>Loss: direct loss of environmental values and of government revenues (e.g., if logging outside authorised areas while loggers pay only area taxes)</td>
<td>May impact livelihoods with negative environmental change, social conflict, and through reduced government income</td>
<td>Loss: same as above</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gain: loggers increase revenues or reduce costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violations of transport and trade regulations</td>
<td>Loss: indirect through increased harvesting of forest</td>
<td>Loss: tax revenue</td>
<td>Loss: loss of revenue impacts on economy; distortions through rent-seeking; competitiveness of industry affected; small companies and individuals may be marginalised; perverse incentives</td>
<td></td>
<td>Loss: same as above</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gain: companies benefit from tax evasion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violations of financial regulations</td>
<td>Loss: indirect through increased harvesting of forest</td>
<td>Loss: tax revenue</td>
<td>Loss: loss of revenue impacts on economy; distortions through rent-seeking; competitiveness of industry affected; perverse incentives</td>
<td></td>
<td>Loss: same as above</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gain: companies benefit from tax evasion and cheap credit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violations of timber processing regulations</td>
<td>Loss: indirect through increased harvesting of forest</td>
<td>Loss: tax revenue</td>
<td>Loss: loss of revenue impacts on economy; distortions through rent-seeking; competitiveness of industry affected; perverse incentives</td>
<td></td>
<td>Loss: same as above</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gain: companies benefit from increased processing capacity, cheap timber</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The terms ‘loss’ and ‘gain’ are used in neutral terms to highlight who and what may be affected negatively or positively by the various violations.
National and International Policies to Control Illegal Forest Activities

a result of a reduction in government revenues, which could in turn be made available for poverty reduction programmes;
• contribute to funding national and regional conflicts, thereby exacerbating them;
• distort forest product markets, thus reducing incentives for SFM.

It needs to be recognised, however, that illegal forest activities have a positive side for some of the stakeholders, as follows:
• Establishment of alternative land uses on forestland may provide local benefits to those involved.
• The national or local government may receive higher revenues as a result of illegal or legalised land conversion and increased timber production.
• The military and police forces derive income from illegal forest activities and may be more willing to support the government.
• Many people, including the poor and unemployed, may derive income from illegal forest activities.
• Lower timber prices increase the competitiveness of national industries.
• Consumers may benefit as a result of lower prices.

A range of environmental, financial, economic, social, and governance impacts, and distribution among different stakeholders, is presented in Table 2. Recognising this range of potential impacts is important in order to clarify the nature of the problem, to develop public policies aimed at addressing the problem, and assessing the possible direct and indirect impacts on the policy options.

The possible impacts, gains, and losses presented here are only some of the many possible combinations. Only limited work has been carried out in understanding the complex relationships among the different violations, the impacts on the various domains, and the impacts on the various stakeholders. Therefore, the information presented here can only be speculative and indicates possible areas for further work.

2.3. Global and national situations

This summary of the global and national situations is not intended to be exhaustive but to highlight the size of the problem by focusing on the widespread occurrence in different geographic areas.

Given its nature, accurate estimates of illegal forest activities are difficult to obtain. Globally, illegal forest activities are said to result in annual government revenue losses in the range of US$10 billion to US$15 billion (World Bank 2002). Illegal trade irregularities were estimated to be 15% of the total trade in the mid-1990s (Brack and Hayman 2001).

The data on illegal harvest (Table 3) are an approximation of the size of violations of forest regulations and some acts included in violations of property rights in Table 1. They clearly show that some countries may have a significant problem. However, the fact that illegal harvest is high does not identify the type of the problem. A country that has a large illegal harvest sold on the local market faces a completely different problem compared to a country whose timber is harvested illegally to supply international markets.

Data on revenue losses from illegal timber trade are available particularly in relation to losses arising from export tax evasion and timber smuggling (SGS Trade Assurance Services draft). These data represent a strictly limited part of the picture. As noted in the previous section, there is a range of financial and economic impacts that arise from illegal forest activities, and they are almost completely unknown. For instance, it is possible that the economic losses from illegal forest activities are significantly higher than the estimated US$10 billion to US$15 billion presented above, if the environmental costs of illegal logging were included. On the other hand, it is also possible that for some countries the financial losses
arising from illegal logging activities are more than matched (at least in the short term) by the benefits generated by increased economic activity resulting from the illegal activities, e.g., increased employment and consumer spending.

This possibility, of course, does not imply that illegal activities should be promoted if they result in net economic benefits. It means that by focusing only on losses, the data available are only a partial indicator of the existence of a problem, but they are not sufficient to support the development of balanced policy options. *Data on the benefits generated by illegal forest activities and their distribution are needed to identify the most appropriate policy options and their likely impacts.*

### Table 3. Estimates of illegal harvest

<table>
<thead>
<tr>
<th>Country</th>
<th>Volume of illegality</th>
<th>Date</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Latin America</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>80% of 20m–25m m³ in Amazon</td>
<td>1998</td>
<td>AFP 1998</td>
</tr>
<tr>
<td></td>
<td>80% of harvest in Amazon</td>
<td>Late 1990s</td>
<td>Viana 1998</td>
</tr>
<tr>
<td>Bolivia</td>
<td>80%–90% of total forest clearing</td>
<td>Late 1990s</td>
<td>Contreras-Hermosilla 2001</td>
</tr>
<tr>
<td><strong>Africa</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benin</td>
<td>80%–90% of harvest</td>
<td>2000</td>
<td>SGS Trade Assurance Services (draft)</td>
</tr>
<tr>
<td>Cameroon</td>
<td>50% production indeterminate</td>
<td>1994</td>
<td>Toornstra et al. 1994</td>
</tr>
<tr>
<td></td>
<td>50% of harvest</td>
<td>2000–2001</td>
<td>SGS Trade Assurance Services (draft)</td>
</tr>
<tr>
<td></td>
<td>1/3 of harvest for local market</td>
<td></td>
<td>Eba’a Atyi 1998</td>
</tr>
<tr>
<td>Ghana</td>
<td>2.6m m³, more than twice legal harvest</td>
<td>1999</td>
<td>Birikorang 2001</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Perhaps 50% of legal harvest</td>
<td>2000–2001</td>
<td>SGS Trade Assurance Services (draft)</td>
</tr>
<tr>
<td>Tanzania</td>
<td>130,000–500,000 ha affected</td>
<td>2000</td>
<td>Panafican News Agency Daily Newswire 2000</td>
</tr>
<tr>
<td><strong>Asia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambodia</td>
<td>4.3m m³, almost 10 times legal harvest</td>
<td>1997</td>
<td>Global Witness 1999</td>
</tr>
<tr>
<td>Indonesia</td>
<td>64.6m m³, three times official log production</td>
<td>1998</td>
<td>Palmer 2000</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1/3 of harvest</td>
<td>1995</td>
<td>Dudley et al. 1995</td>
</tr>
<tr>
<td>Myanmar</td>
<td>80% of harvest</td>
<td></td>
<td>Brunner et al. 1998</td>
</tr>
<tr>
<td>Philippines</td>
<td>9m m³</td>
<td>1970s–80s</td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td>20% of timber harvest violates law</td>
<td></td>
<td>Greenpeace 2000</td>
</tr>
<tr>
<td>Primorsky-Khabarovsk region (Far East)</td>
<td>50% of harvest</td>
<td></td>
<td>Newell and Lebedev 2000</td>
</tr>
<tr>
<td>Siberia</td>
<td>20% of harvest</td>
<td>1998</td>
<td>Christian Science Monitor 1998</td>
</tr>
</tbody>
</table>
Illegal logging and economic rationality

Profit and income maximisation are key aspects of the economic behaviour of firms. Illegal behaviour is more likely to occur when the benefits derived from violating the law (e.g., timber mining, tax evasion, harvesting protected species, harvesting in unauthorised areas) exceed the costs of noncompliance. In large part, the policy options that are listed in the rest of this report consist of measures that reduce the economic rewards of illegal behaviour, either by increasing the rewards of compliance or by increasing the costs of noncompliance.

Lack of transparency, accountability, and resources proportional to the responsibilities can lead individuals, companies, and public officials to behave in the pursuit of private economic benefit, political gain, or to apply the law in arbitrary ways.

SFM is defined by trends occurring at both national and ownership levels. Economic theory has been used extensively to understand and explain both broad changes in land use (e.g., deforestation at the national level) and harvesting decisions within a single ownership. We consider the economic aspects of deforestation at the national level below, while issues relating to the single ownership level are addressed in the following section.

3.1. Deforestation at the national level

Past efforts aimed at promoting SFM have done little to curb deforestation. It is useful at this point to introduce the economic fundamentals of deforestation.

The rent generated by land is the financial return from the land obtained from the sale of products (whether timber, crops, or something else) minus the costs of inputs (machinery, labour, etc.) needed to generate those products. Land rent is economic value generated by the land as a factor of production in the long run.

Let us consider the land rent from two alternative land uses: forest and agriculture. In either land use lower-quality land generates lower rents. The rent from agriculture is higher than the forest one on better land (e.g., lowlands with rich soils) but lower on lower-quality land (e.g., uplands, broken topography, soils unsuitable for agriculture). Agriculture is economically superior to forestry on some, but not all, land. This relationship between land rents of alternative land uses can help predict how much deforestation will occur once forestland comes to be used for economic purposes.

Institutional and market changes can result in changes in rents. For example, if the landowner could capture the value of the environmental services generated by the forest, the rent generated would increase without any changes in the quality of the land. Conversely, if the costs of agricultural labour or of other inputs rise, the rent from agricultural use declines, thus making forest use superior to land use on some land at the margin. This digression is...

2 This conceptual model has been used extensively to understand the various factors that drive forest conversion to agricultural and other uses. Kaimowitz and Angelsen (1998) produced a comprehensive review of these studies.
made here to make the following points:

- The presence of deforestation is to be expected at certain stages of economic development, particularly where agricultural uses are economically superior to forest uses.
- Ignoring non-timber values and the off-site environmental damages caused by agriculture (e.g., water pollution) will lead to excessive forest conversion. Vincent et al. (1997) suggest that the recent deceleration of deforestation in Malaysia may be interpreted in terms of the current land allocation approaching the point where the rent from agricultural land use equals the rent from forest land use, while, at the same time, economic development has brought broader recognition of environmental services and increased the opportunity cost of agricultural labour.
- Evaluation of progress towards SFM and the prevention and reduction of illegal logging activities should be prioritised for lands on which forest use is economically superior to agricultural use. Attempting to prevent forest conversion where, accounting for non-timber benefits and the externalities of agricultural production, agricultural use is superior would go against national objectives of economic development.
4.1. What is SFM?
Since the early 1980s, there has been considerable concern that deforestation and forest degradation were occurring at huge costs to society, measured in lost economic rents, inefficient allocation of resources, mining and degradation of renewable resources such as soil and forests, disruption of watershed services, social distress and conflict, massive loss of biodiversity, and emission of greenhouse gases. A series of ‘failures’ have then been identified as the root causes for these problems: market failures, i.e., failing to use the corrective power of markets for allocating resources among uses and across time; and policy failures, i.e., government intervention aiming at mitigating market failures through taxation, regulation, public incentives, public projects, macroeconomic management, and institutional reform (Panayotou 1993).

Given the right conditions (the correction and/or mitigation of the above failures), it was expected that SFM would have emerged as a better way to manage forest resources (Panayotou and Ashton 1992). Even as alternatives were identified and pursued to ensure the continued supply of many forest goods and services (e.g., forest protection), SFM was early on recognised as an important sustainable development strategy considering that many forest-rich tropical countries will continue to promote harvesting in significant portions of their forest estate and that much provision of non-timber goods and services occurs in ecosystems under human use (World Bank 2002).

Since its inception, SFM, by introducing the use of science in the planning and execution of harvesting operations, sought to reduce the negative impacts of timber harvesting on other forest resources and services and increase yields of desired products and services from a given area of forest.

4.1.1. Definition
A considerable difficulty in promoting the widespread use of SFM has been the lack of an agreed-upon definition of what it means. Literally hundreds of definitions of SFM exist. The great majority of these definitions include the intent of ensuring a constant or increasing flow

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The concept of sustainability was first placed on the international agenda by the Brundtland report in 1987 (World Commission on Environment and Development 1987), which defined sustainable development as ‘meeting the requirements of present generations without compromising the ability of future generations to meet their own needs.’ The first global policy on sustainable forest management was adopted at the Earth Summit held in 1992 and known as the ‘Forest Principles.’ As some authors point out, however, the concept of sustainability in forestry, defined as the importance of considering the needs of future generations, has been recognized for at least 200 years. For example, the German forester Hartig stated as early as 1804 that the goal of forestry should be to ‘utilize [forest stands] to the greatest possible extent, but still in a way that future generations will have at least as much benefit as the living generation’.
of wood, but most definitions also include the goal of continued provision of other goods and services such as non-timber forest products and ecological and watershed services.

The international community is still struggling to find a unanimous definition of which goods and services should be considered and ‘sustained’, how they should be measured, how inevitable trade-offs among outputs and among the beneficiaries of those outputs should be dealt with, and, given the existence of such trade-offs, what criteria should be used in evaluating the desirability of a particular solution or ‘compromise’.

With the 1992 Earth Summit, the concept of sustainable forest management quickly gained considerable attention. Since it did so without being technically well understood and without agreed-upon guidelines with which to document progress towards SFM, it is not surprising that the first major set of initiatives to promote SFM have been the development of Criteria and Indicators for Sustainable Forest Management (C&I). By 1997, over 100 countries had committed to one of the various ‘processes’ that has been developed in various regions of the world. C&I are tools for assessing trends in forest conditions and forest management. They attempt to provide a common framework for describing, monitoring and evaluating progress towards SFM. As such, C&I have basically become the implicit definition of what SFM is, both conceptually and on the ground (Wijewardana 1998).

SFM is considered here as a set of practices that are undertaken within the legal and regulatory framework and that pursue a variety of goals, including the sustained yield of forest goods and services, positive socioeconomic impacts, and maintenance of biodiversity (Higman et al. 1999; see also Appendix I). Of particular relevance to this report is the criterion that specifies ‘enabling conditions for sustainable forest management’, which is concerned with the general legal, economic, and institutional framework without which actions included under the other criteria will not succeed.

4.2. Initiatives to promote SFM: a brief overview

This section aims at putting into context what can be learned from SFM in terms of its applicability to illegal logging. It serves as a brief background for the inquiry over what aspects of SFM can be generalised to inform initiatives to reduce illegal logging, inquiry that will be explored in the next section.

Initiatives to promote SFM have been broken down into:

- producer country measures (e.g., instruments that affect supply such as policies and

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4 The International Timber Trade Organization introduced the concept and terminology associated with C&I in 1992 (ITTO 1992). Since then seven other ‘processes’ have been developed in different parts of the world. In June 1994, 38 European countries adopted the Helsinki Process. A few months later 12 non-European temperate countries established the Montreal Process. Following ITTO’s pioneering work and the comprehensive efforts of the Helsinki and Montreal processes, there was a proliferation in C&I initiatives. In 1995 eight countries in the Amazonian Cooperation Treaty began to formulate the Tarapoto Proposal, identifying C&I for the Amazon forest and since then, 27 sub-Saharan countries have been developing C&I for Dry Zone Africa, while similar work has been undertaken in the Near East and Central American regions. The latest addition is the C&I of the African Timber Organisation.

5 ‘Criteria’ define the essential components of SFM. These include vital forest functions, such as biological diversity and forest health, multiple socio-economic benefits of forests, such as wood production and cultural values, and, in most cases, the legal and institutional frameworks needed to facilitate SFM. Associated ‘indicators’ serve to define what a criterion is and to measure it. For instance, ecosystem and species diversity are indicators of biological diversity. Measured over time, indicators can demonstrate trends towards or away from SFM, giving policy-makers the necessary information to implement corrective action.

