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The illegal trade in timber and timber products in the Asia–Pacific region

Andreas Schloenhardt

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Director's introduction

The high demand for timber and timber products around the world has led to large-scale illegal logging operations throughout the Asia-Pacific region, as illegal timber is considerably cheaper than legally harvested timber. It accelerates destruction of forest resources, impacts negatively on biodiversity, and causes deforestation and desertification as well as other environmental degradation. The economic impact of the illegal trade is considerable. There is loss of revenue and taxes in many countries, and estimates of global market losses of US\$10b per year. The illicit trade in timber is undertaken by sophisticated organisations on an industrial scale, and involves large companies as well as criminal networks.

While policy exists to curtail international trade in illegal timber, increasingly sophisticated measures are necessary to track clandestine trafficking, obtaining fraudulent documents and bribing of government officials. Initiatives against illegal logging in the United States and Australia aim to identify and reduce threats to forests, and to garner support from international and nongovernment organisations. Scholarly literature to date has focused on environmental issues generally, with some nongovernment and intergovernmental organisations providing information on illegal logging. Consequently, there has been no comprehensive academic analysis of the operational patterns of trade in illegally sourced timber.

This study analyses the scale of the illegal timber trade in the Asia-Pacific region. It outlines the process and *modi operandi* of the illegal timber trade, evaluating current trends in the logging, sourcing, trafficking, manufacturing, importing and consumption of illegal timber and timber products. The study examines the role that organised criminal networks and legitimate businesses play in this illicit market. On a country-by-country basis, the legal and regulatory mechanisms to prevent and suppress the trade in illegally sourced timber in the Asia-Pacific region are examined, as well as the role of international and regional organisations in this field. Examination of timber resources, the extent of illegal logging, policies and legislation, and enforcement initiatives provides an overview of the effectiveness of legislative frameworks that suppress trade at domestic, regional and international levels. The resulting analysis reveals widespread activity, associated with logging, processing and consumption of illicitly obtained timber.

Few countries have strategies to prevent and suppress illegal trade, and no international law exists to address the problem. Policies and regulations are needed to strengthen regional and international cooperation, with the aim of resolving sovereignty issues, sharing intelligence and developing standards between source, transit and destination countries. New international mechanisms, based on those under the Convention on the International Trade in Endangered Species (CITES), would assist in curtailing the import and export of illegal timber. Consistency in domestic legislation needs to be achieved by establishing universal definitions, and loopholes in existing laws closed. The points at which criminality

occurs in the commodity chain – from source to manufacturing and transit points, importation and consumption – need to be identified to determine weaknesses in governance, laws, policies and enforcement. Developing more extensive documentation and paper trails that link raw timber with finished products would certify the legitimacy of the production processes. Electronic certification systems would facilitate information sharing and intelligence collection, particularly for importation. Raising awareness among consumers would also help reduce the illegal trade. Follow-up research is needed that analyses the causes of the trade, its economic dimensions and legal frameworks to facilitate formulation of comprehensive policies.

Toni Makkai
Director
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Executive summary

Trade in illegal timber throughout the Asia-Pacific region is suppressed to an extent by international policy, primarily the Convention on International Trade in Endangered Species (CITES). While not specifically focusing on timber, CITES has some effective mechanisms and prosecution powers – albeit limited – that regulate the import and export of illegal timber and timber products if they are listed as ‘endangered’. However, there are inconsistencies and loopholes in policies and regulations at domestic, regional and national levels of Asia-Pacific countries that perpetuate this illegal trade.

Recognising these shortcomings in current practices, laws and policies, there is a need for increasingly sophisticated measures to monitor activities in clandestine trafficking, obtaining fraudulent documents, and corruption and bribery at all levels of government among other concerns. Australia and the United States have instigated policies against illegal logging in their countries, which reduce threats to forests and obtain cooperative support of government and nongovernment organisations. It is recognised, though, that greater effort is required at the source of the illegal trade in the Asia-Pacific region. There is a paucity of information regarding the extent of the illegal timber trade in the region, which reflects on the lack of coordinated policies and strategies for managing the problem.

A review of international frameworks covering laws, international organisations and regional conventions reveals that:

- despite the vast array of documents, treaties, agreements and organisations relating to illegal trade in timber, there is no one mechanism specifically designed to suppress illegal logging and illicit trade
- the existing international legal and institutional framework is devoid of enforceable mechanisms
- there are no penalties and sanctions for countries that exploit timber resources unsustainably
- many countries are reluctant to adhere to the principles of environmental law and do not contribute to forest protection, particularly smaller nations with limited economic and human resources.

Recommendations to address these issues include strengthening the adoption of CITES in the region and developing the Forest Law Enforcement and Governance forum of East Asia. Regional frameworks must be supported by practical cross-border cooperation between law enforcement, customs and forestry officials concerning intelligence sharing, joint training and interagency communication.

Examination of the key sources of illegal timber revealed that those countries with the greatest natural forest resources also had the highest levels of illegal logging. Agreement on standardised definitions regarding illegal logging is an initial step to help assess the problem and devise practical solutions. There are a number of factors that influence illegal logging, which are linked to broad issues of governance, legislation and policy, market, and capacity and technical ability. Key issues that have implications for law enforcement are:

- illegal logging is especially rampant in remote locations that are distant from administrative centres, and consequently government officials and inspectors
- decentralised administrative systems, where logging decisions are made at local or district levels, are most vulnerable to corruption and bribery of officials
- there is extensive and comprehensive regulation of the forestry sector, but gaps in implementation and enforcement.

Simplification of bureaucratic and tariff systems would ensure that legal activities do not become too expensive and complicated, and greater transparency is needed to reduce the vulnerability of relevant officers to corruption.

Discussion of the processing of illegal timber, and export and trafficking, has implications for monitoring the transit points for illegal timber and timber products. Countries differ in how timber is processed; some countries export their log production, while others, such as Australia and Japan, process logs domestically. There are knowledge gaps in the levels of illegal production, which cover a range of issues:

- illegal logs and products are indistinguishable from legal products, if production stamps are not evident or there is forged documentation
- controls and enforcement action in timber production and export are lacking, due to the lack of facilities, expertise and personnel to inspect timber processing plants and exports, as well as the expenses of sophisticated technical equipment
- the disinterest of academics in researching the illegal trade in timber once trees have been removed, which makes it difficult to generalise about the patterns of illegal timber production and export
- countries with the highest production of logs also have the highest levels of suspicious timber production and exports, implying that illegal timber production is driven by the same commercial enterprises trading in legal timber.

Developing a documentation trail that links raw timber to finished products would help to identify legal products. Electronic certification systems would facilitate this certification and information sharing between countries.

The destinations for illegal timber generate the demand for and consumption of timber and timber products, and is one of the most integral aspects of the illicit trade. Demand for

cheap timber and rare tropical species drives the whole process of illegal logging and trafficking. Strategies to eliminate illegal trade must consider the demand for illegal logs and timber products, but issues that can impede implementation of strategies include:

- most consuming countries in the region have few effective mechanisms to prohibit imports, but where there are control mechanisms, importation requirements are circumvented by false documentation, concealing imports, bribing officials or clandestine importing
- limited resources to monitor cross-border trade, particularly for countries where border areas are difficult to access.

It is more effective to reduce both the supply of and demand for illegal timber and products by encouraging use of legally produced timber and alternative, non-timber based products. Raising consumer awareness of the problem among retailers and consumers, and creating incentives to purchase legal timber, is a challenge to be met.

Introduction

This study analyses the illegal timber trade in the Asia–Pacific region. It outlines the process and *modi operandi* of the illegal timber trade, and evaluates current trends in the sourcing, trafficking, manufacturing, and importation of illegal timber and timber products in the Asia–Pacific region. The study examines the role that organised criminal networks and legitimate businesses play in this illicit market. Furthermore, the study outlines existing legal and regulatory mechanisms to prevent and suppress the trade in illegally sourced timber in the region, and examines the role of international and regional organisations in this field.