6 A study by the International Institute for Environmental Development (Nussbaum et al. 1996) examined the degree of consensus among SFM definitions. The authors concluded that there was more agreement on silvicultural aspects than on other forest goods and services, such as biodiversity conservation.
industry regulations, novel enforcement strategies and incentives); • consumer country measures (e.g., instruments that affect demand); and • international initiatives.

4.2.1. Producer country measures
The promotion of SFM in tropical countries has encountered many difficulties, including poor understanding of what SFM is, market and policy failures (such as insecure tenure), limited law enforcement capability (limited capacity to police extended areas), corruption, and large rent differential between SFM and conventional logging and between illegal and legal logging. Illegal logging and corruption have usually been identified as major obstacles to advancing SFM. Initiatives to promote SFM in producer countries have attempted to address this vast array of obstacles and difficulties.

Institutional, legislative and regulatory reform
The pursuit of SFM and the reduction of illegality and corruption have often been advanced, or at least attempted, through policy and regulatory reforms that affected in various ways resource access, taxation, income distribution, and forest management. Furthermore, they often involved a radical reform of the regulatory agency, rarely with success (Poore and Chiew 2000).

A recent review commissioned by the International Institute for Environmental Development (ITTO) (Poore and Chiew 2000) noted that the most striking advances towards SFM have been in the field of policy and legislative reform. This legislative reform has often been followed by governance reform that included restructuring of ministries and government departments. These efforts have often included the devolution of responsibilities for implementation to local authorities. Clarification of the extent and boundaries of the permanent forest estate has also been accomplished in several countries.

Several tropical countries have undergone attempts to introduce such reforms, including Brazil, Bolivia, Cameroon, Indonesia, Malaysia, Peru, and the Philippines, to name just a few. With few exceptions, the international donor community played a massive role in promoting such reforms (Seymour and Dubash 2000). These reforms have attempted to correct widespread market and policy failures (Repetto and Gillis 1988) as well as to correct major institutional and enforcement deficiencies.

The process of allocating forest resources was modified. While traditionally the allocation of forest concessions occurred administratively and with a great deal of personal discretion, for the promotion of SFM various countries introduced legislation mandating the allocation of forest concessions based on a transparent and competitive bidding process (e.g., Bolivia, Cameroon, Peru). This change introduced transparency, clearer allocation rules, and verifiable technical and financial obligations. Transparency and reduced discretion helped, in turn, to reduce corruption, to attract more qualified forest enterprises, and to increase government revenues.

Taxation was also the subject of considerable attention since countless policy experts and reports, beginning with the work of Malcolm Gillis in the early 1980s, pointed to insufficient rent capture as a root cause of forests’ inefficient use and waste. As a result, many countries increased their fees (e.g., Guyana, Suriname), while others (e.g., Brazil, Bolivia, Cameroon Malaysia) substituted or complemented existing volume- or tree-based taxes with area-based taxes.

Shifts to area-based taxes in particular eliminated many discretionary powers of forest officers in charge of controlling the implementation of concession contracts. This reformed taxation regime, coupled with new allocation rules, reduced corruption (in some countries more than in others) and generally increased government revenues. It was also hoped that
increased rent capture by the state would have promoted more efficient logging and wood processing. Little evidence exists, however, to confirm whether this outcome was achieved or not.

In countries like Bolivia, where volume-based taxes were eliminated, the new fiscal regime also contributed to reducing the total amount of acreage under concession contracts since holding concessions for purely speculative purposes or to harvest highly selectively became a costly proposition. Because of this reduced acreage, lesser-known species began to be utilised more widely (although other factors contributed to this development as well, such as increased scarcity of high-value species). Where this concentration happened, the area in need of monitoring became more commensurate with the capacity of the forest agency to carry out its duties.

Perhaps the most-needed sets of reforms, however, were those clarifying the ownership and use rights of indigenous people and rural communities. Along this dimension, progress has been made, but it has been slow. Governments have been either incapable or reluctant to re-distribute tenure rights that had been nationalised around the middle of the twentieth century. The process of clarifying ownership rights has been hampered not only by the opposition of powerful vested interests (see, e.g., Peluso 1992) but also by agricultural reforms that, in many tropical countries, aimed at redistributing land. These reforms left, as collateral damage, much agricultural and forestland that currently has multiple, simultaneous ownership, particularly in Latin America.

Many reform processes also introduced the possibility of communities and indigenous groups having access to public resources legally. This development occurred in Bolivia, Cameroon, and India, for example.

Such reforms have also often included some form of revenue redistribution. In Bolivia and Cameroon, for example, part of the revenues collected through taxation is distributed at the local level. This move has in part helped to finance decentralisation initiatives but also to sensitise local communities to the value of rationally managing forest resources.

**Enforcement and capacity building**

Reform and strengthening of forest administration often accompanied legislative and regulatory reform. In Bolivia for example, a new enforcement agency, the Forest Superintendency was created to replace a notoriously inefficient and corrupt Forest Development Center. The new agency was designed to be fairly insulated from political pressures, and the president selects the superintendent from a list of three names compiled by Congress. The appointment is for six years, longer than the five-year presidential term. The new agency has a highly professional staff and is fiscally independent since it is financed with 30% of the area tax collections. It also has a clearer mandate.

Many reforms also created provisions for the privatization of forest law enforcement. In Bolivia, firms or communities that choose to certify their operations are absolved from the mandated forest audit every five years. In Cameroon, an independent international organisation verifies all exports. This reliance on the private sector and on nongovernmental organisations (NGO) for many law enforcement activities appears to have greatly improved enforcement and compliance, reduced the public financial and personnel costs of enforcement, and increased credibility.

For several years now there has been a lot of talk about introducing performance-based incentives for compliance such as performance bonds. Notwithstanding their promise, their use so far has been somewhat limited.

### 4.2.2. Consumer country measures

Consumer countries have directed significant donor assistance towards financing research,
technical assistance, education, policy, and regulatory and institutional reforms conducive to SFM. As of the mid-1990s, Rice et al. (2001) estimated, European countries allocated US$500 million annually to forest-related investments in tropical countries.

Some countries, such as Austria, have attempted to introduce changes in their procurement policies that reflected a discrimination in favour of sustainably produced forest products. The Austrian initiative has since been judged to be in violation of General Agreement on Tariffs and Trade (GATT) rules and was scrapped. Other nongovernment initiatives, however, have been more successful. In the mid-1990s California state authorities decided to purchase only timber with Forest Stewardship Council (FSC) certification, a stance judged not in violation of GATT and World Trade Organisation (WTO) rules (because it did not come from the U.S. federal government) (Virtanen and Palmujoki 2002).

The international donor community has also made substantial efforts in funding research to understand tropical forests and to design better ways to manage them. These efforts have helped to breed a new form of professionalism among forest operators in producer countries.

4.2.3. International initiatives and agreements

**Clarification of common goals and definitions**

An important set of international initiatives has aimed at establishing some form of consensus on forests and their use. Among them, a critical step to promote SFM has been the development of C&I. A call for the development of C&I was already present in the Forest Principles and Chapter 11 of Agenda 21. These Forest Principles, approved by the United Nations Conference on Environment and Development (UNCED) in 1992, recognised the principles of national sovereignty (nations should utilise their forests in accordance to their national objectives and priorities), public participation, and total economic valuation. They formed the launching pad for a series of international initiatives to define C&I.

**Strengthening of producer country initiatives**

Organisations such as ITTO have been instrumental in promoting policy and legal reform, in helping producer countries incorporate SFM principles in their administrative structures, and in national and regional planning efforts. The United Nations Forum on Forests (UNFF) has helped to mobilise resources, provided a forum for continued policy development and dialogue on SFM, enhanced international cooperation and coordination, and assisted with monitoring and reporting progress (with discouraging results so far).

**International agreements**

SFM is considered in a number of multilateral environmental agreements (MEA) such as the Convention on the International Trade in Endangered Species of Flora and Fauna (CITES) (described later in the report) and the three main conventions that resulted from the Earth Summit of 1992: the Convention to Combat Desertification (CCD), the Convention on Biological Diversity (CBD), and the Framework Convention on Climate Change (FCCC).

An important idea behind the UNCED approval was that if countries could benefit economically from better forest use, then recognition and capture of such values might be more successful in promoting SFM than regulation alone. The problem with existing forest use was that national and local actors were not compensated for the global services they provide. The three conventions, however, reflect different compromises between the concerns of national sovereignty, socio-economic development, environmental conservation, and the principles of the market economy (Virtanen and Palmujoki 2002).

The CCD pays particular attention to socio-economic issues, public participation, and the enabling of a more effective policy and institutional environment. The focus of the CCD is on national operational capacity and defines the preparation and implementation
of national action programmes as a central strategic element. Developed countries’ role is in financing such programmes and in facilitating access to technology.

The CBD has as stated objectives the conservation of biological diversity and the fair and equitable sharing of the benefits from the use of genetic resources. It seeks to channel donor resources to covering incremental costs, defined as the costs the host country incurs that are additional to expected spending because the provision of a global public good (biodiversity) is considered. In practice, this concept of incremental costs turned out to be extremely difficult to operationalise so that most biodiversity-related projects are funded through bilateral, regional, and other non-CBD channels.

The FCCC recognises that forests play a key role in mitigating climate change. The Kyoto protocol of 1997, together with Greenhouse Gas Protocol emission targets, established three main instruments for meeting them: Joint Implementation, emission trading, and the Clean Development Mechanism (CDM). The CDM explicitly acknowledges the role of developing countries and forest resources in mitigating climate change. However, progress to operationalise the CDM has been slow and it appears that forest conservation will not be included as an acceptable activity under the CDM, at least not during the first commitment period (2008–2012). It is unclear whether measures such as reforestation and improved management will be considered acceptable.

Transfer payment approaches
CCD and FCCC have conceived a variety of mechanisms to promote better forest use. The principal international financing mechanism created for the implementation of CBD and FCCC is the Global Environmental Facility (GEF), a mechanism that directs funds from industrialised nations to developing countries. It was created to provide new and additional funds to meet the incremental costs of safeguarding global public benefits such as biodiversity, climate change, international waters and ozone layer depletion. GEF currently funds projects that fall into 10 operational programmes (OP). For example, OP3 (Forest ecosystems) is the main source of GEF funding for SFM.

Initiatives to promote market-based mechanisms
Through the creation of the CDM, the FCCC set up the possibility of using a market-based mechanism (the trading of carbon offsets generated by better forest management) to partially offset emissions of greenhouse gases in industrialised countries. FCCC also gave impetus to the launching of several initiatives that, although aimed at developing a market for global environmental services like carbon, have retained some elements of a transfer payment approach such as the Prototype Carbon Fund.

Besides governmental efforts like the CDM to create a market of global environmental services, nongovernmental initiatives have appeared as well. The private sector has become an increasingly important player in funding initiatives aimed at improving forest management. Such initiatives seek to use market forces to fund the consolidation and establishment of protected areas (e.g., Noel Kempff in Bolivia), reforestation, and sustainable forest management (e.g., Rio Bravo in Belize and Sabah, Malaysia).

Even if existing initiatives are relatively scarce, the rapidity and dynamism with which they are being developed is an indication of the high potential for using market forces to advance SFM.

4.2.4. Forest certification
A particular type of market-based mechanism, forest certification, deserves separate mention. Certification is a procedure by which a third party, on the basis of an audit conducted in accordance to agreed procedures, provides assurance that a product, process, or service conforms to specified standards (Bass et al. 2001).
The institutional foundations for an internationally acknowledged certification process were laid in 1993 when representatives of environmental, economic, and social organisations from many countries founded the FSC. The FSC has the objectives to promote global standards of forest management, to accredit certifiers, and to encourage buyers to buy certified products. Since then a number of other international standard-based certification bodies have formed such as the Pan-European Forest Certification Framework launched in 1999 and several national programmes. Both multilateral and bilateral donors, as well as international NGOs, have supported national and regional certification initiatives.

Forest certification, a form of product differentiation, has allowed producers to tap into a market niche until then unexploited. For the first time it linked a demand for sustainably produced goods to verified sources of these goods, offering producers a new incentive for improving forest management (Bass et al. 2001). Forest certification also allowed international NGOs to act proactively on their frustration with governmental and intergovernmental processes to improve forest management.

An element of the success of FSC has been its promotion of national working groups that craft national criteria and indicators that reflect the specific ecological, social, and economic conditions of a given country. More generally, FSC certification embraces wholeheartedly the notion that the processes of standard setting and practice assessment had to occur with the involvement of affected stakeholders.

Certification also responded to the need of many donors to measure the impact of their efforts to promote SFM. A recent example is the target set by the World Wildlife Fund/World Bank Alliance to measure its progress towards sustainable forest management in terms of bringing 200 million hectares of global forests under certification by 2005.

4.2.5. What was achieved?

Progress towards SFM can be evaluated by looking at a variety of criteria and indicators that are applicable at various scales. Some of these C&I are national in scope (e.g., legal framework or extent of forest area) and have often been incorporated into national guidelines. Other C&I are designed to address conditions within a single ownership (e.g., practices applied in forest management) and have often become part of forest regulations and norms. Any evaluation of progress towards SFM needs to take into account this difference between national and ownership scales.

Furthermore, even at the single ownership level, any evaluation of progress needs to recognise that SFM is a ‘package’ that comprises various activities and practices. The adoption of some practices does not mean that all practice recommendations will be followed. For example, many forest management operations now have management plans (FAO 2001), while severe violations of other forest regulations still occur. In Malaysia for example, almost 73% of the forest area has management plans, but only 55,000 ha are under certification (FAO 2001) and about one-third of the harvest may be illegal (Table 3). Another interesting example is Bolivia, where virtually all forest concessions (6 million hectares) have forest management plans, almost 1 million hectares are under certification, and yet illegal deforestation continues at a rate estimated at several times the authorised level.

With these caveats, it can be said that the past two decades have marked some progress towards SFM. Important institutional and legislative reforms have taken place, reforms of the public sector have begun to address issues of corruption, efforts to clarify issues of land tenure have started, and almost everywhere government revenues from forestry have increased. In less than 10 years, FSC-accredited bodies have certified about 2.8 million hectares of natural tropical forests (FSC 2003). More than 80 million hectares are currently certified worldwide, the majority of them in Europe (47 million hectares) and North America (30 million hectares) (FAO 2001).
To put this progress into context, however, one notes that the overwhelming majority of natural production forest in the tropics is still utilised without much regard for ecological, economic, or social sustainability, deforestation is still rampant, and even areas set aside for protective purposes are often at risk of degrading exploitation.
The objective of this section is to develop an initial listing of possible causes and most appropriate policy responses.

Besides the lessons learned from past experiences in promoting SFM, our understanding of illegal forest activities has been furthered by discussions held at official meetings (such as the Forest Law Enforcement and Governance meetings held in Asia and Africa), the papers and declarations arising from those gatherings (such as the Bali Declaration), and an increasing number of reports and papers (e.g., Sizer and Plouvier 2000; Brack and Hayman 2001; Contreras-Hermosilla 2001; Environmental Investigation Agency and Telapak Indonesia 2001, 2002; Forest Monitor 2001; Casson and Obidzinski 2002).

In the following subsections, the causes of illegal forest activities (summarised in italics) and possible policy responses (highlighted in boldfaced text) are organised under the main headings of market, governance, legislative, and capacity and technical. Subsection titles reflect the specific causes included under that heading; the policy options, however, may be of a different nature, e.g., a market mechanism to address a governance cause. Furthermore, a policy may be effective against several causes. If this is the case, it is listed only once against the most relevant cause.

The description of policy options includes producer and consumer countries’ measures under the same heading. When the options are similar, only those available to the consumer country are discussed for simplicity. Consumer countries can support producer countries in the implementation of their specific policy options by providing financial and technical assistance, which can be applied to most of the policy options listed for producer countries and is omitted for simplicity.

Market causes are major underlying causes of illegal forest activities and in most cases need to be addressed and regulated through governance and legislative measures that provide the framework within which the market operates. Therefore, market factors are discussed first.

The underlying causes of illegal logging, possible policy responses and their expected impacts are summarised in Appendix II. In that Appendix, policy options are classified as:
• structural, referring to the social, institutional, and economic fabric of society and government, representing the most complex interventions;
• legislative, referring to interventions required to change the policies, laws, and regulations; and
• technical, referring to all other aspects that involve relatively clear mechanistic measures—the simpler interventions.

Policy options are further differentiated in sectoral, if they can be addressed within the forestry sector, and extrasectoral, if they involve initiatives outside the forestry sector. The timescale of intervention is also indicated, and is subdivided into short-term (1–3 years),
The causes of illegal forest activities and policy options

medium term (3–5 years), and long term (more than 5 years).

Appendix II also provides a preliminary descriptive assessment of potential impacts of policy options with a focus on whether the policy affects the intended objective directly, meaning that it can be effective without requiring other conditions, or indirectly, that is, needs certain other conditions in order to be effective.

5.1. Market causes and policy options

Profit and income maximisation are key aspects of economic behaviour. Illegal behaviour is more likely when the benefits derived from violating the law (e.g., timber mining, tax evasion, harvesting protected species, harvesting in unauthorised areas) exceed the costs of noncompliance. In large part, the policy options listed in this section consist of measures that reduce the economic reward from illegal behaviour, either by increasing the rewards of compliance or by increasing the costs of noncompliance.

Forest values are lower than values generated by alternative land uses.

In some instances, forestland may yield private and social benefits (including the value of environmental benefits) lower than alternative land uses, leading government officials, individuals, communities, or companies to change land use against the existing legislation.

Revise legislation to allow land use change. When forestland use provides social benefits lower than other land uses, initiatives addressing illegal forest activities should focus on revising the legislation to allow land use changes, rather than attempting to enforce existing legislation.

Market and nonmarket subsidies

Market and nonmarket subsidies, such as log export bans and cheap loans, result in an expansion of the installed processing capacity (possibly larger than authorised, i.e., illegally), thus increasing domestic demand for raw materials for processing. Increased demand could, in turn, lead to an increase in illegal logging if demand exceeds legal supply and if law enforcement is weak, or if powerful conglomerates exert political pressure to exceed the allowable cut (possibly set at a national sustainable level).

This situation is often referred to as ‘domestic processing capacity that exceeds timber supply’ (Karsenty 2001). ‘Overcapacity’ contributes to an increase in demand for finished products (i.e., consumption) only to the extent that it causes a reduction in market prices, which leads to an increase in final demand. However, if this situation does not eventuate, it is the domestic and export demand for the finished products rather than ‘overcapacity’ that contributes to illegal logging. If the significant political pressure generated by domestic ‘overcapacity’, and the associated large investments, results in the acceptance of log harvest levels that exceed legal limits (Contreras-Hermosilla 2001), then the ‘overcapacity’ argument could hold. Even without overcapacity, however, logging companies may apply political pressure to secure a level of log extraction that exceeds the legal harvest, as demonstrated by countries that do not have significant timber processing sectors such as the Solomon Islands (Duncan 1994).

These arguments do not mean that subsidies are not an issue. The logic behind some of the arguments, however, and the actual contribution of subsidies to current market and industry trends need to be assessed. For instance, while the introduction of a log export ban in Indonesia in the 1980s is thought to have contributed significantly to the expansion of the Indonesian timber industry (Manurung and Buongiorno 1997), a significant expansion of the industry has also taken place in other countries, e.g., European countries, on the back of a considerable increase in market demand, as shown by steep increases in the trade of timber products over several decades (Michie and Pesonen 2002).
Furthermore, ‘overcapacity’ affects not only producer countries, but also consumer countries that import timber products for further processing. This, obviously, raises the issue of reciprocity in the implementation of much-needed regulations leading to the closure of businesses using illegal timber and (less common in consumer countries) illegal timber products businesses, i.e., firms without permits to operate. Given the current difficulty in identifying illegal timber products and sourcing legal timber, the introduction of legislation regulating the use of timber products should proceed at a similar pace in consumer and producer countries to avoid providing an undue advantage to some countries.

**Review and revise market and nonmarket subsidies.** The above arguments imply that market and nonmarket subsidies may cause pressures that lead to illegal forest activities by distorting market signals. However, the degree to which they do this needs to be assessed, their direct or indirect contribution to illegal forest activities needs to be established, and options for reform need to be developed.

**Review and revise extrasectoral market and nonmarket subsidies.** Market and nonmarket subsidies to other sectors, e.g., agriculture, need also to be assessed and possibly reformed as they may result in private benefits from forests lower than alternative land uses, leading individuals, communities, or companies to attempt changes in land use against existing legislation.

**Consumer countries** can contribute to an assessment and possible reduction of perverse subsidies by ensuring that Export Credit Agencies have appropriate guidelines to screen out credit lines that may be contributing to the activities of illegal businesses or businesses using illegal timber (Leubuscher et al. 2002) or carrying out other illegal forest activities such as establishing oil palm and timber plantations by clearing forest against existing legislation (Tacconi 2003).

**Under current market conditions conventional logging (or timber mining as it is often called), which is illegal if SFM regulations are in place, is financially superior to full adoption of good management (and compliance with the law).**

With respect to areas harvested for timber, a recognised obstacle to the promotion of SFM is its perceived financial inferiority as compared to timber mining or land clearing (e.g., Barreto et al. 1998; David et al. 1999; Pearce et al. 1999; Rice et al. 2001). In particular, certain SFM restrictions—such as the obligation to harvest within the authorised area, the protection of rare but high-value species, the establishment of conservation set-asides, and the retention of seed trees or of trees below the prescribed minimum size (i.e., diameter at breast height), among others—result in immediate financial losses. These factors suggest that full adoption of SFM, from a purely financial standpoint, is often uncompetitive with timber mining.

**There exist significant resistances and economic obstacles to change existing practices and to comply fully with the law.**

Holmes et al. (1999) have demonstrated that the adoption of certain SFM practices (e.g., planning) in Brazil can result in higher economic efficiency of harvesting operations. Yet, adoption of these practices has obstacles. For example, timber mining still yields extraordinary rates of returns, giving loggers little motivation to improve further the efficiency of their operations. Furthermore, planning operations involve significant upfront costs that require the availability of functioning credit markets and can be hindered by unavailability of adequate machinery, trained personnel, and relatively high rates of time preference. Finally, insecurity of land tenure is a major deterrent.

**Increase awareness about the environmental and financial benefits of certain practices.**

When forest operators are educated about the financial benefits of certain SFM practices, they are more likely to adopt them.
Dissonance between private and social values. Non-timber values do not figure in loggers’ decision making.

In some instances, economic benefits to society from forestland, which include the value of environmental benefits and represent the net of the cost of monitoring and enforcing legislation, may be higher than those of alternative land uses, but if private financial benefits from forests are lower than alternative land uses, and if there is a lack of incentive mechanisms for retaining land under forest cover and managed sustainably, government officials, individuals, communities, or companies will use the forest unsustainably and eventually attempt to change land use against existing legislation.

When non-timber goods and environmental services are taken into account, it is often the case that, from an economic standpoint, SFM is superior to timber mining and land clearing. The problem so far is that private sector initiatives to create a market for environmental assets such as carbon offsets, biodiversity, and watershed protection are still in infancy (Pagiola et al. 2002). Many seriously question whether SFM can be made more profitable than timber mining in the absence of international compensation for environmental services (Virtanen and Palmujoki 2002). A relatively small but increasing number of initiatives is being launched and tested, suggesting that, when operators are compensated for the non-timber values they provide, they will make better forest management decisions.

Strengthen mechanisms that enable payments for the provision of environmental services. In situations where forests provide social benefits higher than other land uses, and where private benefits from forests are lower than from other land uses, the focus should be on developing financial mechanisms to compensate the appropriate stakeholders for maintaining the forestland use. Both governments and the private sector experiment with initiatives that compensate forest users for the provision of environmental services such as carbon, biodiversity, and watershed protection. These initiatives deserve further support and testing (Pagiola et al. 2002).

Support certification initiatives attesting legal compliance. By providing support to campaigns that seek to increase society’s awareness of the problem of illegal forest activities, governments, organisations, and civil society can stimulate the demand for legal products, as certified by accredited labelling schemes.

Certification allows producers to access markets that are sensitive to the way in which forests are used. The adoption of certification has been more widespread in countries with good policies concerning both forestry and processing. In these countries, certification has provided an incentive to meet all legal requirements, even those that, for a variety of reasons, operators would not bother to meet.

Within the debate on how to further promote certification there are already suggestions to adopt a ‘stepwise’ approach to full certification. Since compliance with national and international laws is now one of the certification criteria in most schemes, a proposal to create a ‘certification of legal origin’ could be developed without much new infrastructure and know-how.

Certification has proposed a model of standards development based on a participatory approach that has proven responsive to local needs and realities. If the certification venue is chosen to pursue reduction of illegal forest practices, one should be cautious to avoid a proliferation of certification schemes, which can create confusion and lack of credibility.

When there are poor laws, compliance with legality is easier. If some form of certification will be used to induce compliance, careful thought should be given to the definition of ‘minimum legal requirements’.
5.1.1. Initiatives by consumer countries
One of the components of the United States’ President’s Initiative Against Illegal Logging focuses on ‘energizing market forces’. The objective of the component is ‘to promote good business practices, transparent markets, legal trade’. Activities will include the promotion and support of voluntary codes of conduct, exploring voluntary, trade-related arrangements with countries where illegal logging is a problem, studies to determine scope and impacts of illegal logging, assessment of lessons learnt from CITES and identification of actions to be supported for implementation, and the promotion of mechanisms to address illegal logging through the U.S. administration’s trade negotiating agenda.

5.2. Governance causes and policy options
Governance is defined here as the process through which elements in society exercise power and authority. It is a broader notion than government, and its principle elements include the constitution, legislature, executive, and judiciary. Governance involves interactions between these formal institutions and those of civil society. Criteria for assessing governance include degree of legitimacy, representativeness, transparency, accountability, efficiency, and fairness (The Governance Working Group of the International Institute of Administrative Sciences 1996; International Monetary Fund 1997).

A weak state.
A weak state has limited capacity to develop appropriate governance processes, to develop legislation, enforce the law, and guarantee fairness in the exercise of power. Many factors contribute to determining the weakness or strength of a state. These go well beyond forest sector issues and cannot be addressed through policies focusing on illegal forest activities. However, the capacity to raise revenue (mainly derived through taxation) is a most fundamental task of the state and a factor that determines its capacity to function (Brautigam 2002).

**Strengthening the state capacity to raise and manage revenue**, including in the forestry sector, would increase its capacity to govern.

Lack of transparency and accountability provides opportunities for abuse of power and corruption.

The Rio Declaration on the environment recognises the importance of the principles of access to information and accountability in environmental decision-making in order to improve environmental governance. Improvements on this front would result, for example, in civil society’s increased capacity to scrutinise the use of public funds derived from, and invested in, natural resources, government’s decisions about the use of natural resources, and the involvement of politicians and government officials in illegal forest activities. Attempts to promote SFM through increases in transparency and accountability have contributed to a containment of corruption in some countries.

**Improve transparency and accountability.** Examples include a transparent forest concession allocation process; information on revenue collection from forestry being widely available, for example through maps of forestland and ownership rights; and dissemination of information of law enforcement actions and outcomes.

**The adoption of anticorruption legislation** and codes of ethics would foster a reduction in political and business-related corruption.

**Greater reliance on market-based instruments** has proven a valuable tool to reduce corruption and to increase transparency and efficiency. Changes in legislation affecting resource access, taxation, income distribution, and forest management (e.g., auctions) appear to have begun to make a difference. For example, reduced discretion in the award of contracts,
authorisations, and permits, along with reduced discretion and simplification of taxation regimes, has produced substantial increases in government revenues (e.g., in Cameroon) and allowed broader public participation in the definition and establishment of forest priorities.

**Lack of consultation and involvement of important stakeholders.**

Policies and laws imposed without consultation with and involvement of important stakeholders lead to confrontational attitude towards government and its laws. Various forms of stakeholder consultation and involvement have proven extremely successful in policy reform and in the development of national certification standards. For example, a recent review of nine case studies of national forest certification working groups identified key lessons, which included that ‘working groups, in order to be successful, must fully engage with a range of stakeholders from environmental and social NGOs to industry, forest owners, to the local community and find mechanisms where decision making is truly shared among these often divergent groups.’

Develop public consultation processes that are participatory and transparent for policy formulation, policy implementation, and information sharing.

**Lack of funding for political activities.**

Lack of funding, guidelines, and reporting requirements for political activities (e.g., parties, elections) are some of the factors that may contribute to corruption in the political system (World Bank 2000). They may result in political support for illegal forest activities in order to fund political initiatives (McCarthy 2002b).

Public funding for political activities and clear reporting requirements would reduce the incentives to raise funds through illegal activities. These measures would be supported by an increase in transparency and accountability processes as discussed above.

**Political role, corruption, lack of funding of security forces.**

Reliance of the political apparatus on security forces, the presence of widespread corruption, and/or their underfunding may result in direct involvement in (unregulated) timber operations or corruption that weakens the law enforcement system (Barber and Talbott 2003).

A reform of the security forces and the judiciary may be required if they are involved or significantly facilitate illegal forest activities. In a situation in which the law enforcement system does not function well, or is corrupt, the likelihood of conviction in relation to illegal forest activities decreases. Hence their profitability increases, and improvements in other parts of the forest monitoring system will yield limited benefits (Tacconi *et al.* 2002).

Consumer countries could apply pressure to reform the security forces through a review of military cooperation agreements. In a global context in which the fight against terrorism has primary relevance, however, it is probably unlikely that a review of security cooperation agreements would be initiated on the basis of the need to address illegal forest practices.

**A corrupt and/or weak judiciary.**

A corrupt and/or weak judiciary weakens the law enforcement system, which as noted above decreases the likelihood of conviction in relation to illegal forest activities. Therefore, they can be expected to continue. A reform and/or strengthening of the judiciary may be required (Buscaglia 2001).

**Unclear allocation of competencies.**

Unclear allocation of competencies over forestland between different levels of government may result in conflicting legislation, logging permits allowing harvest above the ‘legal’ national level, and a government level willing to ‘legalise’ with official documents forest

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*WWF/World Bank Alliance Project in Support of National Forest Certification Groups www.piec.org/MSWG_toolkit/*.
products and activities that are illegal according to another government level.

A lack of appropriate processes to deal with interagency disagreements over definitions and actions may result in a dissonance of views between government agencies, e.g., forestry and agriculture, over the allocation of resources to different uses and may lead to lack of enforcement of land use plans. The development of appropriate and accepted land use plans, through participatory processes, would result in a decrease of activities that were tolerated but considered illegal.

Changes and/or clarification of the competencies of different government levels and agencies. This action would be required in order to establish agencies’ roles, responsibilities, and accountability. It may involve sectoral reforms when different levels of the same ministry or agency are involved, but it may call for extrasectoral reforms when different levels of government and/or agencies are involved.

Clear processes to deal with interagency disagreements over definitions and actions. Sometimes, overlapping competencies are inevitable. In these cases, appropriate ‘processes’ or ‘procedures’ should be put in place to clarify how to resolve interagency disagreements.

Indigenous rights are not recognised or respected.
This lack may result in the expropriation or usurpation of indigenous lands. The violation of indigenous rights can result in the marginalisation of indigenous people and have negative effects on their livelihoods. They may resort to logging or other uses of the forest considered illegal according to the legislation that resulted in the usurpation of their rights or that was implemented subsequently. The appropriateness of an approach that calls for enforcing such legislation to reduce illegal activities should be questioned.

Reinstatement of indigenous rights to land and other resources. Reinstatement might lead to a reduction of illegal forest activities, but effectiveness would depend on a range of conditions such as the definition of what is illegal, e.g., whether it conflicts with indigenous uses.

Consumer countries can support the reduction in violations of indigenous rights by ratifying, and prompting producer countries to ratify, international agreements recognising indigenous rights and claims to land, and by monitoring trade activities to ensure they do not affect indigenous rights.