Purpose and significance

The high demand for timber and timber products around the world has resulted in large-scale illegal logging operations throughout the Asia–Pacific region. Considerably cheaper than legally sourced timber, the trade in illegal timber offers opportunities to make significant profits, especially in times when demand for timber is high. The gaps in domestic and international control regimes, difficulties in identifying illegal timber and its secondary products, along with intricate trafficking routes have resulted in an inability to effectively curtail the trade.

The illegal trade in timber and timber products considerably accelerates the destruction of forest resources and contributes to deforestation, desertification, and other environmental degradation. Illegal logging has a negative impact on biodiversity, as it destroys many unique natural habitats, and deprives developing countries and their populations of scarce renewable resources and of important income and tax revenues. The trafficking of illegally sourced timber devalues this commodity and disadvantages those companies that engage in controlled and legal operations and trade practices. Corruption and bribery at all levels of government are common at every stage of this illicit trade. In very extreme cases, illegal logging and timber trafficking have been used to generate revenue to finance coups, rogue regimes, human rights abuses and wars. The illicit trade in timber and timber products is carried out by sophisticated organisations on an industrial scale. It involves large companies as well as criminal networks that take advantage of a burgeoning global demand for cheap timber and timber products.

Although reliable accurate figures are not available, there is general consensus among informed observers that the extent of the illegal timber trade in the Asia–Pacific region is substantial. According to careful estimates based on reliable research ‘there is credible evidence to suggest that illegal logging of the kind that warrants international concern does, in fact, represent [in] the order of eight to 10 percent of global wood products production and, similarly, of the value of global wood products trade’ (Brack 2003: 195–196; Seneca Creek 2004: 19). Some sources suggest that ‘the illegal timber trade may comprise as much as 70 percent of the US\$100 billion global industry’ (Salo 2003: 130). An estimated

US\$2.3b worth of illegally sourced timber is traded each year between the countries in East Asia and South-East Asia. The magnitude of the illegal trade is also reflective of the loss of revenue and taxes in many countries.

The illegal trade is particularly affecting vulnerable and developing parts of the region. Countries such as Indonesia, Malaysia, Cambodia, and Papua New Guinea are significant sources of illegal timber. Several countries in the region manufacture products using illegal timber. This is evident, for instance, in Vietnam, where furniture is often made from illegally sourced timber from neighbouring Cambodia. China and Japan are also significant transit and manufacturing points. Australia, China, Japan and Korea are among the main importing and consumer countries in the region.

The true extent of this market is unknown due to the clandestine nature of the illicit trade and due to the difficulties of distinguishing between legally and illegally sourced materials. However, estimates about the magnitude of the illicit trade are alarming, with some sources suggesting that up to 73 percent of timber exported from Indonesia and 35 percent of timber exported from Malaysia is sourced illegally. It is estimated that illegal timber constitutes about nine percent of woods imported into Australia, a large portion of which involves the trade of timber furniture. China is believed to be the world's largest consumer of illegal timber, with 32 percent of imports of timber, pulp and paper in 2000 estimated to be illegal (Seneca Creek 2004: 15–16).

The economic impact of the illicit trade in timber and timber products is considerable. According to some estimates, illegal logging causes global market losses of more than US\$10b per year and reduces government revenues by approximately US\$5b annually (Seneca Creek 2004: 22). Particularly harmful to the legal economy is the fact that timber and timber products from illegal sources are considerably cheaper than legally sourced products. It has been estimated that 'illegal logging undercuts world prices for legally produced forest products by between an estimated seven and 16 percent' (Seneca Creek 2004: 22).

Background and regional overview

The Asia–Pacific region is rich in biological diversity and features unique ecological zones, including lush tropical forests with extensive tree species. It is estimated that approximately 18 percent of the world's tropical forests are found in the Asia–Pacific region, constituting 'enormous and concentrated storehouses of the world's biodiversity' (Boer, Ramsay & Rothwell 1998: 98). Many countries in the region are home to great numbers of different species and a high proportion of these species are endemic, i.e. they do not exist anywhere else in the world. The biodiversity in the Asia–Pacific region is due to the size of the region, the diverse climate, and the remote and often undisturbed location of some parts.

Development, urbanisation, and globalisation have caused substantial depletion of the forests throughout the region. In addition, commercial operators, often with the approval and assistance of some governments, have severely encroached on many forests with their logging operations and have exploited forestry resources beyond sustainable levels. It has been estimated that over 2.2 million hectares of tropical rainforests are lost in Southeast Asia each year. The Asia–Pacific region is said to have the highest annual deforestation rate in the world (1.2%); higher than Latin America (0.8%) and Africa (0.7%) (Boer, Ramsay & Rothwell 1998: 48, 99).

The many consequences of deforestation, including environmental degradation and destruction of natural habitats, desertification, erosion, forced displacements, and the extinction of faunal and floral species, have led to creation of comprehensive protection regimes at international, regional and domestic levels. The prohibition placed on trade of many species did, however, not eliminate the demand for timber and timber products. An illegal market emerged which supplies illegal timber at lower prices leading to a high demand for both primary products, such as logs, and secondary products such as plywood, veneer, and timber furniture. Despite international condemnation and some criminalisation of the trade, implementation and enforcement is only slowly developing in many countries, and is non-existent in others. The use of illegally sourced timber in secondary products has exacerbated the problem for enforcement agencies of identifying the origin of the timber.

The Convention on International Trade in Endangered Species (CITES) is the primary means by which enforcement agencies may prosecute those responsible and seize illegal timber. No other laws currently prohibit importation of illegally sourced timber. Rather, timber species are protected through CITES if they are listed as ‘endangered’. CITES has become increasingly important in recent years with the introduction of new timber species to Appendixes II and III. However, the increased scrutiny of the timber trade by CITES and other international agreements and domestic measures has made it necessary for the illicit trade to become more sophisticated in finding new avenues for clandestine trafficking of raw and processed timber, obtaining fraudulent documentation, and bribing government officials.

At the policy level, the topic of illegal trafficking in timber and timber products has received greater attention in recent years following the US president’s ‘Initiative against Illegal Logging’. This initiative was first announced by President George W Bush on 14 February 2002 and resulted in major activities by US government agencies, increased funding to prevent and suppress the phenomena associated with illegal logging, and also generated a plethora of new research. The then Secretary of State, Mr Colin Powell, formally launched the initiative in July 2003 ‘as a framework for action to assist developing countries to combat illegal logging, the sale and export of illegally harvested timber, and corruption in the forest sector’. The initiative ‘emphasised identifying and reducing threats to protected areas and other high value conservation forests from illegal logging through four key strategies: good governance, community-based action, technology transfer, and harnessing market forces’

(US Department of State 2003: 2; US Department of State 2006?: 3). The US-led initiative also supported international and non-governmental organisations (NGOs) in their efforts to reduce illegal logging. Consequently, the illicit trade in timber and timber products has become a key policy concern at national and international levels. For example, in Australia, the government under then Prime Minister John Howard, in its 2004 federal election campaign, confirmed its determination to prevent and suppress illegal logging in Australia and abroad, and in late 2006 started to take steps towards developing a new policy on illegal logging (Australian Government DAFF 2006: 23).

Goals and objectives

The purpose of this study is to explore the scale of the illegal timber trade in the Asia–Pacific region and identify the *modi operandi* in the commodity chain, including the illegal logging, manufacturing, trafficking, importation, and consumption of illegal timber and timber products. The study examines the roles of criminal organisations in this trade and the involvement of legitimate businesses in the process. Furthermore, the study outlines and evaluates the effectiveness of the current legislative frameworks to prevent and suppress the trade in illegal timber at domestic, regional and national levels. The goal of this study is to contribute to the knowledge and understanding of the illicit timber trade in the region, and aims to contribute to enhancing existing measures to prevent and suppress this illicit trade.