Land tenure.
When land is state property but individuals and communities contest ownership, or there is a lack of clear land tenure rights, illegal logging may take place and the state cannot or does not want to control it for political reasons. This political lack of control may also apply to protected areas. Public and private ownership rights may be violated for a range of reasons, from a lack of acceptance of the legislation that does not recognise individual or community rights to land, to opportunistic actions springing from the recognition of the lack of capacity to enforce recognised and generally accepted rights. Disputes over land tenure, coupled with a lack of enforcement capacity, result in a de facto open access resource management system, in which there are no incentives to control resource use.

Illegal forest activities in protected areas have been documented and calls for stopping them issued (Environmental Investigation Agency and Telapak Indonesia 2002). Lawlessness in protected areas is not a desirable situation, but how best to approach it is debatable. The enforcement of existing legislation may be appropriate in situations where illegal forest activities take place as a result of powerful groups interested in extracting resources illegally (McCarthy 2002a). When illegal activities are the result of rural people’s need to make a living out of those areas, however, an approach that includes the provision of appropriate incentives backed by law enforcement is more desirable from an equity perspective.

Reform of the land tenure system should receive priority over an increase in enforcement
capacity, which may provoke increased social conflict and marginalisation of the weaker groups. Livelihoods would benefit from an increased access to forest resources or if rural people were allowed to clear land for agricultural purposes, if they so wish.

Increasing security of tenure does not necessarily involve reforming the land tenure system, which is an extremely complex, long-term, and controversial task. Land lease agreements can guarantee security of tenure while maintaining public control over the land, thus allowing reform of the tenure system to take place over the appropriate timescale.

Reform protected area management. A reformed approach involves increased participation in protected area identification and management, payments for the provision of environmental services and maintenance of customary rights (Tacconi 2000), and the derivation of other benefits from the sustainable use of the area. In situations where the land included in protected areas was expropriated from the people now using it 'illegally', a rethinking of the appropriateness of the protected area may be needed.

5.2.1. Initiatives by consumer countries

The United Kingdom and Indonesia have cooperatively developed a comprehensive Action Plan on Illegal Logging. One component of the action plan supports the involvement of civil society in preparing the work programme, identifying its roles in implementation and monitoring of the plan, monitoring of illegal logging, building civil society’s capacity, and establishing an independent website on illegal logging.

One of the components of the United States’ President’s Initiative Against Illegal Logging focuses on ‘empowering communities’. The objective of the component is ‘to foster the enabling conditions and incentives for local communities to reduce illegal logging and conserve forests and wildlife’. Activities will include the promotion of policy and institutional frameworks conducive to community forest management, strengthening managerial capabilities of communities, developing incentive-based programmes to foster community participation and leadership, and training. It will seek to develop partnerships with companies, communities, and governments as well as support appropriate networks.

5.3. Legislative causes and policy options

Laws and regulations are essential to provide the ‘rules of the game’ by which economic activities, including forest use, operate. They are also essential to guide the activities of the private sector in a direction consistent with social objectives. Indeed, in the absence of regulation, loggers can be expected to ignore the negative social impacts of logging, as they derive little or no financial gain from mitigating them (Boscolo and Vincent 2000).

All too often, though, important policy reform is incomplete. For example, Poore and Chiew (2000) concluded that some countries are still lagging behind in terms of passing critical legislation and developing proper institutions. Yet, in other cases, laws and regulations have contributed to the problem rather than to its solution.

Conflicting and unclear legislation does not allow a clear distinction between legal and illegal activities and products.

Conflict may arise between different levels of sectoral legislation, such as regulations versus laws, between legislation of different sectors, such as agricultural versus forestry, or between legislation of different levels of government, such as central versus local governments. The adoption of integrated natural resource management legislation spanning more than one sector may improve, among other aspects, intersectoral coordination and reduce conflict between various laws regulating sectors such as forestry and agriculture. In the event of conflict between legislation of different levels of government, there may be a need to address
governance processes as already discussed above. Much legislation also leaves a lot of discretion in the interpretation of the law. Regulations in British Columbia, for example, often use the verb ‘may’ instead of ‘shall’ in a variety of forest harvesting prescriptions.

Establish criteria and indicators to assess the clarity, transparency, appropriate level of discretion in the implementation of the law, and progress towards legal compliance. In the SFM experience, C&I have greatly contributed in assessing the quality of existing management practices and provided a clear metric to measure progress towards improved practices. Clear C&I have served governments in producer countries as well as NGOs and donors in evaluating their own effectiveness in promoting SFM. In Bolivia for example, to foster accountability and as a verifiable indicator of the project’s success, the BOLFOR Sustainable Forest Tropical Forest Management Project set early on the goal of having 25% of the production forest in the Department of Santa Cruz certified as well managed by the Forest Stewardship Council by 2001 (Putz et al. mimeo). Similarly, the World Bank, in its revised forest policy strategy, resolved ‘to encourage the widespread use of internationally agreed criteria and indicators for sustainable forest management’ (World Bank 2002, p. 40). Legislation and enforcement will need to find ways to deal with the variety of forms of illegality. Probably, a very strict adherence to ‘legality’ would make most timber products ‘illegal’ not only in the tropics but in developed countries as well (see Contreras-Hermosilla 2001).

With clear C&I, a chain of custody for timber products may be designed to attest their legality. Chain of custody is an essential factor in making operational legislation that discriminates between legal and illegal timber products, such as legislation banning the import of illegal timber products (Dykstra et al. 2002). Third-party verification and certification has added credibility to claims of SFM. Third-party monitoring and verification can probably do a lot for the credibility of claims of ‘legality’.

Inappropriate regulations.
Many regulations are still excessively prescriptive, allowing little flexibility for compliance, and introducing sporadic and arbitrary enforcement. Overly prescriptive regulations can lead to many undesirable consequences. First, they are often expensive to comply with, which makes noncompliance attractive. Second, they are often expensive for the public sector to enforce, which often leaves public sector officials with no choice but to focus on a limited number of players. In these cases, enforcement becomes sporadic, arbitrary, and corrupt. Officials may focus on those operators that have chosen to play by some rules. Because these operators are now opening their books (albeit partially) and becoming more transparent with their practices, they come under more scrutiny than their blatantly illegal counterparts.

Clear and transparent criteria should be adopted in the implementation of the law (e.g., in the selection of which actors to inspect, etc.). Ideally, appeals should be possible if implementation of the law does not follow these criteria.

‘Uniform’ prescriptions can discriminate access based on resources, not capacity.
Most SFM regulations do not differentiate much among different types of producers and their size. Thus, communities seeking formalisation or certification are often asked to meet the same criteria as larger operators. Quite often, to legalise their status as recognised entities, communities need to go through lengthy, cumbersome, expensive, and at times corrupt additional loops. The uniform application of a common management standard has in some countries (e.g., Brazil and Bolivia) produced perverse outcomes. High management standards have become a barrier to entry for the unskilled and marginalised, who continue to operate and even gain ‘market share’ at the expense of ‘formal’ actors burdened by reformed fiscality and regulations. Still, anecdotal evidence from Bolivia suggests that operators that embraced SFM lost almost the entire domestic market (amounting to about 50% of the sectoral GDP)
to operators feeding the market with wood from unregulated (and illegal) sources.

Innovative regulatory forms (e.g., based on performance rather than practices) should be sought that are flexible and adapt to local realities. This is a problem that has been recognised also in the certification field where ‘low-input certification’ is being considered for ‘low-input management’ (Bass et al. 2001).

It is unclear at which stages some products become ‘legal’.

More rigorous analyses are needed to assess where illegality occurs in comparison with where environmental and economic losses occur. For example, if logs are taxed when they are sold or exported, actions to ensure that they are harvested legally will prevent environmental losses but will have only limited impact in terms of increasing government revenues.

Discrimination against livelihood activities and small-scale forestry operations.

Forestry legislation often discriminates against the use of forests for livelihood purposes and for small-scale logging and processing, which are therefore considered ‘illegal’ activities. There are many examples of countries in which the legislation discriminates against livelihood uses of forests in favour of large-scale industrial uses, often in the form of forest concessions, or where the legal framework regulating livelihood uses is complex and leads to corruption and difficult access to resources (SGS Trade Assurance Services draft). Supporting law enforcement would therefore have negative impacts on livelihoods.

A reform of the existing legislation to reduce or eliminate biases against livelihood and small-scale users of forests should receive priority attention. Activities strengthening law enforcement should be sure not to weaken reform processes aimed at improving rural people’s participation in forest activities.

Transport and trade regulations are complex, unclear, difficult to enforce, and inhibit business activities.

Streamline bureaucratic requirements to minimise opportunities for corrupt practices and facilitate the flow of timber products, including those produced for livelihood purposes, while allowing authorities to monitor the flow of products and to collect taxes. Specific enforceable rules suited to the local context, such as declaring illegal the transport of timber during the night when policing is difficult, may be used to curb the transport of illegal timber, thus creating a barrier to illegal logging.

Consumer countries can introduce legislation that seeks to control the import of illegal products and to facilitate the import of legal products. They can also set lower tariffs for products certified as legal, and introduce government procurement guidelines mandating that only timber products with a certificate of legal compliance can be purchased (Brack et al. 2002).

Financial and tax laws.

Lack of, or weak, money-laundering legislation allows investment in forestry of funds derived from criminal activities and recycling of funds from illegal forest activities. Furthermore, financial and tax laws are complex and do not stipulate clear provisions for transparent business practices, thus facilitating illegal and corrupt activities. Violations of financial, accounting, and tax regulations result in losses of government revenue as well as possible losses by shareholders if the business fails as a result of the violations.

A clear, enforceable financial and taxation regulatory system, including money-laundering measures, and financial and tax intelligence units are required to minimise illegal practices. The existence and monitoring of due diligence guidelines ensures that companies adhere to proper financial management, thus limiting their capacity to engage in illegal activities. These policy options reduce the attractiveness of illegal financial activities and may result in an increase of government revenues.
The links between illegal financial activities and illegal logging need to be assessed to understand the extent to which curbing illegal financial activities would result in a reduction of illegal logging.

**Penalties for illegal activities are set too low and do not act as a deterrent.** An appropriate level of penalties is required to ensure that the legislation has a sufficiently deterring effect. High penalties, however, do not constitute a sufficient deterrent if the law enforcement system is weak. A weak enforcement system results in low probability of conviction and, therefore, low expected cost of penalty.

5.3.1. Initiatives by consumer countries
The European Union is developing an Action Plan for Forest Law Enforcement, Governance and Trade. One of the proposed components of the plan is the establishment of a ‘legality licensing scheme’. Producer countries that join the scheme will issue legality licences for wood products, which will be validated by the proposed EU Forest Partnership Agency. Producer countries joining the scheme will benefit form a legality label and promotional actions for their products in the EU. A Council regulation will be required to implement this scheme. With regard to the WTO implications of a licensing scheme such as the one proposed for the EU, it seems unlikely to be found in violation of the GATT, although the possibility of a negative determination cannot be excluded and depends on the details of the design (Brack 2003).

The proposed EU action plan also includes measures to improve corporate responsibility through voluntary codes of conduct, will call on public procurement agencies to take measures to avoid purchasing illegal timber products, and will make a reference to financing institutions, including export credit agencies, to exercise due diligence when making loans to wood-producing operations, including an assessment of their legality.

The United Kingdom is supporting the development of the EU regulation for a legality licensing scheme. Domestically, it is developing national government procurement guidelines to ensure that illegal timber products are not purchased. The procurement policy considered would have three timber product categories: legal and sustainable (preferred), legal and progressing towards sustainability (acceptable), and legal (if others not available).

Of particular significance for legislative aspects, the UK–Indonesia Action Plan will support the review of forest and forest-related legislation, including decentralisation regulations, customary law, constitution, forest law, rules, regulations and decrees, and trade and transport regulations. This action plan also supports consultation work to arrive at a definition of legality in Indonesia.

5.4. Capacity and technical causes and policy options
There exists a fundamental imbalance between government claims on forest resources and its capacity to administer them. Forestry departments are generally underfunded and understaffed and cannot appropriately monitor and enforce forest operations. Especially when large and remote areas need to be controlled, enforcement can be prohibitively expensive. Such imbalance between claims and capacity makes control and enforcement sporadic, arbitrary, and often corrupt.

Divesting and devolving state control over land, such as recognising rights of indigenous and other groups to the land, and promoting community-based resource management would improve control over the territory as well as equity in resource allocation. Where appropriate, these measures may have to be backed by appropriate regulatory and market measures to ensure that forests are maintained.
Involve the private sector, NGOs, and civil society in monitoring, enforcement, and other functions they can carry out more efficiently than the public sector. Privatisation of law enforcement activities has helped reduce the burden of enforcement agencies. Reliance on private parties (whether civil society, NGOs, or certification organisations) has greatly strengthened the government capacity to enforce certain laws and regulations (SGS Trade Assurance Services draft).

Provide incentives for voluntary compliance. In Bolivia, for example, incentives exist for the adoption of certification (which mandates legal compliance). For instance, certified forests are exempt from the five-year government forest audits.

There exists an inadequate enforcement capacity in terms of qualified personnel and financial resources.
A recent review (Poore and Chiew 2000) concluded that, while significant legislative and institutional reforms have occurred over the past decade, these reforms have only marginally been acted upon. Individual countries argue that the problems lay in scarcity of qualified human resources and insufficient finances.

Adopt performance-based instruments (e.g., performance bonds) to increase the risks associated with noncompliance. Performance bonds work like a deposit that is made with the forest administration or a mutually trusted third party and that will be forfeited in case conditions specified in the agreement (e.g., the concession contract) are violated.

Treat monitoring and enforcement as an economic activity. Governments should establish a stronger relationship between the value added by a unit of enforcement (e.g., the higher tax collection obtained because of an additional guard) and retribution to this enforcement unit (the guard's pay). As of now, the pay of enforcement actors has little relationship to the value generated by their work.

Develop more effective systems for detecting violations (e.g., focusing critical locations and activities) and to increase the firmness with which penalties are applied.

Mismatch between SFM practices and types of enforcement.
SFM is made up of several interconnected actions that range from data collection to planning to careful harvesting to silvicultural interventions. As one might expect, some practices are adopted more often than others, and practices that are economically advantageous are adopted first. In a study recently carried out in Bolivia, Boscolo et al. (draft) found that a significant factor affecting the adoption of a particular SFM practice is the ease with which the forest administration agency can enforce such practice. This ease of enforcement, measured by an index that accounted for the existence of double checks, the necessity of field visits, and the permanence of the signs of noncompliance, appears to play a critical role in explaining the adoption of individual practices, at least in Bolivia. The same study suggests that managers who are more aware of the impacts of forest practices on sustainability are more likely to adopt improved practices.

Design regulations that can be enforced in multiple ways. For example, make the release of new authorisations contingent upon demonstrated fulfilment of past obligations.

Identification of illegal products is difficult.
It is difficult to determine the legality of forest products because identification depends on the source (e.g., harvested legally) rather than type of product (e.g., drugs).

Establish specialised timber trade units that detect misclassifications and misreporting to avoid taxes.

Increase monitoring, enforcement efforts, and penalties. The potential benefits from illegal forest activities can be reduced through an increase in the risk associated with illegal activities by increased monitoring, enforcement efforts, and penalties (Tacconi et al. 2002).
An increase in monitoring efforts using a range of methods, such as field checks and remote sensing technology, possibly carried out by independent parties, can have a direct impact on illegal logging as it targets the activities in the field.

Technological innovations can also reduce the cost and allow increased surveillance. The effectiveness of increased monitoring capacity is dependent on governance variables, that is, in a corrupt environment increased capacity may not result in increased enforcement.

Underfunded and understaffed customs departments cannot monitor trade appropriately. Enforcement capacity may also be improved through better data collection, coordination, and sharing. Customs’ operations would benefit from increased exchange of data on trade, including prior notification of shipments between producer and consumer countries.

5.4.1. Initiatives by consumer countries
The UK–Indonesia Action Plan aims to develop capacity to verify legality by establishing a system for independent verification and a chain of custody and tracking system. It seeks also to support the deployment of improved security equipment for forest protection and the clarification of the role of customs departments in Indonesia and UK.

One of the components of the United States’ President’s Initiative Against Illegal Logging focuses on ‘strengthening the rule of law’. The objectives of the component are to build country capacity in on-the-ground forest law enforcement, including the ability to prosecute offenders, build intelligence sharing among law enforcement agencies, and increase knowledge, understanding, and priority of logging crime among the U.S. law enforcement community. Activities will include

(i) assessments of the U.S. international timber market and international financial investments in the timber industry, along with the analysis of supply routes and transhipment methods;
(ii) assessment of the need to strengthen U.S. authority to prosecute importation of illegally harvested timber;
(iii) preparation of briefings on illegal logging, rule of law and enforcement issues for international bodies such as Interpol and CITES;
(iv) expansion of the use of international law enforcement communication systems to increase cooperation on illegal logging;
(v) provision of forest crime training segments in CITES programmes;
(vi) provision of support to conduct an assistance needs assessment, including technology, and a critical needs assessment for reducing corruption and improving transparency and legal frameworks; and
(vii) an increase in enforcement capacity through the provision of enforcement equipment and technology with associated training.

Another component of the abovementioned U.S. initiative focuses on ‘harnessing technology’, with the objectives of supporting the development of integrated monitoring systems and building in-country capacity to monitor forest activity and forest law compliance. Activities will support mapping and monitoring, information and data sharing, training and knowledge transfer.

Various international initiatives to address illegal forest activities (promoted for example by ITTO) are presented and discussed in the next section.
The purpose of this section is to examine international policy options for addressing illegal forest activities. The section examines a range of global and regional agreements, and for those agreements that are most directly relevant to forestry and the timber trade it evaluates the potential of the international community to use its provisions to reduce illegal logging and trade in illegal timber. Other agreements not directly concerned with timber are examined with a view to discovering whether their provisions could usefully be emulated in international efforts to control illegal logging and trade in illegal timber. When relevant, international institutions, some of which were established as an outcome of an international agreement, are also considered briefly.

The agreements and institutions considered in the section are divided into two broad categories, namely, trade-related and governance- and enforcement-related. Trade-related agreements and institutions are those that place restrictions of some kind on trade, e.g., by requiring a movement document such as a licence or permit, or by mandating prior informed consent before trade can proceed, or by banning trade in particular products with particular countries. Governance- and enforcement-related agreements and institutions are those that aim at enhancing the effectiveness of efforts to improve standards of governance or build transboundary frameworks to improve enforcement of regulations.

The section concludes by presenting some recommendations for adapting existing agreements, and developing new ones, with the aim of reducing illegal logging and the trade in illegal timber. It is likely that elements of all three categories considered here—trade regulation, governance and enforcement, and discussion—will be needed for effective action.

6.1. Trade-related agreements

6.1.1. CITES

The 1973 Convention on International Trade in Endangered Species (sometimes referred to as the Washington Convention, but more commonly known as CITES) aims to protect endangered species from overexploitation by controlling international trade under a system of import and export permits. Species are placed on one of three lists: Appendix I includes all species that are threatened with extinction; Appendix II includes species that are not necessarily threatened with extinction now but may become so unless trade in such species is subject to strict regulation; and Appendix III includes species that a party identifies as being subject to regulation for the purposes of preventing or restricting exploitation, and where it needs the co-operation of other parties in controlling trade.¹⁰

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⁹ Duncan Brack contributed this section.

¹⁰ For a good recent summary of the operation of CITES (Reeve 1992).
The Conference of the Parties implements amendments to Appendices I and, whilst state parties themselves can place species in Appendix III. Countries may enter a reservation for a specific listed species either upon becoming a party to CITES or upon an amendment to the appendix by the Conference of the Parties.

Trade in any species listed in any appendix is not permitted except in accordance with CITES regulations. The degree of control exercised over trade varies with the appendix in which a species is placed; in any case, export permits cannot be issued if a specimen was obtained in contravention of the exporting state's laws.

- For Appendix I species, trade must not be detrimental to the survival of the species and must not be for primarily commercial purposes. In effect, this is a blacklist of species for which trade is strictly limited. Any trade in listed specimens must obtain both export and import permits, and certificates are also required for the re-export of specimens.
- Commercial trade in Appendix II specimens is allowed if it is not detrimental to the survival of the species. This is a 'grey list' of species for which trade is permitted under certain conditions. An export permit must be provided to the importing state's customs authorities, but an import permit is not required.
- Trade in Appendix III specimens requires the management authority of the exporting state to issue an export permit. If the shipment is from a state that has listed the species in question in Appendix III, importers must verify that the shipment is accompanied by an export permit. If it is from another state, a certificate of origin must be presented.

Exceptions from these requirements are made for transit or transhipment of species; specimens that are personal or household effects; specimens that were acquired prior to CITES applying to the specimen; noncommercial trade between scientists or scientific institutions; and certain specimens that are part of a travelling zoo, circus, or other travelling exhibition.

The CITES noncompliance response system uses carrots, mostly in the form of technical assistance, strongly backed by sticks in the form of trade sanctions. In cases of serious noncompliance, the Standing Committee, based on Secretariat advice, has on several occasions recommended that all parties apply Article XIV(1) of CITES, which allows parties to take stricter domestic measures than those provided by the treaty, including complete prohibition of trade in CITES-listed species, collectively (albeit temporarily) against the offending countries. Almost 40 countries have been targeted for such prohibitions, including both non-parties and non-complying parties, although only in about half of these cases were trade sanctions actually applied. The success rate to date is almost 100%, but, with the exception of a few cases, no major economic interests were involved in the trade, which means that parties are, in general, not under much pressure to resist a strong noncompliance regime.

Weaknesses in CITES

A key weakness of CITES is that the export and import permits effectively acquire a value, opening possibilities for fraud, theft, and corruption in issuing them. Falsification of CITES permits is a common problem, particularly for high-value products such as caviar. Theft and sale of blank documents similarly undermines the system. In theory, for an export permit to be issued, the management authority of the exporting state must be satisfied that the specimen was obtained in accordance to the state's laws for the protection of fauna and flora. In practice, however, this requirement is often not observed, thanks to a lack of capacity and corruption.

A second key weakness lies in the crosschecking of documents against each other. The World Conservation Monitoring Centre (WCMC), once an NGO and now part of the United Nations Environment Programme (UNEP), monitors the legal trade taking place under CITES, receiving copies of all import and export permits issued. Although strictly speaking it is not part of WCMC's remit to investigate illegal trade, simple inspection of the
permits sometimes reveals fraud. However, in common with other multilateral environmental agreements, CITES lacks a comprehensive and independent system of monitoring and verifying the issuance and use of permits and the central reporting of data.

The third key weakness lies in the crosschecking of the documents against the actual shipment. Only a tiny fraction of the huge volume of goods in international trade can ever be physically inspected, and in the case of CITES, there are obvious problems in correctly identifying the almost 25,000 or so species listed in its appendices.

It is clear that the CITES permit system is subject to abuse even in highly developed countries. An analysis of mahogany imports into the U.S. in 1997–98 estimated that at least 25% of sawn wood imports (worth more than US$17 million a year) were illegal (Blundell 2000). The figure did not include trade unreported to U.S. Customs and the true magnitude is therefore likely to be much higher. Mahogany is the most commonly traded timber species listed under CITES.

The question of the validity of export permits arose in 2002 with regard to exports of big-leafed mahogany from Brazil. The species is listed under Appendix III of CITES, and in 2001 the Brazilian government ordered a complete ban on logging and export. Nevertheless, shipments to Europe and North America continued in the first few months of 2002. Pending further enquiries the authorities seized shipments reaching the U.S., Canada, and a number of EU countries, including Germany, the Netherlands, and Belgium. In March, the European Commission issued advice to EU management authorities that they should not accept imports of Brazilian mahogany since reasonable doubt existed over their legality. In the UK, however, the government declined to take action. The arguments in a subsequent court case brought by Greenpeace against the UK revolved around whether the export permits had been validly issued (there was some confusion over the matter deriving from a number of court cases in Brazil dealing with whether the authorities had followed proper procedures) and under what circumstances the authorities in the importing state would be justified in delaying the shipments and requiring further information on the validity of export permits.

Greenpeace lost the judicial review in the Court of Appeal. In a ruling issued on 25 July 2002, two of the three judges concluded that to allow importing countries to query the validity of export permits, even when some doubt existed over their validity, would introduce too great a level of uncertainty into international commerce. The third judge, however, dissented, accepting the argument that the survival of endangered species should take a higher priority. CITES resolution Conf. 10.2, adopted in June 1997, agreed that parties should ‘not authorise the import of any specimen if they have reason to believe that it was not legally acquired in the country of origin’. The decision of the UK court would seem to run counter to this conclusion, though the phrase ‘reason to believe’ is of course inevitably somewhat ambiguous.

**CITES and timber**

Nineteen tree species are currently listed in CITES appendices I and II, including Brazilian rosewood in Appendix I and small-leafed mahogany in Appendix II; various regional populations of the monkey-puzzle tree appear in both appendices. As a result of a decision taken at the last Conference of the Parties in November 2002, Latin American populations of big-leafed mahogany were added to Appendix II in November 2003. However, an evaluation of 255 tree species carried out in 1998 against the CITES listing criteria found that about 15 new species could be added to Appendix I and almost 100 to Appendix II (World Conservation Monitoring Centre 1998).\(^1\)

\(^1\) The species evaluated were chosen to provide ‘a reasonable representation of tree species from various regions, climates and grades of commercialisation and conservation’ (p. 2). The availability of information on individual tree species varied considerably.
Such additions to the appendices would need to be agreed at conferences of the parties, and any proposal to add substantial numbers of new species, particularly those important in international trade, is likely to rouse opposition. If the addition succeeded, it could change the nature of the agreement almost out of recognition. Total international trade in the animals, plants, and their products currently covered by CITES is estimated to generate an annual turnover of about US$20 billion, but this sum is dwarfed by the almost US$150 billion value of timber and wood products in international trade. Although not every tree species in trade would be added to CITES, an expansion from 20 to 135 species or more seems likely to place severe strains on the treaty’s operation.

Appendix III of CITES includes species subject to regulation only within the jurisdiction of a party and for which international cooperation is needed to control trade. Permits differ depending on whether exports originate in the listing country or in another range state. In the former case, an export permit must be granted subject to a finding that the specimen was legally obtained. In the latter, export is subject to the grant of a certificate of origin. Indonesia, for example, listed its own population of ramin in Appendix III in April 2001, with a zero export quota, and the measure became effective four months later. An immediate side effect was increased smuggling of ramin into Malaysia, which entered a reservation with regard to the listing.12

Timber listings in Appendix III have so far been used mainly for mahogany (most were replaced by the Appendix II listing in November 2003). The unilateral nature of Appendix III listings does offer an attractive way of controlling trade in particular species without waiting for a conference of the parties to agree to a listing, and it may certainly prove of value in controlling the trade in particularly endangered tree species. Nevertheless, it suffers, along with the rest of the CITES system, from the drawbacks identified above—the lack of reliability of documentation and the onerous requirement on customs officers to be able to identify particular species.

Conclusions
The big advantage of CITES is that it is already in existence and is widely, if imperfectly, implemented. The treaty has had some success in preventing the extinction of particular endangered species, but as a general rule it has worked best where commercial trade has ceased completely (i.e., an Appendix I listing). To stretch it to control a substantial volume of international trade in new tree species seems unlikely to work and may place the rest of the agreement in jeopardy. CITES is, therefore, likely to prove of value as a safety-net mechanism in protecting individual tree species that are endangered, but it cannot credibly be extended into an agreement to control illegal trade in all timber.

6.1.2. International Tropical Timber Agreement and Organisation
The International Tropical Timber Agreement (ITTA) was originally agreed upon in 1983. It entered into force in 1985 and was renegotiated in 1994. Its aim is to facilitate discussion, consultation, and international cooperation on all issues relating to the world timber economy, and in particular the international trade in timber and timber products, and sustainable management of the resource base. Its current membership comprises 57 countries representing 95% of world trade in tropical timber and 75% of the world’s tropical forests. Its governing body is the International Tropical Timber Council, which comprises representatives

12 This development means that Malaysia should be regarded, for the purposes of trade in the species concerned, as a nonparty to CITES. Trade with nonparties is not permitted except when documentation equivalent to CITES permits (or, in this case, a certificate of origin) is provided. Whether this is likely to be required in practice remains to be seen. However, the reservation does mean that Malaysia is under no obligation under CITES to regulate trade in ramin into and out of its own territory.
of its signatory states; the council normally meets twice a year, the next meeting being scheduled for May 2003.

ITTA established the International Tropical Timber Organisation (ITTO) as its secretariat and implementing agency in 1987. The ITTO carries out a wide range of policy work and project activities under the broad headings of economic information and market intelligence, reforestation and forest management, and forest industry. Project funding has totalled about US$250 million in the last 12 or 13 years (Executive Director of ITTO Manoel Sobral Filho personal communication).

Unlike a number of other commodity agreements, the ITTA has no price regulation mechanisms or market intervention provisions and accords equal importance to trade and conservation. Although it has a data-reporting requirement that covers all timber and not just tropical timber, members’ record of reporting data is poor despite about US$15 million worth of ITTO expenditure in training workshops and capacity-building.

A central underlying concept of the ITTA is a commitment to the sustainable development of tropical forests, by encouraging and assisting the tropical timber industry and trade to manage and thus conserve the resource basis upon which they depend. The agreement’s ‘Year 2000 Objective’, enshrined in the 1994 text, aimed to ensure that all tropical timber and timber products traded internationally by member countries originate from sustainably managed sources by 2000. In light of this charge, the Bali Partnership Fund was established to assist producing countries in making the necessary investments to enhance their capacity to implement a strategy for meeting the 2000 target. The council and ITTO have also established a series of operational guidelines for achieving sustainable forest management, including a set of criteria and indicators against which the standard of management and progress towards sustainability can be assessed.

The ITTO and illegal logging

The ITTO has devoted some effort to dealing with the illegal logging issue. At the International Tropical Timber Council meeting on 29 October 2001, the executive director called on members to cooperate in protecting forests from illegal logging. He pledged ITTO to assist national efforts at prosecution and enforcement by providing data and analysis and assisting in putting in place measures to prevent illegalities. He proposed that the council consider authorising and financing case studies on illegal logging and the illegal timber trade, followed by an international seminar at which findings would be disclosed. If sufficient common elements were found in the problems and recommended solutions, guidelines on preventing illegal logging and illegal trade could be developed.

This work, however, was slow to start. No case studies have yet been completed, though some are underway. A series of studies on timber trade statistics has started, attempting to examine the large discrepancies between import and export data around the world and the extent to which these may be a result of illegal timber trade (i.e., undeclared at point of export). The first of these, dealing with the UK, was to report in March 2003. Of course, little can be concluded on an individual basis, and more-useful results will flow from cross-checking the results of the studies from importing and exporting countries.

Conclusions

As noted, the ITTA is renegotiated periodically. The current agreement, which was negotiated in 1994, will expire in 2006, and negotiations on a new ITTA are about to start. There are a

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13 ITTA Article 29, paragraph 2, instructs members to furnish ‘statistics and information on timber, its trade and the activities aimed at achieving sustainable management of timber-producing forests as well as other relevant information’. The council decides on the precise categories of information to be required.
number of possible options for strengthening the agreement to deal with the issue of illegal logging and trade in illegal timber.

- A stronger requirement to report export and import data for timber and timber products may be the function for which ITTO is best suited, but, as noted, its members’ record of reporting data is poor, even by the generally low standards of most international agreements. Spotty reporting is likely a consequence, at least in part, of the absence of any obvious disincentive for not reporting; if access to project funding, or perhaps voting rights at the council, were to be dependent on timely reporting, it should encourage countries to devote more effort to it.