Literature and data

This study is based on extensive research using open-source literature, data and interviews with key stakeholders. While material relating to illegal logging in the Asia–Pacific region is readily available, the existing research is frequently limited to examining the process of the licit timber trade and the legislative framework. Scholarly research has dealt principally with environmental issues generally, rather than focusing specifically on the illegal timber trade. There is some literature on illegal logging, but most of the available information derives from non-governmental and some intergovernmental organisations, and not from academic research. There is, to date, no comprehensive analysis of the patterns of the trade in the region, the trafficking, importation and demand for illegally sourced timber, and of the legislative and administrative frameworks at domestic, regional, and international levels.

Among the key publications on this topic are those by the International Tropical Timber Organization (ITTO), an intergovernmental organisation that has collected considerable data on production, trade, and prices of primary and secondary timber products. However, the data are concerned primarily with the legal timber trade, so information on the illegal trade

is therefore limited. Other organisations have published data on illegal logging and the world-wide market for timber. However the data are not unique to the Asia–Pacific region. In addition, many figures remain unexplained and it is important to acknowledge that most figures can be seen as estimates only, since quantifying the volume of illegal timber throughout the world is extremely difficult. Furthermore, while such data provide a basis upon which to demonstrate the scale of the problem, there is a need to examine the processes of the illegal timber trade and the key players involved.

Perhaps the most important study in this field is the research conducted by Seneca Creek Associates and Wood Resource International for the American Forest & Paper Association (Seneca Creek 2004). The report *'Illegal' logging and global wood markets*, published in November 2004, is the most comprehensive inquiry into the patterns and levels of the illegal trade in timber and timber products to date. The report explores the characteristics of illegal logging in the main timber supplier countries around the world, analyses the legislative and policy frameworks in these nations, makes careful estimates about the levels and value of the illicit trade, and compares these data to figures reported in other sources. The data in this report are currently the most reliable indicator of the magnitude of the illegal timber trade (the methodology is set out in Seneca Creek 2004: 1–4). However this research is limited to Indonesia, Malaysia, Russia, China, Japan and countries outside the Asia–Pacific region, and some of the figures used are no longer current.

NGOs, such as TRAFFIC, Greenpeace, Environmental Investigation Agency (EIA) and Telapak, have published considerable material on the destruction of forests in the region, particularly in Indonesia. Some of this material examines the role of CITES in attempting to reduce the widespread illegal logging in the region. However, NGO material is largely concerned with environmental impacts and the scale of illegal logging in source countries, with the trade and manufacture of illegal timber receiving less attention.

Consequently, there is a need for a contemporary analysis of the illegal timber trade in the Asia–Pacific region, examining the role of both primary and secondary timber products, the conduct and processes involved, and the effectiveness of current legislative approaches to enforcement.

Limitations and obstacles

Some general statements about the data and information used in this study need to be made from the outset. Many statistics about criminal activities and illicit markets are, by their very nature, fragmentary and sometimes contradictory. The illicit and clandestine nature of these operations dictates this. While some generalisations can be made on the basis of the information found, there are significant limitations to the evidence.

The data and information used in this report come from a variety of sources, both national and international, and the methodologies used by these sources differ substantially. Accurate 'hard' data about the illicit trafficking in timber and timber products is non-existent. Most of the published figures are, at best, estimates made on the basis of seizures, samples or other research. The true magnitude and value of this illicit trade is unknown, and much of the published data are speculative or anecdotal and not scientifically verifiable. Much of the available data are referenced circularly and not linked to an original source.

Comparisons between the size and impact of the illegal timber trade and associated criminal activity are difficult to make and, at best, speculative. Much of the literature also seems to exaggerate the scale of the trade and statements such as 'timber could very well replace diamonds as the resource that terrorist organisations use to fund their activities' (Salo 2003: 136) can neither be verified, nor are they helpful in the current political climate. Many NGOs also exaggerate their estimates in support of their own agendas and campaigns (Seneca Creek 2004: 9).

Scope and structure

The scope of this study is limited to an examination of the legislative frameworks and operational patterns of the illegal timber trade in the Asia–Pacific region. Chapter 'International frameworks' outlines the existing international and regional frameworks relevant to the illegal trade in timber and timber products. It explores a range of international conventions, regional agreements and the role of international organisations in this field.

The following chapters examine the three stages of the illegal timber trade:

- sourcing
- trafficking
- manufacturing, importation and consumption.

The study is limited to illegal aspects of the timber trade in the Asia–Pacific region. The study does not concern itself with legal activities that may be equally destructive and threatening for forests and individual species. The scope of this study is limited to transnational criminal activities. Logging and exploitation for personal and local use, especially by native populations for their private needs, is not further addressed in this report because this type of conduct is not seen as a serious international problem and its criminality is debatable (Abt Associates Inc 2006: 9).

Illegality of the trade may arise at the source, during transit and at destination points under domestic laws or by violation of international treaties (Brack 2003: 195, 196; Brack et al. 2002: 53; Salo 2003: 128–129):

-
- At the source, the trade may be illicit because the timber was logged or harvested illegally, i.e. involves a protected species, is sourced from a protected area, or the logging occurred without or in excess of authorisations by domestic authorities, or the logging involved corrupt means to gain authorisations and access to forests.
 - The trade may also be illegal because it violates export bans. At the transit point, illegality may arise because the trade in the type of timber or the trade in timber of a particular source is banned or requires authorisations. The exportation may involve forged documentation, avoidance of charges and taxes, or corrupt practices.
 - At the destination point, the illegality may stem from importation bans, lack of authorisation, forged importation documents, corruption, or failure to comply with other regulatory requirements.

The Asia–Pacific region is home to many countries that play a key role in the illegal timber trade as source, manufacturing or consumer countries. Chapter 'Sources of illegal timber' examines the key source countries of illegal timber, including Cambodia, Indonesia, Malaysia, Russia, Papua New Guinea and others. Chapter 'Transit points for illegal timber' sets out the patterns of key transit and processing countries such as China, Malaysia and Vietnam. Chapter 'Destinations for illegal timber' analyses the importation and retail sale of timber and timber products in countries such as Australia, China and Japan.

International frameworks

There is, at present, no single universal international instrument designed specifically to prevent and suppress the illicit trade in timber and timber products (Salo 2003: 130). The existing mechanisms under international law relevant to the illicit timber trade are, for the most part, agreements designed for protecting the environment and the sustainable use of natural resources. There is no offence of illegal logging in international law, and the trafficking and sale of illegally sourced timber are not criminalised in any treaty.

Over the past 40 years, an extensive body of treaties, agreements, declarations and organisations has emerged which seek to protect the environment, natural resources, habitats, and the world's fauna and flora. While none of these initiatives are specifically aimed at preventing and suppressing the illicit trafficking in timber and timber products, many international and regional treaties and organisations have developed frameworks that, at least partially, regulate, control and limit the international trade in timber. The following sections identify and explore the main international treaties, the key international organisations, and relevant regional initiatives in this field.

International law

Existing international environmental law consists, for the most part, of agreements designed for environmental protection and sustainable use of natural resources. Some of these treaties deal with conservation and protection of individual species. Others are concerned with preservation of specific geographical areas and natural habitats. Other agreements again focus on sustainable development or protection of biological diversity. Specifically:

- Species protection, along with measures to suppress the illicit trade in protected species, is important to prevent extinction of particular trees and plants, and prevent their unnecessary exploitation. However, species protection measures cannot prevent destruction of natural habitats and entire ecosystems (Boer, Ramsay & Rothwell 1998: 100). Their protection requires different or additional measures.
- Mechanisms to protect natural habitats, ecosystems or geographical areas are concerned predominantly with preservation of a designated area of particular ecological, biological or natural value. These areas may be placed under international protection because of their rare or unique features, their fauna or flora.
- Biodiversity protection also involves conservation and habitat protection. Its purpose is to protect certain ecosystems or natural areas and all the species therein. Conservation of biodiversity usually involves protection of designated lands – so-called conservation areas or reserves – from any encroachment.
- Habitat protection, in contrast, refers to protection of human land use, including sustainable development, income-producing opportunities and maintenance of the habitat (Boer, Ramsay & Rothwell 1998: 100–101).

An important feature of all aspects of international environmental law is the emerging concept of ‘sustainable development’, which is increasingly recognised in many international treaties and regional agreements. Sustainable development may be defined as ‘the integration of environmental considerations into the development planning process so that long-term economic development is ensured while the quality of life of present and future generations is preserved and improved’ (Mushkat 1989: 29, with reference to the World Commission on Environment and Development). The concept of sustainable development recognises the need for environmental protection as well as that for economic development, and seeks to reconcile these often opposing and conflicting objectives. It seeks to strike a balance between conservation and protection needs on the one hand, and economic and developmental demands on the other.

CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora, commonly known as CITES, is the principal international instrument to control and regulate the international trade in protected species and to suppress any illicit dealings in wild fauna and flora. CITES is the single most important instrument dealing with the illicit trade in illegal timber under existing international law because it is the only convention that requires State Parties to criminalise the illicit trade in protected species and that enables importing countries to seize illegally sourced flora, including timber and timber products.

CITES has been described as ‘one of the most effective regulatory structures since it provides sanctions for non-compliance’ (Aikman 2003: 307; Birnie & Boyle 2002: 625). In particular, the operation and enforcement of CITES has gained praise because ‘a national export/import permit system is combined with a national institutional system’ (Birnie & Boyle 2002: 626).

CITES was opened for signature in Washington, DC on 3 March 1973 and entered into force on 1 July 1975 (999 UNTS 243) (van Heijnsbergen 1997: 27). CITES currently has 169 signatories around the world. The Convention has found widespread adoption throughout the Asia–Pacific region. Australia, Indonesia, Malaysia and Papua New Guinea were among the first countries to ratify or accede to CITES. Table 1 lists the State Parties in the Asia–Pacific region, and identifies the domestic management authorities that administer and enforce CITES.

Table 1: CITES signatories in the Asia–Pacific region, 2006

Country	Date of entry into force (accession/ ratification)	Administrative and enforcement agencies
Australia	29 Jul 1976 (r) 27 Oct 1976	Minister for the Environment and Heritage (Cth) Enforcement: International Wildlife Trade Section, Dept of the Environment and Heritage
Brunei Darussalam	4 May 1990 (a) 2 Aug 1990	Ministry of Culture, Youth and Sports
Cambodia	4 Jul 1997 (r) 2 Oct 1997	Ministry of Agriculture, Forestry and Fisheries
China (PRC)	8 Jan 1981 (a) 8 Apr 1981	Endangered Species Import and Export Management Office of the People's Republic of China State Forestry Administration
East Timor (Timor Leste)	Not signed	–
Fiji	30 Sep 1997 (a) 29 Dec 1997	Ministry of Local Government, Housing, Squatter Settlement and Environment
France (New Caledonia)	11 May 1978 (a) 9 Aug 1978	Ministère de l'écologie et du développement durable Secrétaire général du Haut Commissariat de la République en Nouvelle- Calédonie
Indonesia	28 Dec 1978 (a) 28 Mar 1979	Directorate General of Forest Protection and Nature Conservation, Ministry of Forestry
Japan	6 Aug 1980 (accept) 4 Nov 1980	Trade and Economic Cooperation Bureau, Ministry of Economy, Trade and Industry
Korea, Republic of (ROK)	9 Jul 1993 (a) 7 Oct 1993	Global Environment Office Ministry of Environment
Lao PDR	1 Mar 2004 (a) 30 May 2004	Ministry of Agriculture and Forestry
Malaysia	20 Oct 1977 (a) 18 Jan 1978	Department of Wildlife and National Parks
New Zealand	10 May 1989 (a) 8 Aug 1989	Department of Conservation
Palau	16 Apr 2004 (a) 15 Jul 2004	Ministry of Resources and Development
Papua New Guinea	12 Dec 1975 (a) 11 Mar 1976	Department of Environment and Conservation
Philippines	18 Aug 1981 (r) 16 Nov 1981	Protected Areas and Wildlife Bureau, Department of Environment and Natural Resources
Samoa	9 Nov 2004 (a) 7 Jun 2005	Ministry of Foreign Affairs and Trade
Russian Federation	18 Jan 1992 1 Jan 1992	Department of Specially Protected Natural Areas, Ecological Expertise and Permitting Activity
Singapore	30 Nov 1986 (a) 28 Feb 1987	Ministry of National Development
Solomon Islands	Not signed	–

Table 1: continued

Country	Date of entry into force (accession/ ratification)	Administrative and enforcement agencies
Taiwan (ROC)	[Not eligible for signature]	–
Thailand	21 Jan 1983 (r) 21 Apr 1983	Department of Agriculture Plant Varieties Protection Division; International Trade of Plants under the Conventions Sub-division
Tonga	Not signed	–
Vanuatu	17 Jul 1989 (a) 15 Oct 1989	Environment Unit
Vietnam	20 Jan 1994 (a) 20 Apr 1994	Forest Protection Department, Ministry of Agriculture and Rural Development

Notes: (a) = accession; (r) = ratification

This list is prone to inaccuracy as changes occur frequently and often without warning (Article IX(3))

Source: CITES (2006a)

In short, the purpose of CITES is to protect endangered floral and faunal species (including products from them) by creating a tightly regulated control system for any trade and transaction in these species. The Convention contains three separate lists of species and ‘specimen of species’, and sets out the control and reporting mechanisms applicable to them (CITES 2006b). Included in these lists are 27 tree species. The Convention requires State Parties to criminalise any illicit trade in these species and establishes a central agency to collect relevant reports from Member States. The following sections explore the key CITES provisions insofar as they are relevant to the illicit trade in timber and timber products.

Protected species

The species of fauna and flora protected under CITES are listed in three separate lists, referred to as appendixes, I, II and III, depending on the threat of extinction and the levels of international protection. Appendixes I and II are internationally agreed lists of protected species. Appendix III, in contrast, includes species that have been listed unilaterally by Member States. From the outset, it should be noted that most of the species protected under CITES are native to developing countries. As a result, these countries share a greater burden in relation to their protection and export, and require assistance from developed nations in protecting these species and their natural habitats (Wang 2002a: 507).

APPENDIXES I AND II

Species listed in Appendix I ‘are threatened with extinction and are, or may be affected by trade’ (Article II, paragraph 1). Accordingly, these species are placed under the most rigid protection (Favre 1989: 31–38). The protection of Appendix II species is comprehensive but

slightly more relaxed than that of Appendix I species. Appendix I has been referred to as a 'black list' while Appendix II may be seen as a 'grey list' of protected species (Reeve 2002: 29, 30).

Appendix II species are not currently threatened by extinction but might become threatened unless the trade in these species is strictly controlled (Article II, paragraph 2) (Favre 1989: 38–41). To avoid some of the difficulties in identifying protected species, Article II, paragraph 2(b) allows inclusion of so-called 'look alike' specimens to the list in Appendix II (Birnie & Boyle 2002: 628; Chen 2006: 18–19; Favre 1989: 41–42).

The CITES appendixes currently list close to 34,000 species of fauna and flora. Most of them are plants; 27 are tree species (as at 30 Nov 2006, UNEP 2006; CITES 2006a). All of these species have been included in the CITES appendixes because they suffered from illegal logging and the associated trade in timber and timber products (Chen 2006: 10–11). Among the protected tree species are the following trees used in timber production:

- Appendix I lists six timber species, including *Fitzroya cupressoides* (Chilean larch), *Pilgerodendron uviferum*, *Dalbergia nigra* (Brazilian rosewood), *Abies guatemalensis* and *Balmea stormiae*.
- Appendix II lists over 20 timber species, including, for example, *Pericopsis elata* (African teak), *Platymiscium pleiosthyum*, *Pterocarpus santalinus*, *Swietenia humilis*, *Swietenia marcophylla* (bigleaf mahogany), *Prunus africana*, *Guaiacum officinale*, *Guaiacum sanctum* and *Gonystylus* spp. (ramin).

For the countries in South-East Asia, the single most important tree species included in Appendix II is ramin, a highly valued type of timber commonly found in Indonesia and Malaysia. Indonesia initially listed ramin as an Appendix III species but, with the support of the US government, included it in Appendix II in October 2004. The listing came into effect in January 2005 (Chen 2006: 27–28; US Department of State 2006?: 8).