- The new agreement could include text dealing explicitly with the issue of illegal trade. ITTO is well placed to carry out and discuss the kind of studies already underway, and possibly thereafter to develop guidelines for dealing with the problem, and a greater emphasis on the issue in the new text would help underpin this work. It would also be helpful if the current wording of Article 36 (‘Nothing in this Agreement authorises the use of measures to restrict or ban international trade in, and in particular as they concern imports of and utilisation of, timber and timber products.’) were modified explicitly to permit restrictions on the trade in illegal timber. Unless the agreement is to be used as a mechanism for implementing such restrictions, however, this potential rewording is somewhat academic.

6.1.3. Lessons from the Kimberley Process

The Kimberley Process on conflict diamonds\(^{14}\) came into operation on 1 January 2003. It was initiated by a number of southern African countries in the wake of the failure of UN Security Council sanctions, which included controls on the import of rough diamonds from Angola, Liberia, and Sierra Leone. The southern African countries decided in early 2000 to take action to stop the flow of conflict diamonds to the market while at the same time protecting the legitimate diamond industry. Unlike the rest of the agreements discussed in this section, the Kimberley Process is not a treaty that countries must ratify; it is simply an intergovernmental agreement to establish a certification scheme for rough diamonds.

The system revolves, like CITES, around the certification of exports. Producer countries control the production and transport of rough diamonds from mine to point of export. Shipments of rough diamonds are sealed in tamper-resistant containers and a forgery-resistant Kimberley Process certificate is issued for each shipment. Importing countries inspect the seal and the certificate at the time of import, and prohibit the import of rough diamonds not accompanied by a certificate issued by a Kimberley Process participant. Similarly, transit countries ensure that only rough diamonds accompanied by a Kimberley Process certificate are permitted to enter the chain of transactions from import to export. Imports from and exports to countries not participating in the process are prohibited, though it is expected that in due course all countries producing and trading rough diamonds will participate.

Participants undertake to establish internal systems to implement and enforce the certification scheme, including establishing suitable penalties for transgressions. The Kimberley Process recommends, amongst other things, that the names of individuals and companies convicted of breaches of the certification scheme be made known to all other

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\(^{14}\) The Kimberley Process defines ‘conflict diamonds’ as ‘rough diamonds used by rebel movements or their allies to finance conflict aimed at undermining legitimate governments, as described in relevant United Nations Security Council (UNSC) resolutions insofar as they remain in effect, or in other similar UNSC resolutions which may be adopted in the future, and as understood and recognized in United Nations General Assembly (UNGA) Resolution 55/56, or in other similar UNGA resolutions which may be adopted in future’ (Kimberley Process Certification Scheme Section 1; see www.kimberleyprocess.com).
participants. The diamond industry has undertaken to introduce a system of self-regulation to support the process, involving a system of warranties underpinned by the verification of individual companies by independent auditors and supported by internal penalties set by the industry.

Conclusions

There are obvious parallels between the aim of the Kimberley Process, to exclude conflict diamonds from the legitimate diamond trade, and moves to exclude illegally sourced timber from legal markets. There are also, of course, important differences: diamonds are traded in far lower volumes than timber, and they can be sealed in tamper-proof containers; the number of countries involved in major import and export of diamonds is lower; and the diamond industry is largely united, worldwide, on the desirability of the system.

Despite these differences, there are lessons that can be learnt from the Kimberley Process. Its inspection scheme for certificates is stricter than that of CITES or other MEAs\textsuperscript{15} and should avoid some of the weaknesses of CITES import and export permits. The co-option of the industry, including in particular the independent auditing of individual companies, is exceptionally helpful. And the sheer speed of action displayed by the international community on this issue (three years from beginnings to implementation is very fast in international terms) is a powerful demonstration of the ability to mobilise the political will to regulate, through certification, the entire global trade in an important traded commodity and to exclude illegal production from the marketplace.

6.1.4. Lessons from other environmental agreements

In addition to CITES, several multilateral environmental agreements have been agreed upon or drafted in order to impose various controls on international trade in cases where the unregulated trade was causing, or was likely to cause, significant environmental damage. The most relevant are:\textsuperscript{16}

- the Basel Convention on transboundary movements of hazardous wastes, which uses a system of ‘prior notification and consent’
- the Rotterdam Convention on hazardous chemicals and pesticides in international trade (not yet in force), which will establish a system of ‘prior informed consent’
- the Cartagena Protocol in biosafety (also not yet in force), which will establish a system of ‘advanced informed agreement’ to control the trade in genetically modified products
- the Montreal Protocol on ozone-depleting substances, which, while not primarily concerned with international trade, has adopted a system of import and export licences primarily in order to reduce illegal trade. (This protocol also contains bans of trade in the controlled substances with nonparties—and, potentially, noncomplying parties.)
- the International Convention for the Conservation of Atlantic Tunas (ICCAT) and the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), which are considered in more detail below.

The purpose of all these trade instruments is to establish a system in which exporting and importing countries (and, in some cases, countries of transit) have to agree to the trade taking place before it can proceed. Unregulated trade is therefore eliminated, or at least made more difficult. The various requirements for licences or permits accompanying the movement of the products being regulated also helps customs officers and other enforcement agents check whether the trade is proceeding legally.

\textsuperscript{15} Particularly in the EU, which is adopting more stringent requirements for monitoring trade.

\textsuperscript{16} About 20 of the more than 200 MEAs currently in existence contain trade measures (requirements, restrictions, or complete bans on trade).
Conclusions

The problems with CITES have been outlined above. Its reliance on paper certificates to accompany the traded goods in question opens up possibilities for fraud, theft, and corruption, and the permits are not adequately crosschecked against each other or against the goods they are accompanying. The Basel Convention suffers from similar problems: the vast majority of the illegal trade in hazardous waste is believed to involve falsified documentation, and hazardous waste can often be difficult to distinguish from nonhazardous waste (indeed, the two are sometimes deliberately mixed together). The export and import licences of the Montreal Protocol are generally regarded as helpful in controlling illegal trade, though there are many cases of ozone-depleting substances being shipped in mislabelled containers and without licences that will often pass through customs unmonitored. Any system for controlling any part of the international trade in timber therefore needs to avoid these problems—though timber is at least more difficult to hide or disguise than some CITES specimens or ozone-depleting substances.

6.1.5. Lessons from fisheries agreements

The problem of illegal fishing shares a number of characteristics with that of illegal logging. Fishing can be undertaken legally (and sustainably) but frequently is not, and the various forms of ‘illegal, unregulated and unreported’ (IUU) fishing are all exacerbating the current overexploitation of fish stocks around the world. No single global agreement governs fisheries management, but the UN Convention on the Law of the Sea (UNCLOS), which establishes 200-mile exclusive economic zones, and the UNCLOS Straddling Stocks Agreement (not yet in force) are both relevant. A number of important regional fisheries agreements are also in force, two of which are considered below.

Difficulties in controlling IUU fishing include nonsignatory states to the relevant conservation convention, ships flying flags of convenience to escape domestic controls, and the enormous difficulty of tracking illegal activities across a huge area of ocean. Misreporting of catches and retention of undersized fish or fish caught over the allowed quotas is common. The parallels with illegal logging are obvious, though there is a substantial difference between fisheries, where much illegal activity takes place in international waters and demands international cooperation, and forestry, where illegal activities take place on the sovereign territory of nations.

International Convention for the Conservation of Atlantic Tunas

The 1969 International Convention for the Conservation of Atlantic Tunas (ICCAT) is responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and adjacent seas. It regulates about 30 species, including bluefin and yellowfin tuna, albacore, blue marlin, swordfish, and various species of mackerel. It currently has 31 contracting parties.

In common with several other international agreements (see above), ICCAT uses trade measures as a means of enforcement. These are not specified in the text of the convention, but a number of resolutions of the parties—recommended by the Convention’s Compliance Committee—have contained trade restrictions. Parties have decided to ban imports of bluefin tuna, Atlantic swordfish, and products from three nonparties (Belize, Honduras, and Panama) and from one noncomplying party (Equatorial Guinea); a number of warnings have been issued to other countries. As a result, Panama has become a party and implemented
appropriate regulations. In an example of the flag of convenience problem, however, many vessels formerly registered in Belize, Honduras, or Panama and considered to be fishing illegally have now registered with other countries.

**Convention for the Conservation of Antarctic Marine Living Resources**

The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) was signed in 1980 and entered into force in 1982. It established a commission that oversees the implementation of the convention. All parties to the convention are entitled to join the commission, which currently has 24 members, out of a total of 31 parties. The commission sets policy on, and regulates, activities associated with the rational utilisation and management of marine living resources in the Southern Ocean.

As with ICCAT, the CCAMLR text does not contain trade measures, but parties have agreed to adopt some, notably a prohibition on parties allowing landing or transhipment of fish from the vessel of a non-party sighted fishing in CCAMLR-protected areas. Compliance with the conservation measures agreed upon by the parties is subject to an inspection process involving inspectors designated by members. Flag states are required to report to the CCAMLR Commission on prosecutions and sanctions imposed as a consequence of inspections conducted on vessels flying their flags. The Standing Committee on Observation and Inspection considers and prepares advice to the commission on all matters related to inspections undertaken and steps taken by members to enforce compliance.

The CCAMLR Catch Documentation Scheme for the Patagonian toothfish, a heavily (and frequently illegally) fished deep-sea species, became binding on all members in May 2000. The scheme is designed to track the landings and trade flows of toothfish caught in the convention area and, where possible, adjacent waters. CCAMLR members are required to ensure that all of their flagged vessels fishing for toothfish are specifically authorised to do so, and complete catch document forms for all catches landed or transhipped; document forms are not to be issued to nonauthorised ships.

Landings or transhipments of toothfish catches at CCAMLR members’ ports are permitted only if accompanied by a valid form, and any export or re-export of toothfish must also be accompanied by the form countersigned by a responsible government official. Customs authorities are to require appropriate documentation for any case of import or export. Nonmembers of CCAMLR are entitled to join the scheme if they fulfil the same requirements. The CCAMLR secretariat holds the central register of all completed catch documentation forms. The scheme has had a clear impact on the price of toothfish, with a 20%–30% price differential developing between illegal and legitimately caught fish (Agnew 2002).

**FAO International Plan of Action to Prevent, Deter and Eliminate IUU Fishing**

In the wake of growing concern over IUU fishing, in 2001 the Food and Agriculture Organisation (FAO) agreed upon an International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA on IUU fishing). This nonbinding series of measures contains a number of important elements that a series of cooperative controls on the timber trade could follow, including encouragement for

- the adoption of multilaterally agreed upon trade-related measures to prevent IUU fishing for specific fish stocks or species, including catch documentation and certification requirements, and import and export controls or prohibitions (paragraphs 68–69);
- ‘comprehensive and effective monitoring, control and surveillance of fishing from its commencement, through the point of landing, to final destination’, which, allied with a

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18 The catch document includes details of the issuing authority and the vessel, the weight of each toothfish species landed or transhipped, the areas and dates of the catch, and details of the landing or transhipment and the recipients of the catch.
vessel-monitoring system of satellite receivers and catch documentation schemes, amounts to chain-of-custody monitoring (paragraph 24);

• allowing the traceability of fish or fish products, assisting any other state in deterring trade in fish and fish products illegally harvested in their jurisdiction, and considering legislation that makes it a violation to conduct business or to trade in fish or fish products derived from IUU fishing (paragraphs 71–73); and

• measures to ensure that states’ fishers are aware of the detrimental effects of doing business with importers, transhippers, buyers, consumers, equipment suppliers, bankers, insurers and other services suppliers identified as doing business with vessels identified as engaged in IUU fishing, including legislation that makes it a violation to conduct such business.19

Conclusions
These regional fisheries agreements, and the FAO IPOA, have had to tackle similar problems as faced by those concerned about illegal logging. Several of the measures they incorporate—enforcement cooperation, trade measures against non-co-operating states, and in particular catch documentation schemes—could certainly apply to any putative agreements to prevent, deter, and eliminate illegal logging and the trade in illegally sourced timber.

6.2. Governance - and enforcement - related agreements and processes

6.2.1. Lessons from the Lusaka Agreement
The Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora was agreed upon in 1994 and entered into force in 1996. Its aim is to reduce and ultimately eliminate illegal trade in wildlife, and it currently has six parties.20 It is overseen by a governing council of ministers or their alternates.

The agreement’s core provision is the Lusaka Agreement Task Force (LATF), established in June 1999 and based in Nairobi in the headquarters of the Kenya Wildlife Service. It comprises a director, an intelligence officer, and several field officers, all seconded from national enforcement agencies (one of the parties’ commitments under the agreement is to second at least one member of staff), plus support staff. It works with national bureaux designated by the member countries, and its original activities involved establishing a database, intelligence-gathering and communications systems. It supplied cross-border intelligence to the national bureaux and also carried out training exercises for wildlife law enforcement officers.

As the task force gained in experience, however, it increasingly came to conduct cross-border operations of its own. LATF staff enjoy status equivalent to diplomatic immunity—including exemption from visa requirements and entry restrictions, immunity from arrest and detention, and so on—and thus can move relatively easily across borders. Its field officers retain national enforcement authority and can therefore make arrests in their own countries. Sometimes dubbed the ‘African Interpol for wildlife’, in fact its powers exceed those of Interpol, whose staff carry out similar intelligence-gathering and communications functions but have no direct enforcement role. The task force has scored a number of successes in recent months, including the seizure, in June 2002, of a large shipment (six tonnes) of ivory smuggled from Zambia to Singapore.

The Lusaka Agreement has not been without its problems. It took more time to establish the task force than had been anticipated, largely because funding from donors was slow to emerge. In the end, the LATF’s initial funding derived entirely from parties and in-kind grants (e.g., its headquarters). Donor funding from a number of governments, NGOs, and UNEP has now become available and is used for special operations, training, and equipment; parties

19 Para 74.
still provide the core funding. More seriously, the agreement has lacked a number of key participants. Disagreements amongst southern African countries over the resumption of the ivory trade meant that Botswana, Namibia, and Zimbabwe (all supporters of reopening the trade) did not participate in the negotiations, and South Africa, which did participate, has not yet ratified (though indications are emerging that it may soon).

Conclusions

Does the Lusaka Agreement provide a model for enforcement operations directed against illegal logging? In principle, it does. It displays most of the key characteristics one would expect of such an agreement: a coordination mechanism for participating countries, a means to gather intelligence; and an ability to conduct cross-border operations. Indeed, the text of the agreement could be copied almost word for word, substituting the word ‘timber’ for ‘wildlife’.

6.2.2. Forest Law Enforcement and Governance process

The World Bank’s Forest Governance Programme was launched in 2000, with an emphasis on working in partnership with governments, civil society, the private sector, and donor organisations. Partly stimulated by the G8 Action Programme on Forests, it began a Forest Law Enforcement and Governance (FLEG) process, initially in East Asia.

In September 2001, countries from East Asia and other regions (including Europe and the United States) participated in the FLEG ministerial conference in Bali, an initiative designed to establish a framework through which producer country governments could work with each other and with governments of consumer countries to tackle illegal activities in the region. The conference partly acted as a forum for the exchange of views and the dissemination of technical knowledge on a wide range of governance and enforcement issues. Participants included senior officials from forest and related ministries, NGOs, and industry representatives.

The Bali conference concluded with a ministerial declaration, which committed participating countries to, *inter alia*, ‘take immediate action to intensify national efforts, and to strengthen bilateral, regional and multilateral collaboration to address violations of forest law and forest crime, in particular illegal logging, associated illegal trade and corruption, and their negative effects on the rule of law.’ The declaration also dealt with the topic of trade in illegally logged timber, including a commitment to ‘explore ways in which the export and import of illegally harvested timber can be eliminated, including the possibility of a prior notification system for commercially traded timber’.

The conference established a regional task force to ‘advance the objectives’ of the declaration, and an advisory group of NGOs and industry was formed. Ministers agreed to meet again in 2003 to review progress. Both task force and advisory group had initial preparatory meetings in May 2002 and fuller meetings in January 2003. Progress could not exactly be described as rapid, but participants began to identify key priorities for activities, including nominating focal points in each country, and the collection and exchange of production and consumption data. The Indonesian Ministry of Forests and CIFOR volunteered to undertake interim secretariat functions, and it seems possible that a permanent secretariat may ultimately develop, should sufficient funding become available.

Conclusions

The FLEG commitments, if followed through, provide a preliminary framework for the

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22 Ibid., p. 2.
negotiation of regional agreements, initially in the East Asia region, concentrating on enforcement and governance. The collection and exchange of data could be a useful part of such an agreement, though care would need to be taken not to duplicate the work of ITTO and FAO in this regard. Probably more usefully, the agreements could provide the framework for the promotion and dissemination of examples of best practice, regional training initiatives and general networking, and possibly cross-border collaboration on enforcement (see the Lusaka Agreement).

6.3. Conclusions and recommendations

What would one want to see in an international or regional agreement to combat illegal logging? A number of components could be included, depending on the degree of agreement between the signatory parties:

A. A forum for debate, consciousness raising, information sharing, and exchange of best practice
B. A mechanism (together with associated resources) for capacity building and technology transfer
C. A data collection and exchange system, both on legal activities (production, processing, export, import, consumption) and, where detected, illegal behaviour
D. An international tracking and/or licensing system to guarantee legality, preferably not reliant simply on paper movement documents; ideally, with independent third-party monitoring
E. A framework for enforcement cooperation, including facilitation of cross-border enforcement operations (likely to work best at a regional level)
F. A noncompliance mechanism, probably incorporating trade measures as sanctions against noncomplying parties and (possibly) nonparties.

Clearly, no existing agreement contains all these elements, but there are examples of each one of them in one or more of the agreements and institutions considered in this section, as follows:

A. Forum for debate: mainly to be found in ITTO, UNFF, FAO, and the FLEG meetings and to a lesser extent in the CBD.
B. Capacity building: to a limited extent under ITTO and FAO; the FLEG conferences themselves represent a degree of capacity building and, if they develop into permanent regional agreements, might provide an appropriate framework.
C. Data collection and exchange: again to a limited and imperfect extent, under ITTO and, to a degree, FAO. The FLEG process once again provides a possible framework for enhanced data exchange. No organisation collects information systematically on the extent of illegal activities.
D. International tracking and/or licensing system: exists only in CITES, and only for a limited number of timber species. Examples outside timber include several MEAs, the Kimberley Process (which should come to include third-party monitoring) and CCAMLR’s Catch Documentation Scheme, which may come to be encouraged, through the FAO’s IPOA on IUU fishing, for other species and areas.
E. Framework for enforcement cooperation: the only example considered here is the Lusaka Agreement; the FLEG processes may provide a suitable setting in which this could be emulated.
F. Noncompliance mechanism: CITES has used trade measures quite successfully to encourage compliance and participation, as have other MEAs such as the Montreal Protocol, ICCAT, and CCAMLR.
Trade measures can be a significant component of a strategy aimed at controlling illegal forest activities, and they are certainly one of the most important policy measures that consumer countries can implement. Therefore, this section sketches the global timber trade situation and derives some implications concerning the potential effectiveness of trade measures and for a global strategy to control illegal forest activities.

*Consumer country trade measures* may be aimed at reducing illegal trade and creating market incentives for legal products. Thus, they directly affect only illegal trade, while impacting indirectly on illegal logging. Illegal logging will be reduced only if trade measures result in a complete closure of market opportunities for the timber harvested illegally in both the international market and the producer country, and if a change in land use of the area where the timber is sourced is not beneficial (otherwise the forest may be cleared anyway). The creation of market incentives results in a decrease of illegal logging and illegal trade only if alternative markets for illegal products do not exist, because the new market opportunities could be filled by legally sourced timber while illegal timber could be redirected to alternative markets.

### 7.1. Timber production and trade patterns

A summary of trade patterns relating to producer countries in Africa and Asia in 2000 and their trading partners is presented below.

The ratio of timber product exports relative to production is an indicator of the potential aggregate impact of trade measures on the illegal logging activities in a producer country; the lower the share of exports to total production, the lower the expected reduction in illegal logging resulting from trade measures. A flaw in this measure, however, is that illegal (nondeclared) exports are unaccounted for, whereas in some cases illegal trade can be a rather significant share of total production.

The distribution of exports to partner countries is an indicator of the possible impact of trade restrictions and incentives implemented by consumer countries; the higher the share of total exports, the higher the impact a consumer country can have. A caveat similar to the one noted above regarding undeclared products applies here.

Caution needs to be taken in using the analysis presented here. First, there are inaccuracies in the data available through the FAOSTAT database (as a result of lack of, or gaps in, reporting by individual countries). These discrepancies in the data are evident from the fact that, in some cases, the ratio of domestic production exported to total production is above 100%. Second, because of time constraints, no attempt was made to assess the ratio of total roundwood equivalent export to total roundwood production, which would be the most appropriate measure to assess the significance of export markets relative to total
production. Third, the impacts of trade measures are dynamic and need to be modelled over time. Therefore, considering trade patterns at a given point in time is only a rough and indicative way of establishing potential impacts of trade measures. To assess these impacts more accurately, a dynamic trade model is required.

7.1.1. Asia
The ratio of export to total production varies considerably among products and among countries. For the year 2000, with regard to the larger countries, we found the following.
• Indonesia officially exports limited amounts of roundwood (4.8%), while the share of export to production is relatively significant for sawnwood (22.2%), plywood (62.8%), woodpulp (37.4%), newsprint (64.77%), and paper (36.8%).
• Malaysia exports a large share of roundwood (45.3%) sawnwood (45.9%), and plywood (77.1%), with lower newsprint (16.4%) and paper (18.17%) export ratios.
• Papua New Guinea exports 62.9% of its roundwood.
• The Russian Federation exports a good share of roundwood (29.1%), plywood (65.6%), woodpulp (28.2%), newsprint (67.1%), and paper (30.8%), with a lower ratio for sawnwood (15.4%).
• China has the lowest export ratios: roundwood (0.8%), sawnwood (16.3%), plywood (10.3%), woodpulp (1.4%), and paper (10.6%).

In relation to the distribution of exports, it is obvious that the most significant share of exports from Asian countries goes to other Asian countries, China being the most significant importer followed by Japan. The Russian Federation is the only country with a significant share of exports going to Europe.

7.1.2. Africa
African countries produce less processed products than Asian countries. Their production and exports are mainly concentrated on roundwood and, to a lesser degree, on sawnwood. The ratios of export to total production for the larger countries are as follows.
• Cameroon: roundwood (47%), sawnwood (85%)
• Central African Republic: roundwood (25%), sawnwood (65%)
• Congo: roundwood (24%), sawnwood (75%)
• Gabon: roundwood (100%) sawnwood (90%)
• Ghana: sawnwood (65%), veneer (45%) (data for roundwood missing).

African countries export mainly to Europe, with some exceptions. Cameroon exports 38.8% of its roundwood to Asia (26.8% of which goes to China), and Gabon exports 75.4% of its roundwood to Asia (68.1% of which goes to China).

7.2. Implications for strategies to reduce illegal forest activities
Five major implications arise from the analysis of trade patterns.
• Most of the trade in Asian timber products takes place within Asia. Therefore, only trade measures adopted by Asian countries are likely to have significant effects on illegal trade from Asia.
• European trade measures are more likely to have an impact on illegal trade from Africa. Given the already significant share of exports from Africa to China, it remains to be seen whether the adoption of trade measures by Europe would result in a shift in trade towards Asia (if it does not adopt equivalent measures).
• The impact of trade measures on illegal logging is difficult to gauge at this stage given the limited information available. It is clear, however, that African countries have much higher export ratios than Asian countries. Therefore, trade measures are more likely to reduce
illegal logging in Africa than in Asia.

• A chain-of-custody system is probably easier to implement for timber products from Africa than from Asia. Asian countries export processed products, and the market chain is therefore longer.

• In terms of prioritisation of policies to reduce illegal logging, trade-related initiatives appear to be a good investment in Africa. They have less potential in Asia as export ratios are lower. In Asia, the policy options that have the most direct impacts on illegal logging, i.e., the ones to be adopted by producer countries, need to receive significant attention. This, of course, does imply that Asian consumer countries should not work on trade measures as they can certainly have an impact.
8.1. Principles and criteria for evaluating alternative options

The previous sections have presented a vast array of possible policy responses to illegal forest practices. Such multiplicity reflects the complex context in which illegal forest practices occur and the extreme diversity of forest sectors in different countries. As a consequence, it is impossible to recommend specific actions that can be carried out indiscriminately. Specific actions will need to be preceded by a careful assessment of local conditions.

In the following sections, we suggest a preliminary set of principles that can be used to orient progress towards an enabling policy environment. We then present some criteria and sequencing steps that can be used both to aid in the selection of possible alternatives and to guide their assessment as well as to progress in the implementation.

8.1.1. Principles

Reform efforts should proceed with input from all the important stakeholders. Stakeholders’ involvement is necessary and desirable for various reasons. First, it can provide critical information and insights for the clear understanding of the problem, the players, the options available, and their feasibility. Second, while it may be tempting to exclude some players, it is critical to recognise that without their support some reform efforts are doomed to fail. If you know you will eventually need them, it is better to involve them earlier rather than later.

Property rights of forests must be clarified and resolved. Illegal logging activities are, first and foremost, a form of theft of public (and private) resources for private gain. It is therefore inevitable that most actions aiming at reducing illegal forest activities will rest on a definition of what belongs to whom. Where such a definition is still vague or unresolved (as in the case of many indigenous territories), implementation of measures to reduce illegal logging may have unexpected consequences.

Streamline the policy and regulatory framework. Many policies and regulations should be simplified, made clearer and more transparent. They should set realistic, achievable goals and be forward looking, seeking to shape expectations in a positive economic and environmental direction. They should be designed in such a way that their implementation leaves little unnecessary room for discretion and for arbitrary interpretation. New policies should not create further uncertainty: they should be introduced in a foreseeable and gradual way and be consistently applied to domestic and international actors alike. Finally, they should make economic sense (more on this below).

Divest certain functions to the private sector, NGOs, civil society, and local governments. While public institutions clearly have the mandate to set the rules of the game, many functions currently carried out by public officials could more effectively and efficiently be carried out by other players.
Promote integration and coordination with other sectors and with other players, both national and international. Bureaucratic gridlock and overlapping and conflicting jurisdictions should be minimised. Processes should be set in place to deal with inevitable disagreements and conflicts. Efforts among producer and consumer countries should be coordinated, particularly in sharing economic intelligence.

8.1.2. Criteria

Criteria are the essential evaluative elements of an intervention strategy. Within a single criterion, several indicators can be used to measure and evaluate the degree to which a given criterion is being advanced. We suggest here a set of criteria that, in our opinion, should be considered when evaluating a possible intervention to reduce illegal forest activities.

*Clarity.* Does the new policy work in a clear and transparent way for all the actors? Is it based on information that is accessible to the public? How much room for interpretation does it leave? To whom?

*Economic efficiency.* Will society be better off with the new policy? If so, will the option achieve the desired objective at the lowest possible cost to society (cost effectiveness)? Answering this question requires a realistic assessment of the direct and indirect costs of adopting the measure as well as an assessment of its direct and indirect impacts. Is it flexible enough to adapt to changes in technologies or market conditions?

*Effectiveness.* Will the new policy achieve the desired outcome within a specified time horizon? What degree of certainty can be expected?

*Equity.* Will the costs and benefits of the proposed policy fall disproportionately on limited groups? Will the policy motivate all those interested in better forest management or is it designed to favour specific actors?

*Acceptability.* Is the option considered understandable and broadly acceptable by the public and by at least some part of the private sector? Does it reflect some agreement among the various actors? Some level of industry acceptance is critical if enforcement capacity is limited.

*Motivating.* Does the new policy modify the behaviour of operators towards a desired direction by motivating or by punishing them? Is there a good balance between stick and carrot?

*Institutional parsimony.* Does the policy require new bureaucracy?

*Exploits synergies.* Does it integrate international initiatives with reforms in producer countries? Initiatives that aim at limiting the flow of illegal forest products by affecting international trade will need to be integrated with initiatives in producer countries. The majority of international buyers are still largely indifferent to the process by which timber is produced (i.e., whether it is produced sustainably or not). Therefore, they will choose to purchase timber labelled as legal only if it had the same price (or quality, quantity, or service) of undifferentiated timber.

*Consistency with own priorities.* Different intervention strategies will have different impacts on various dimensions: livelihoods, governance, economic growth, protection of the environment (see Table 2). Different policy options will have different impacts on livelihood indicators. If, for example, the reduction of poverty is a donor’s priority, it will become an important evaluative criterion.

8.1.3. Initial sequencing steps

**How should one proceed?**

*Pick the reformers.* Identify the reform minded and interested early in process to involve them in problem analysis and development of options. They will have to be the champions of change.
Comprehensive diagnosis of the problem. The diagnosis should consider at least the perceived impacts (including distribution among stakeholders), assess the underlying market, governance, and legislative causes, assess the possible links between the causes, and define the objectives to be achieved.

Consider all available options creatively and match response to underlying cause. Matching the policy option to the underlying cause of the problem is of fundamental importance to prevent ineffectiveness, in a best-case scenario, or even negative impacts, in a worse case scenario, such as significant negative impacts on livelihoods if households depend considerably on illegal activities. Avoid the ‘When all you have is a hammer, everything looks like a nail’ mindset. Ideally, structural problems are met by structural reform, but this strategy may not always be possible. Technical options could open up the process of reforms, but the risks of ineffectiveness are high.

Pursue no-regrets policies first. Efforts to address illegal logging are being considered for various reasons from environmental protection, to improving livelihoods, to economic growth, among others. While some measures involve inherent trade-offs, some do not. ‘No-regrets’ interventions may be pursued first. This approach would also help in initial broader acceptance of reform efforts.

8.2. Concluding comments

The existence of illegal forest activities is a serious threat to sustainable development in many countries. The severity of the problem is estimated in billions of dollars of public resources lost to private gain, environmental degradation, worsening governance, and possibly increased poverty and social conflict.

What this report has shown is that this problem is a very complex one, one that is more symptomatic of governance, legislative, and market weaknesses and deficiencies than of criminal attitudes of selected individuals. Any successful strategy to address illegal forest activities will need to take into account these underlying causes.

For these reasons, the most significant actions to address illegal forest activities will need to be taken by producer countries, as they can directly affect illegal forest activities, and particularly illegal logging. Also, it is only in producer countries that appropriate reforms can be undertaken to ensure that rural communities are not negatively affected, but rather benefit from initiatives aimed at improving the management of forests.

Consumer countries can, of course, also play significant roles that range from supporting further reform processes, to providing technical assistance, to exchanging data and other economic intelligence, to introducing legislation that limits the import of illegal forest products and facilitates trade in legal forest products.