The process of amending appendixes I and II is set out in Article XV of CITES. Changes to the appendixes are reviewed at the biennial meetings of CITES signatories. NGOs are also represented at these meetings and have been able to achieve the inclusion of many species through their active role in these meetings. The process of adding species to the CITES appendixes is very slow and bureaucratic. It involves a lengthy proposal and assessment process, and requires a two-thirds majority of present and voting CITES Members (Reeve 2002: 31–32; Stewart 1981: 433). The existing system does not allow for rapid responses to sudden threats, but despite the bureaucratic processes involved, a great number of new species are added to the appendixes each year.

The inclusion of tropical timber species into the CITES Appendixes has been especially controversial among the countries of the Asia-Pacific region. While many species in the region are particularly vulnerable to exploitation and commercial trade, inclusion of many

tree species has faced fierce opposition by the major tropical timber harvesting countries in the region, particularly Malaysia, Indonesia and Papua New Guinea. As a result, the listing of tree species under appendixes I and II is, to date, comparatively small.

It has been argued, especially by NGOs, that many tree species that are not currently included in the CITES appendixes fit the criteria for inclusion. In 2002, EIA and Telapak, for instance, referring to a report by the World Conservation Monitoring Centre, identified:

ten tree species not currently on the Appendixes [that] fitted the criteria for inclusion in Appendix I, while a further 69 fitted the criteria for inclusion in Appendix II. These species include a number of trees in major commercial trade, which are considered threatened by over-exploitation. Major Asian species thought to be threatened by such trade include agathis, ebony, jelutong, ironwood, and merbau (EIA & Telapak 2002: 4).

CITES contains no specific provisions for delisting species when protection is no longer required or if the species is extinct (Favre 1989: 44–45).

APPENDIX III

Appendix III contains a list of species that have been identified by signatories 'as being the subject of domestic regulations for the purpose of preventing or restricting exploitation, and as needing the cooperation of other countries in the control of trade' (Article II, paragraph 3). Appendix III is, in essence, a list of species that require protection in individual countries but are not considered endangered at an international level (Favre 1989: 42).

The process of amending the list of species in Appendix III is set out in Article XVI and is significantly easier than the process for the other appendixes. Essentially, adding species to Appendix III occurs unilaterally by State Parties and does not require approval or voting by other signatories (see further Aikman 2003: 311–312). However, the protection of Appendix III species is, as will be shown, considerably weaker.

Currently, 45 plant species are listed in Appendix III including two tree species used for timber that can be found in the forests in the Asia–Pacific region (as at 30 Nov 2006, UNEP 2006; CITES 2006a). It is understood that Indonesia is currently considering whether to also include merbau in the list of Appendix III species (EIA & Telapak 2005: 2).

RESERVATIONS

Under Article XXIII.2, State Parties to the Convention may file their reservation towards protection of any species listed in any of the three appendixes. This may be done when a country joins the Convention or when appendixes I or II are amended. Reservations towards Appendix III species may be expressed unilaterally at any time (Stewart 1981: 434–435). The reservation mechanisms under CITES effectively allow countries to act as non-signatories in relation to specific species; this is implied in Article XV, paragraph 3 (Stewart 1981: 435).

Many see the reservations allowed under CITES as fundamentally undermining the purposes of the Convention (Birnie & Boyle 2002: 629–630; Boer, Ramsay & Rothwell 1998: 106). Reservations open the door for countries to opt out of protecting some species and thus enable commercial exploitation of endangered species (Stewart 1981: 429). Conversely, the reservation clauses may be seen as an avenue to increase general support for the Convention and encourage membership of countries that may otherwise not accede to CITES. Furthermore, the reservation clauses acknowledge that countries may have legitimate trading interests in some species and seek to protect their economic interests (Stewart 1981: 436).

However, in practice, the reservation system is often used to bypass Convention obligations. This is particularly the case if reserving parties engage in trade with non-signatories or if two countries with identical reservations engage in trade with each other. Stewart (1981) observed that these situations 'reopen the market for and encourage smuggling in Appendix I species.' She further remarks that: 'States with a large enough share of the market entering matched reservations could render nugatory the agreement's protection of a particular species. [...] As more [s]tates enter reservations to the same species [the cooperative effort of the Convention] collapses' (Stewart 1981: 438).

The problem created by the reservation clauses is exemplified in the case of ramin. Due to over-logging and the rapid decline of ramin trees in Indonesia, the Indonesian Government added ramin, ramin parts and ramin products to Appendix III of CITES. As soon as the listing came into effect in August 2001, Malaysia, another important source country of ramin, entered an official reservation against the listing (not including logs and sawn timber) (EIA & Telapak 2002: 5). When ramin was later included in Appendix II, Malaysia withdrew its reservation.

Some proposals have been made to curb overuse of the reservation clauses by removing the ease with which reservations can be made (Stewart 1981: 446–449) and by restricting the number of reservations that any one country can make (Boer, Ramsay & Rothwell 1998: 106). Furthermore, it has been suggested that countries should ban the import of products from reserving states (Stewart 1981: 452–453).

An additional problem of species protection generally is the fact that to protect a species, that species has to be scientifically known and identified. There are thought to be many species in the Asia–Pacific region yet to be discovered and properly researched. The CITES protection measures are not suited to safeguard those species (Boer, Ramsay & Rothwell 1998: 100).

Control and trade

To protect the species listed in the CITES appendixes, the Convention establishes a comprehensive dual control and authorisation scheme for trade in these species. CITES thus 'attempts to balance legitimate trade interests in renewable resources with the need

to protect endangered species' (Birnie & Boyle 2002: 630). In short, the Convention requires government permits from export and import countries for any trade in these species; any unauthorised trade is considered illegal (Birnie & Boyle 2002: 626). Different permit schemes apply to the three CITES annexes. The most stringent controls apply to the most endangered species listed in Appendix I, while the control and trade restrictions for appendix II and III species are less rigid. Signatories to CITES are free to add further conditions and control the trade in any species more stringently (Article XIV).

IMPORT-EXPORT SCHEMES

Species listed in CITES Appendix I are placed under the most stringent control mechanisms 'in order not to endanger further their survival'. The trade in these species is, for the most part, prohibited and 'must only be authorised in exceptional circumstances' (Article III, paragraph 1). Exportation, importation, 're-export', and 'introduction from sea' of any Appendix I species requires prior grant and presentation of import and/or export permits (Article III, paragraphs 2–5). Such permits will only be granted under the conditions set out in Article III, paragraphs 2–5 and the domestic CITES Management Authority will only issue such permits for Appendix I species if the specimen is to be used primarily for non-commercial purposes. This effectively limits the trade to scientific and educational purposes and aims to eliminate commercial dealings in Appendix I species. In particular, export permits may only be issued if the domestic CITES Management Authority is satisfied that the species has been legally obtained and if the Scientific Authorities of both importing and exporting countries confirm that the export is not detrimental to the species' survival (so-called non-detriment finding). Similar conditions apply for issuing of re-export permits and introduction from the sea permits (Article III, paragraphs 4–5); export permits of Appendix I species further require that an import permit has already been issued (Birnie & Boyle 2002: 627; Boer, Ramsay & Rothwell 1998: 106; Reeve 2002: 29–30).

Table 2: Import-export scheme for CITES Appendix I species

Export	→→→	Import
<p>Requires:</p> <ul style="list-style-type: none"> • export permit which is granted after import permit (Article III, paragraph 2(d)) • determination by Management Authority of exporting state that specimens were not obtained illegally (Article III, paragraph 2(b)) • non-detriment finding by Scientific Authority of exporting country (Article III, paragraph 2(a)). 	<p>Trade in Appendix I specimen 'must only be authorised in exceptional circumstances' (Article II)</p>	<p>Requires:</p> <ul style="list-style-type: none"> • import permit before export permit (Article III) • determination by Management Authority that import is not primarily for commercial purposes (Article III, paragraph 3(c)) • non-detriment finding by Scientific Authority of importing country (Article III, paragraph 3(a)).

Source: Article III CITES

The trade in Appendix II species equally requires prior authorisation, though the conditions to obtain permits set out in Article IV are slightly less stringent than those applicable to Appendix I species. In particular, Appendix II species do not require import permits (Reeve 2002: 30).

Table 3: Import–export scheme for CITES Appendix II species

Export	→→→	Import
Requires: <ul style="list-style-type: none"> • export permit (Article IV) • determination by Management Authority of exporting state that specimens were not obtained illegally (Article IV, paragraph 2(b)) • non-detriment finding by Scientific Authority of exporting country (Article IV, paragraph 2(a)). 	Scientific Authority of exporting country monitors actual exports and export limits (Article IV, paragraph 3).	[Import permit not required]

Source: Article IV CITES

Import, export, and re-export of Appendix III species requires permission subject to the conditions set out in Article V. These conditions depend on whether the export originates from the country that listed the species in Appendix III (Article III, paragraph 2) or from another country (Reeve 2002: 31). Export permits are only required when the export comes from a country that has included the species on its Appendix III list.

Table 4: Import–export scheme for CITES Appendix III species

Export	→→→	Import
Export from listing state requires: <ul style="list-style-type: none"> • export permit (Article V, paragraph 2) • determination by Management Authority of exporting state that specimens were not obtained illegally (Article V, paragraph 2(a)). Export from other states: [No requirements]		Import from listing state requires: <ul style="list-style-type: none"> • presentation of a certificate of origin (Article III, paragraph 3) • presentation of export permit (Article III, paragraph 3). Import from other state requires: <ul style="list-style-type: none"> • presentation of a certificate of origin (Article III, paragraph 3).

Source: Article V CITES

To ensure the integrity and uniformity of the permit system and prevent forgery of government permits, CITES requires the use of security paper and stamps (Article VI, paragraph 7; Article IX, paragraph 4). The Article further requires that the contents of permits are sufficiently specific in relation to the species and the volume and number of imported/exported items (Favre 1989: 150–154). Other requirements for the information to be contained in trade permits are set out in Article VI, paragraphs 2–7 (Favre 1989: 154–163).

EXEMPTIONS

CITES provides a number of exemptions from the permit and control requirements. These exemptions are set out in Article VII and include:

- specimens in transit (Article VII, paragraph 1) (Favre 1989: 168–172)
- specimens that were acquired before the species were listed in CITES appendixes (Article VII, paragraph 2), sometimes referred to as the grandfather clause (Reeve 2002: 35; Favre 1989: 172–180)
- specimens that are personal or household effects (Article VII, paragraph 3) (Favre 1989: 180–186)
- specimens bred in captivity for commercial purposes (Article VII, paragraph 4), sometimes referred to as farming or ranching (Favre 1989: 186–200)
- specimens on institutional loan or exchange (Article VII, paragraph 6) (Favre 1989: 201–204)
- specimens transferred as part of travelling zoos, circuses or exhibits (Article VII, paragraph 7) (Favre 1989: 204–205).

An exemption may also apply by way of exclusion if countries express their reservation towards the listing of a particular species (Article XXIII).

The rationale of exemptions under Article VII is to allow some flexibility for unique transactions that involve protected species. However, the exemptions under Article VII are seen by many as one of the principal weaknesses of CITES, as they provide loopholes for illegal trade (Birnie & Boyle 2002: 629). In practice, the exemptions are often abused or are interpreted very broadly and thus indirectly allow trade in protected species. In response, the Conference of CITES signatories issued some interpretive notes to narrow the scope of the exemptions, but these have done little to prevent their abuse.

Much of the concern relates specifically to the farming or ranching exemption under Article VII, paragraph 4 (Reeve 2002: 36) as many countries engage in trading captive-bred fauna and controlled cultivation of protected flora. This exemption also creates the practical problem that two specimen of the same species – one grown in the wild and one grown in controlled areas – cannot be distinguished and thus any illegal trade becomes difficult, if not impossible, to detect.

TRADE CONTROL, MANAGEMENT AND ENFORCEMENT

An important element of the CITES framework is creation and identification of national agencies charged with administering and executing CITES obligations; the Convention requires that at the time of accession to CITES, State Parties identify the relevant agencies (Article IX, paragraph 2). That information is then made available to the Secretariat and to all other Members, thus creating a directory (Favre 1989: 244).

CITES requires State Parties to designate a domestic agency mandated with managing CITES (Article IX, paragraph 1(a)) including:

- authorisation and issuing of permits and certificates of approval
- communication of information to other Parties and the CITES Secretariat
- reporting on CITES compliance matters (Favre 1989: 254–257; Hewitt 2002: 103, 107).

A complete list of management agencies in the CITES signatories in the region can be found in Table 1. In many countries, the Management Authority is more than one entity. CITES further requires signatories to nominate a Scientific Authority to provide scientific advice on suitable measures to protect species and on inclusion of new species in the CITES appendixes (Article IX, paragraph 1(b)). In comparison to the Management Authority, the role of the Scientific Authority is largely advisory (Favre 1989: 248–249; Hewitt 2002: 104–105).

TRADE WITH NON-SIGNATORIES

Of particular concern has been the trade between CITES signatories and countries that are not Parties to the Convention. Acknowledging this potential loophole of species protection, CITES recommends the use of convention standards in any trade involving non-signatory nations, using ‘comparable documentation’ issued by ‘competent authorities’ (Reeve 2002: 34–35). Although the Convention has found almost universal adoption, some states and territories have not (or not yet) acceded to CITES. In practice, the trade through these non-signatory jurisdictions has been actively used as a way to circumvent reporting and permit requirements (Birnie & Boyle 2002: 629). Taiwan and the Solomon Islands have been singled out as two of the main non-signatory ‘loopholes’ in the Asia–Pacific region.

An additional, but perhaps unavoidable, weakness of CITES is seen by some in the fact that the Convention obligations necessarily only apply to international, cross-border trade of the protected species but not to any transactions that occur domestically and which may be equally harmful to the species (Boer, Ramsay & Rothwell 1998: 106).

Offences and enforcement

Article VIII, paragraph 1 of CITES is the single most important provision under existing international law dealing with the criminal elements of the illicit trade in protected species as it requires State Parties to criminalise and enforce any violation of CITES prohibitions.

These shall include measures

- (a) to penalise trade in, or possession of, such specimens, or both; and
- (b) to provide for the confiscation or return to the State of export of such specimens.

Article VIII does not in itself create a criminal offence and it does not provide any guidance as to the design of criminal offences under domestic law (Favre 1989: 215). Creation of the offence and enforcement of CITES provisions is left to the signatories, and State Parties are at liberty to adopt more stringent prohibition and restriction requirements than required by the Convention. Proposals to include the criminalisation of the retail trade in illicitly sourced species and penalise attempts to trade in or possess protected species were not included in the final text of the Convention (Favre 1989: 216).

Article VIII, paragraph 1(b) seeks to ensure that criminalisation of the illicit trade is accompanied by confiscation or return of the protected species. In practice, this 'is often the only punishment suffered by individuals for violation of CITES requirements' (Favre 1989: 215). From the wording of Article VIII, paragraph 1 it is, however, clear that the confiscation must be accompanied by penal sanctions (Emonds 1981: 58), although this is not always the approach Member States take.

CITES does not prescribe any penalties for the illicit trade in protected species and, accordingly, signatories are free to determine the severity of any fines or sentences imposed on the illegal trade. As shown in the later parts of this study, some countries in the region are particularly lenient in their penalties and in some instances the penalties offer little deterrent to criminal operators even if they are caught (Favre 1989: 216).