Yet, there are aspects of illegal forest activities that remain unclear. For example, which violations, among the numerous types, are the most serious? Which ones are causing the most economic losses, the most environmental losses, the most governance and social losses? Which ones should be tackled first? And how? Unfortunately, rigorous inquiries into these questions are still lacking.
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Appendix I: Requirements for SFM

Source: Higman et al. 1999

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Practice</th>
<th>From</th>
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</thead>
<tbody>
<tr>
<td>1. Legal and policy framework</td>
<td></td>
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<tr>
<td>1.1 Compliance with legislation and regulation</td>
<td>Compliance with local and national regulations</td>
<td>FSC (expl. ITTO)</td>
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<td></td>
<td>Compliance with applicable international agreements</td>
<td>FSC (expl. ITTO)</td>
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<td></td>
<td>Payment of all charges, fees, and royalties</td>
<td>FSC, ITTO</td>
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<tr>
<td>1.2 Tenure and use rights</td>
<td>Long-term rights to manage the forest resource</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Recognise and respect local communities’ legal or customary rights</td>
<td>FSC, ITTO</td>
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<td>1.3 Forest organisation’s commitment and policy</td>
<td>Reinvest part of the financial benefits from forest management in maintaining SFM</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Demonstrate long-term commitment to SFM</td>
<td>FSC</td>
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<tr>
<td>2. Sustained and optimal production of forest products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Management planning</td>
<td>Undertake management planning at appropriate levels</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Periodically revise management plan</td>
<td>FSC</td>
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<td></td>
<td>Make summary of management plan publicly available</td>
<td>FSC</td>
</tr>
<tr>
<td>2.2 Sustained yields of forest products</td>
<td>Set harvest rates at sustainable levels</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Collect data defining sustainable production levels</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Adopt a reliable method of controlling yield. Where data are unreliable, set production levels conservatively</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Maintain records of actual production levels of wood and non-wood products</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Periodically revise yield levels</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Document and justify the choice of silvicultural system</td>
<td>FSC, ITTO</td>
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<td>Properly supervise all harvesting operations and silvicultural prescriptions</td>
<td>FSC, ITTO</td>
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<tr>
<td>2.3 Monitoring</td>
<td>Monitor environmental, financial, and social effects of operations</td>
<td>FSC, ITTO</td>
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<td>Carry out post-harvest assessments</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Make summary of monitoring information publicly available</td>
<td>FSC</td>
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<tr>
<td>Requirement</td>
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<td>2.4 Protection of the forest resource</td>
<td>Protect forest from illegal harvesting, encroachment, and activities incompatible with SFM</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Control inappropriate hunting, fishing, trapping, and collecting</td>
<td>FSC, ITTO</td>
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<td>Establish a fire management plan and warning systems for the forest organisation</td>
<td>FSC, ITTO</td>
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<td>2.5 Optimising benefits from the forest</td>
<td>Ensure forest management is economically viable, taking into account full environmental and social costs</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Safeguard multiple benefits of forests during all operations</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Encourage optimal use</td>
<td>FSC</td>
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<tr>
<td></td>
<td>Encourage local processing</td>
<td>FSC</td>
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<tr>
<td>3. Protecting the environment</td>
<td>ESIA should be carried out prior to site-disturbing operations</td>
<td>FSC, ITTO</td>
</tr>
<tr>
<td>3.1 Environmental and social impact assessment (ESIA)</td>
<td>ESIA results must be integrated into management operations</td>
<td>FSC, ITTO</td>
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<tr>
<td>3.2 Conservation of biodiversity</td>
<td>Conserve diversity at genetic, species, and ecosystem levels</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Establish conservation zones and protected areas, including representative examples of existing ecosystems</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Ensure safeguards exist to protect rare, threatened, and endangered species and their habitats</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Genetically modified organisms must not be used</td>
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<td></td>
<td>Trees planted in natural forests must not significantly alter the natural ecosystem</td>
<td>FSC</td>
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<tr>
<td></td>
<td>Primary forests and well-developed secondary forests must not be replaced by tree plantations or other land uses</td>
<td>FSC</td>
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<tr>
<td>3.3 Ecological sustainability</td>
<td>Maintain processes of forest regeneration, succession, and natural cycles</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Develop and implement guidelines for the identification and protection of sensitive soil and water resources</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Prepare and implement written guidelines for road construction and use</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Develop and implement reduced impact harvesting and extraction guidelines</td>
<td>FSC, ITTO</td>
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<tr>
<td>3.4 Use of chemicals</td>
<td>Minimise chemical use and adopt integrated pest management</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Implement procedures for handling, storage, and disposal of chemicals</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Provide adequate training and equipment for use of chemicals</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Special restrictions must apply to use of chemicals in sensitive areas</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Recognised dangerous and banned chemicals must not be used</td>
<td>FSC</td>
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<tr>
<td></td>
<td>Document, monitor, strictly control, and minimise use of biological control agents</td>
<td>FSC</td>
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<tr>
<td>3.5 Waste management</td>
<td>Dispose of all waste properly, off-site where appropriate</td>
<td>FSC</td>
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<tr>
<td></td>
<td>Minimise waste from harvesting</td>
<td>FSC</td>
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<tr>
<td>Requirement</td>
<td>Practice</td>
<td>From</td>
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<tr>
<td>4.1 Consultation and participation processes</td>
<td>Maintain consultations and encourage participation by people and groups affected by forest operations</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Employ appropriate mechanisms for resolving grievances and providing compensation</td>
<td>FSC</td>
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<tr>
<td>4.2 Social impact assessment</td>
<td>Carry out social impact assessment and incorporate results into management planning</td>
<td>FSC, ITTO</td>
</tr>
<tr>
<td></td>
<td>Take measures to avoid possible negative social impacts</td>
<td>FSC, ITTO</td>
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<tr>
<td>4.3 Recognition of rights and culture</td>
<td>Recognise and uphold legal and customary rights of local and indigenous communities to control management on their lands</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Identify and protect sites of special cultural, ecological, economic, or spiritual significance to indigenous peoples</td>
<td>FSC, ITTO</td>
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<td></td>
<td>Compensate indigenous peoples for the application of their traditional knowledge</td>
<td>FSC</td>
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<tr>
<td>4.4 Relations with employees</td>
<td>Meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Provide adequate training for all staff</td>
<td>FSC, ITTO</td>
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<tr>
<td></td>
<td>Provide communities in or near the forest operation with opportunities for employment and training</td>
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<tr>
<td></td>
<td>Guarantee the rights of workers to organise and negotiate</td>
<td>FSC</td>
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<tr>
<td>4.5 Contribution to development</td>
<td>Contribute to an equitable distribution of benefits, costs, and incentives of forest management</td>
<td>FSC, ITTO</td>
</tr>
<tr>
<td></td>
<td>Strive to strengthen and diversify the local economy</td>
<td>FSC</td>
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</tbody>
</table>
Appendix II: Summary of Causes of Illegal Forest Activities and Policy Options

Table A2.1. Producer country: causes of illegal forest activities and policy options

<table>
<thead>
<tr>
<th>Causes</th>
<th>Policies</th>
<th>Policy Type; Timescale*</th>
<th>Impactsa</th>
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<td></td>
<td></td>
<td>Gov</td>
<td>Liv</td>
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<td>Market</td>
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<tr>
<td>Forests not economically superior (even</td>
<td>• Revise legislation to allow land use change where consistent with</td>
<td>Le, Se; M</td>
<td>I</td>
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<td>including services)</td>
<td>sustainable development</td>
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<tr>
<td>Market and nonmarket subsidies to forest</td>
<td>• Assess and eventually reduce subsidies</td>
<td>Ma, ExS; M</td>
<td>I</td>
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<tr>
<td>industries</td>
<td>• Legislation for closure of businesses using illegal products and</td>
<td>Le, ExSe; M</td>
<td>I</td>
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<tr>
<td></td>
<td>illegal businesses</td>
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<td></td>
<td>• Monitor timber processing activities</td>
<td>Te, Se; Sh</td>
<td>I</td>
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<tr>
<td>Market and nonmarket subsidies to other</td>
<td>• Assess and eventually reduce subsidies</td>
<td>Te, Le, Se; M</td>
<td>I(+/-)</td>
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<td>land use sectors</td>
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<tr>
<td>Resistance to change</td>
<td>• Increase awareness of benefits and costs</td>
<td>Te, Se; Sh–M</td>
<td>I</td>
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<td></td>
<td>• Increase monitoring, enforcement efforts</td>
<td>Te, ExS; Sh–M</td>
<td>I</td>
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<tr>
<td></td>
<td>• Voluntary industry code of conduct against crime and corruption</td>
<td>Te, ExS; Sh</td>
<td>I</td>
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<tr>
<td>Forests economically viable but lack</td>
<td>• Revise forestry tax policy</td>
<td>Le, Se; M</td>
<td>I(+/-)</td>
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<tr>
<td>incentives</td>
<td>• Promote payments for environmental services</td>
<td>Ma, Se; Sh</td>
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<tr>
<td></td>
<td>• Promote certification</td>
<td>Te, Se; M</td>
<td>I</td>
</tr>
</tbody>
</table>
### Table A2.1. Producer country: causes of illegal forest activities and policy options (continued)

<table>
<thead>
<tr>
<th>Causes</th>
<th>Policies</th>
<th>Policy Type; Timescale*</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Governance</strong></td>
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<tr>
<td>State is weak</td>
<td>• Strengthen, reform tax system</td>
<td>STR, ExS; M–L</td>
<td>D</td>
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<tr>
<td>Lack of transparency and accountability</td>
<td>• Institutionalise transparent decision making systems and accountability reporting</td>
<td>STR, ExS, Se; M</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>• Anticorruption legislation and codes of ethics</td>
<td>LE, ExS; M</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>• Greater reliance on market-based mechanisms (e.g., auctions)</td>
<td>Le, Se; M</td>
<td>D</td>
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<tr>
<td>Lack of stakeholders’ input</td>
<td>• Develop public consultation and involvement processes</td>
<td>Str, Se; M</td>
<td>D</td>
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<td>Lack of funding for political activities and guidelines</td>
<td>• Consider public funding</td>
<td>Le, ExS; M</td>
<td>D</td>
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<td></td>
<td>• Develop guidelines and reporting mechanisms</td>
<td>Te, ExS; M</td>
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<tr>
<td>Security forces involved in illegal forest activities</td>
<td>• Reform security forces</td>
<td>Str, ExS; M–L</td>
<td>D</td>
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<td></td>
<td>• Increase funds to security forces and salaries</td>
<td>Le, ExS; M</td>
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<tr>
<td>Judiciary is corrupt and/or weak</td>
<td>• Reform judiciary, increase salaries</td>
<td>Str, ExS; M–L</td>
<td>D</td>
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<td></td>
<td>• Strengthen judiciary to deal with forestry crimes</td>
<td>Te, ExS; Sh–M</td>
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<tr>
<td>Organisational structure of the public service favours corrupt activities</td>
<td>• Reform of the public service</td>
<td>Str, ExS; M–L</td>
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<tr>
<td>Unclear allocation of competencies over forest</td>
<td>• Clarify competencies of agencies</td>
<td>Le, Se; M</td>
<td>D</td>
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<tr>
<td></td>
<td>• Establish clear and transparent process to deal with interagency disagreements</td>
<td>Le, ExS; M–L</td>
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<tr>
<td>Indigenous rights are not recognised or respected</td>
<td>• Establish a process to assess and recognise indigenous claims</td>
<td>St, ExS; M–L</td>
<td>D</td>
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<tr>
<td>Land tenure contested</td>
<td>• Review and reform land tenure system</td>
<td>St, ExS; M–L</td>
<td>D</td>
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<td></td>
<td>• Increase security of tenure, e.g., with long-term leases</td>
<td>St, ExS; M</td>
<td>D</td>
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<td></td>
<td>• Increase community involvement in protected areas, pay for environmental services</td>
<td>Le, Se; Sh–M</td>
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</tbody>
</table>
Table A2.1. Producer country: causes of illegal forest activities and policy options (continued)

<table>
<thead>
<tr>
<th>Causes</th>
<th>Policies</th>
<th>Policy Type; Timescale*</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislative</td>
<td></td>
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<tr>
<td>Conflicting legislation hinders recognition and suppression of illegal activities</td>
<td>• Establish clear criteria and indicators to define ‘legal’ products</td>
<td>Le, ExS; M</td>
<td>D</td>
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<td></td>
<td>• Consider chain of custody</td>
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<td></td>
<td>• Establish clear criteria for law implementation (e.g., random audits)</td>
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<td></td>
<td>• Favour market-based, performance-based solutions over bureaucratic ones</td>
<td>D</td>
<td>I</td>
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<tr>
<td></td>
<td>• Revise existing legislation to reduce overambitious goals and unnecessary prescriptions</td>
<td>I</td>
<td>I</td>
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<tr>
<td>Legislation discriminates against livelihood and small-scale uses</td>
<td>• More research is needed</td>
<td>Te, ExS; Sh</td>
<td>I</td>
</tr>
<tr>
<td>Transport and trade regulations are complex, unclear, difficult to enforce</td>
<td>• Streamline bureaucratic requirements</td>
<td>Le, Se, ExS; M</td>
<td>D</td>
</tr>
<tr>
<td>Money-laundering legislation lacking or weak</td>
<td>• Introduce or revise money laundering legislation</td>
<td>Le, ExS; M</td>
<td>D</td>
</tr>
<tr>
<td>Financial and tax laws complex, no clear provisions for transparent practices</td>
<td>• Clear and enforceable taxation system</td>
<td>Le, ExS; M</td>
<td>I</td>
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<tr>
<td></td>
<td>• Financial and tax intelligence units</td>
<td>Le, ExS; Sh–M</td>
<td>I</td>
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<tr>
<td></td>
<td>• Due diligence guidelines</td>
<td>Te, ExS; Sh</td>
<td>I</td>
</tr>
<tr>
<td>Penalties for illegal activities too low</td>
<td>• Increase penalties to appropriate levels</td>
<td>Le, ExS; Sh</td>
<td>D</td>
</tr>
</tbody>
</table>
### Table A2.1. Producer country: causes of illegal forest activities and policy options (continued)

<table>
<thead>
<tr>
<th>Causes</th>
<th>Policies</th>
<th>Policy Type; Timescale*</th>
<th>Impacts</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Gov Liv IL IT IF SFM</td>
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<tr>
<td><strong>Capacity and technical</strong></td>
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<tr>
<td>Imbalance between government claim and its capacity to administer</td>
<td>• Divest and devolve certain control functions to private sector and NGOs</td>
<td>Str, ExS; M–L</td>
<td>D I D D I</td>
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<tr>
<td></td>
<td>• Provide incentives for voluntary compliance</td>
<td>D I D D I</td>
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<tr>
<td>Underfunded and understaffed forestry departments</td>
<td>• Adopt more cost-effective systems (e.g., market based)</td>
<td>Te, Se; Sh–M</td>
<td>D D D D</td>
</tr>
<tr>
<td></td>
<td>• Invest in capacity of departments proportionally to the value added they generate</td>
<td>Te, Se; Sh</td>
<td>D D D D</td>
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<td></td>
<td>• Market intelligence units, data sharing</td>
<td>I D D D</td>
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<tr>
<td>Various regulations require different enforcement capacities</td>
<td>• Provide for extensive double-checks</td>
<td>Te, Se; M</td>
<td>D D D</td>
</tr>
<tr>
<td>Underfunded and understaffed customs department</td>
<td>• Invest in capacity of departments proportionally to the value added they generate</td>
<td>Te, ExS; Sh–M</td>
<td>D D I</td>
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<td></td>
<td>• Data exchange with consumer countries</td>
<td>Te, ExS; Sh</td>
<td>D D</td>
</tr>
<tr>
<td>Identification of illegal products difficult</td>
<td>• Chain of custody, certificate of legal compliance, log tracking, technological innovations</td>
<td>Te, Se; Sh–M</td>
<td>D D I</td>
</tr>
</tbody>
</table>

* Str: structural; Le: legislative; Te: technical; Sh: short term, 1–3 years; M: medium term, 3–5 years; L: long term, >5 years.

# Gov: governance; Liv: livelihoods; IL: illegal logging; IT: illegal trade; IF: illegal finance; I: indirect impact; D: direct impact.
This study examines the range of national and international policy options available to reduce illegal forest activities. Illegal forest activities include a broad array of legal violations that range from violating ownership and use rights to engaging in corrupt relationships, activities at all stages of the forest production chain. Illegal forest activities pose a significant threat to the sustainability of forest ecosystems. The study presents an overview of the symptomatic manifestations of illegal forest activities and a simple framework to understand the problem. In this framework we lay out that profit and income maximization are key aspects of the economic behavior of firms and individuals. Illegal behavior is more likely when the benefits derived from violating the law exceed the costs of non-compliance. In large part, the policy options presented consist of measures that reduce the economic rewards from illegal behavior, either by increasing the rewards of compliance, or by increasing the costs of non-compliance. The report concludes by presenting principles, criteria, and initial sequencing steps to aid the development of appropriate policy options to reduce illegal forest activities.