The enforcement mechanisms in CITES and its reliance upon trading and customs law at the national level are seen by some as one of the greatest strengths of the Convention, as it sets CITES apart from most other international environmental law treaties for which the policing has proved extremely difficult (Boer, Ramsay & Rothwell 1998: 17). The creation and operation of CITES is widely seen as a milestone in the protection of many species and there are reports that '[n]ot one species listed in the CITES Appendixes has become extinct as a result of trade since the treaty took effect in 1975' (Boer, Ramsay & Rothwell 1998: 106 citing TRAFFIC). For example, the listing of ramin in Appendix III is seen as the major cause in the reduction of illegal logging and trading in ramin. A report issued in 2004 found that:

The increasing difficulty in transporting and selling stolen ramin overseas has also played a part. Though ramin is still targeted, loggers and traders have been forced to reduce and conceal their activities, adding costs and reducing profit margins. In some areas vessels used to transport stolen ramin have been lying idle, blocked by CITES controls from reaching destinations abroad. These changes on the ground have been increasingly driven by implementation and enforcement of the ramin listing in consuming countries (EIA & Telapak 2004: 4).

United States statistics also confirm a considerable decline in illegal ramin shipments in recent years. In 2005, US government agencies seized only one shipment of ramin, down

from four seizures in 2004 and 10 in 2003. The total value of ramin seizures in the United States between 2003 and 2005 is estimated to have been US\$382,032 (US Department of State 2006?: 8).

There have equally been criticisms that the CITES system is too lenient and that too little is being done about suppressing the illicit trade in species protected under CITES. A report published in 1985 found that 79 percent of the international trade in CITES protected plants go unreported (Lyster 1985: 269). Others have criticised CITES for relying completely on national implementation and enforcement and for failing to institute uniform legislative, management and enforcement measures (Wang 2002a: 508). Some argue that the system of species protection is counterproductive and simply incites illegal trade. In 2002, Wang remarked that:

Some observers suggest new approaches that include ‘delisting’ species to allow trade as a stimulus to protection through a combination of direct financial interest and stewardship. Proponents adopt a libertarian perspective and suggest the creation of a private property right that recognises sustainable use, even of endangered species. The argument is that a ban on trade does not promote efficiency, while conservation and use correctly focuses on creating positive incentives for individuals to protect species and wildlife habitat (Wang 2002a: 512–513).

The CITES Secretariat does not possess enforcement powers nor is there an international enforcement agency for CITES obligations. Many see this lack of international enforcement, combined with the fact that enforcement is left to individual State Parties, as one of the main weaknesses of the Convention because the levels of control ‘vary greatly in scope and stringency’ (Birnie & Boyle 2002: 629; Wang 2002a: 509). CITES is designed to promote close cooperation between exporting and importing countries (Aikman 2003: 307–308) but this cooperation is not always forthcoming.

In most countries, environment or customs agencies carry out enforcement, although national police agencies are also frequently involved in investigations. Table 1 provides a complete list of enforcement agencies in the CITES signatories in the region.

A further problem stems from the fact that many CITES signatories, despite their conventional obligations, have not or not adequately implemented domestic laws and regulations for enforcing CITES. The National Legislation Project initiated by the Conference of CITES Parties to review and evaluate national CITES laws adopted by signatories found that in 2006 the legislation in 56 State Parties (28.5% of signatories) generally does ‘not meet all requirements for the implementation of CITES’, and that a further 44 State Parties (23%) have legislation that generally ‘does not meet the requirements for the implementation of CITES’. In other words, ‘approximately half of the Parties whose legislation was reviewed,

still do not have in force all of the legislative and administrative measures necessary to implement the Convention's provisions in an adequate manner' (Vasquez 2006, pers. comm.; Wang 2002a: 509).

A related difficulty arises especially for developing and smaller countries that have limited resources to implement and comply with the many requirements established by CITES. Many nations do not have the financial and human resources to create specialised authorities and compile the reports required by CITES. As a result, the Convention has found limited support among small states, especially among Pacific Island nations (Boer, Ramsay & Rothwell 1998: 107–108).

International monitoring and record keeping

Under Article VIII, paragraph 6 CITES Parties are required to maintain records of the trade in protected species. This mechanism is an important feature of effective control and enforcement and has been described as 'the life blood of trade control' (Favre 1989: 215). The information generated this way can potentially identify routes of the illicit trade and highlight some of the main source, transit and destination points. However, CITES trade statistics are unreliable. One of the main problems is that since the inception of CITES, record keeping in many countries has been poor and the information supplied by export and import countries frequently does not match. This may be a result of administrative deficiencies, lack of enforcement, or in some cases corrupt officials who have 'turned a blind eye' to transactions involving protected species (Favre 1989: 215).

CITES also established a Secretariat to collect trade records from Member Countries and other information about CITES implementation and compliance (Article VIII, paragraph 7; Article XII). Reports are to be submitted annually to the Secretariat. The CITES Secretariat is located in Berne, Switzerland and reports to the Executive Director of the United Nations Environment Programme (Article XII, paragraph 1). The functions of the Secretariat are set out in Article XII, paragraph 2. Importantly, the Secretariat convenes the meetings of CITES signatories which are held every two years in order to review and amend the CITES appendixes and review the effectiveness of the convention (Hewitt 2002: 100). Disputes between signatories over Convention obligations may be referred to the Permanent Court of Arbitration (Article XVIII, paragraph 2).

In summary, in the short and medium term, it is not likely that CITES will play a major role in preventing and suppressing the illegal timber trade. The main focus of the treaty is on species protection; however, many of the timber species protected are not illegally logged or heavily traded. Conversely, many species that are traded illegally are not endangered and thus do not qualify for CITES protection.

Convention on Biological Diversity

The Convention on Biological Diversity was opened for signature in Rio de Janeiro, Brazil on 5 June 1992 at the Second Earth Summit and entered into force on 29 December 1993 ((1992) 31 ILM 818) (see van Heijnsbergen 1997: 34 for the history and development of the Convention on Biological Diversity). The Convention is predominantly concerned with habitat protection by trying to balance the need for economic development with the protection of biodiversity, especially through nomination of reserves in developing countries. The Convention's principal emphasis is on sustainable development and use of natural resources (Article 1), including fauna and flora, recognising 'the interaction between habitats and human populations' (Boer, Ramsay & Rothwell 1998: 111).

In relation to trees and timber, the Convention seeks to protect ecosystems, including forests. To that end, the Convention requires signatories to take steps to limit activities that threaten extinction of species or degradation of ecosystems within their territory. Specifically, the Convention calls on Parties to take active steps for rehabilitating and restoring degraded ecosystems, to create and enforce laws and regulations to protect threatened species, establish special protection areas, and conduct environmental impact assessments of development projects (articles 8 and 9).

The Convention has frequently been criticised for being largely aspirational and achieving little, if any, practical outcomes (Boer, Ramsay & Rothwell 1998: 111–112). The Convention has few binding measures and makes little practical contribution to protecting tropical forests and suppressing the illicit timber trade. Parties have discussed adopting more comprehensive measures to address the problems associated with illegal logging, but these discussions have not produced any enforceable outcomes.

The protection regime under the Convention is remarkably weak in a number of ways. First and foremost, the protection mechanisms are secondary to 'economic and social development and poverty eradication', which are recognised as 'the first and overriding priorities of developing countries'. The Convention also ensures that Parties maintain full sovereignty 'to exploit their own resources [according to] their own environmental policies' (Article 3). Consequently, critics argue that biodiversity protection 'will continue to be limited by other developmental priorities within the individual nations' (Michalowski & Bitten 2005: 154–155).

Second, unlike CITES, the Convention does not protect any particular species and, unlike the World Heritage Convention, it does not protect any particular areas. While the Convention advocates protection of natural habitats, it contains no specific and enforceable measures to achieve this end.

The one strength of the Convention is seen in the financial assistance that developing nations can seek for biodiversity conservation programs. This has, for example, allowed creation of the South Pacific Biodiversity Conservation Programme in 1993 (see 'Pacific Islands Forum' below; Boer, Ramsay & Rothwell 1998: 112).

Convention Concerning the Protection of the World Cultural and Natural Heritage

The purpose of the 1971 Convention Concerning the Protection of the World Cultural and Natural Heritage, also referred to as the World Heritage Convention, is to protect designated cultural and natural sites from destruction, encroachment and exploitation. The Convention seeks to 'establish an effective system of collective protection of the cultural and natural heritage of outstanding universal value, organised on a permanent basis and in accordance with modern scientific methods' (Preamble). The Convention was adopted in Paris on 16 November 1972 and entered into force on 17 December 1975 (1037 UNTS 120). As at 29 November 2007 the Convention had 184 signatories (UNESCO 2006a). Table 5 lists the Parties to the Convention in the Asia-Pacific region.

Table 5: World Heritage Convention signatories in the Asia-Pacific region, 2006

Country	Date of entry into force (accession/ratification)
Australia	22 Aug 1974 (r)
Brunei Darussalam	–
Cambodia	28 Nov 1991 (a)
China (PRC)	12 Dec 1985 (r)
East Timor (Timor Leste)	–
Fiji	21 Nov 1990 (r)
Indonesia	6 Jul 1989 (a)
Japan	30 Jun 1992 (a)
Korea, Republic of (ROK)	14 Sep 1988 (a)
Lao PDR	20 Mar 1987 (r)
Malaysia	7 Dec 1988 (r)
New Zealand	22 Nov 1984 (r)
Palau	11 Jun 2002 (a)
Papua New Guinea	28 Jul 1997 (a)
Philippines	19 Sep 1985 (r)
Russian Federation	12 Oct 1988 (r)
Samoa	28 Aug 2001 (a)
Singapore	–
Solomon Islands	10 Jun 1992 (a)
Taiwan (ROC)	–
Thailand	17 Sep 1987 (a)
Vanuatu	13 Jun 2002 (r)
Vietnam	19 Oct 1987 (a)

Key: (a) = accession; (r) = ratification

Source: CITES (2006a)

Unlike CITES, the World Heritage Convention does not protect particular species, such as types of timber or plants, from extinction. The World Heritage Convention also contains no enforceable mechanisms and imposes no compulsory obligations on State Parties. The Convention is, for the most part, a set of guidelines to encourage signatories to protect their cultural and natural heritage. Article 5 sets out a range of steps that countries may adopt 'in so far as possible, and as appropriate for each country' to achieve the protection, conservation, and presentation of the natural and cultural heritage. The Convention also offers State Parties some assistance to carry out that task. But importantly, the Convention does not prevent countries from destroying or otherwise endangering their natural heritage, and it does not require any mandatory steps of protection and conservation.

The Convention's main concern is protection of the world's natural and cultural heritage of 'outstanding universal value'. Article 2 of the World Heritage Convention defines the term 'natural heritage' to include:

natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view;

geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation;

natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

Guidelines issued for operating the Convention set out in detail the criteria that need to be met to elevate natural heritage to one of 'outstanding universal value'. State Parties may identify their 'inventory of property forming part of the cultural and natural heritage' and submit their proposals to the World Heritage Committee (Article 11, paragraph 1). Article 8 of the Convention established the Intergovernmental Committee for the Protection of the Cultural and Natural Heritage of Outstanding Universal Value, also referred to as the World Heritage Committee. The Committee meets annually in Paris. The Committee collects information about legislative and administrative measures relevant to protection of designated properties of State Parties. It also maintains and updates the List of World Heritage in Danger for natural heritage that requires major operations for their conservation (Article 11, paragraph 3). Inclusion in that list is limited to properties that face 'serious and specific dangers, such as the threat of disappearance caused by accelerated deterioration, large-scale public or private projects or rapid urban or tourist development projects; destruction caused by changes in the use of ownership of the land; major alterations due to unknown causes' (Article 11, paragraph 4). The World Heritage List currently has 851 sites including 166 natural sites. The list of protected natural sites of 'outstanding universal value' includes a great number of sites around the world, including some of the forests in the Asia-Pacific region (Table 6).

Table 6: Natural properties inscribed on the World Heritage List (forests only), 2006

Country	Natural site/forest	Year of listing
Australia	Central Eastern Rainforest Reserve	1986, 1994
	Wet Tropics of Queensland	1988
	Greater Blue Mountains Area	2000
Indonesia	Tropical Rainforest Heritage of Sumatra	2004
	Ujung National Park	1991
	Betung Kerihon National Park (Borneo) ^a	2004
Malaysia	Gunung Mulu National Park	2000
	Kinabalu Park	2000
	Tanan Negara National Park ^a	2004
Papua New Guinea	Lanjak Etimau Wildlife Sanctuary ^a	2004
	Kikori River Basin/Great Papuan Plateau ^a	2006
	Kokoda Track and Owen Stanley Ranges ^a	2006
Philippines	Upper Sepik River Basin ^a	2006
	Puerto-Princesa Subterranean River National Park	1999
	Mt Malindang Range National Park ^a	2006
Russian Federation	Mt Iglit-Baco National Park ^a	2006
	Central Sikhote-Alin	2001
	Virgin Komi Forests	1995

a: Properties submitted on the tentative list

Source: UNESCO (2006b)

While the World Heritage Committee makes decisions about inclusions and amendments to the list of protected sites, inclusion of a property in the list requires the consent of the State Party concerned (Article 11, paragraph 2). The Committee cannot include properties at its own discretion or against the will of the country in which that property is located. Under Article 3 of the World Heritage Convention, State Parties may identify natural properties in their territories that meet the definition under Article 2.

The number of protected sites in the region is relatively small, and Table 6 shows that many countries do not have any forests on the World Heritage List and have not made submissions for their inclusion. It is arguable that some states, especially the geographically smaller ones, may not have any forests worthy of heritage status, but it is remarkable that countries with extensive and unique forests do not have any entries for these natural properties on the World Heritage List. Some countries refuse to elevate the status of their forests – even those threatened by destruction and extinction – to the level of ‘world heritage’, as they do not want to be bound by international law obligations.

The World Heritage Convention emphasises the full sovereignty of State Parties over their cultural and natural heritage and it can be argued that the Convention does more to stress and enforce the sovereign rights of signatories than it contributes to protection of the world's cultural and natural heritage. Although the Convention advocates 'the establishment of a system of international cooperation and assistance' (Article 7) it stresses 'that the duty of ensuring the identifications, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage ... situated on its territory, belongs primarily to that State' (Article 4). The Convention ensures that no foreign government and no international agency can interfere with that aspect of national sovereignty. In practice, it is up to individual governments to declare their forests natural properties of world heritage and protect them accordingly. The recognition and protection cannot occur at the request of foreign governments or international organisations. Consequently, many forests in the region remain unprotected from exploitation and deforestation.

Perhaps the most useful and practical aspect of the World Heritage Convention lies in the creation of a World Heritage Fund (Article 15) to which State Parties may contribute and which the World Heritage Committee administers (Articles 19–26). Contributions to the Fund are for the most part voluntary, and the Convention offers signatories the right to refuse contributions to the fund (Article 16, paragraph 2). The Fund, does, however, offer countries an avenue through which to seek financial and other assistance to protect their cultural and natural heritage.

Convention to Combat Desertification

The United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification Particularly Africa, adopted in Paris on 17 June 1994, entered into force on 26 December 1996 ((1994) 33 ILM 1328). The principal objective of this Convention 'is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification' (Article 2, paragraph 1). The Convention only rudimentarily touches on the issue of deforestation and illegal logging insofar as it promotes 'long-term integrated strategies that focus simultaneously, in affected areas, on improved productivity of land, and the rehabilitation, conservation and sustainable management of land and water resources' (Article 2, paragraph 2). There are no specific and practical measures in this Convention that relate directly to the issues of illegal logging and trafficking in timber and timber products. Furthermore, the Convention explicitly gives 'priority to affected African country Parties' (Article 7) and has limited application in Latin America and the Caribbean, Asia, and the Northern Mediterranean. It does not apply elsewhere. Political support for the Convention remains weak and the Convention has thus far generated limited practical action (Birnie & Boyle 2002: 632).

However, the Convention does contain a 'regional Implementation Annex for Asia' (Annex II) that calls for implementation of national action programs and regional programs which,

among other things, seek to prevent deforestation and environmental destruction. These programs, if implemented successfully, may have beneficial outcomes for the forests in the region. The Convention also obliges developed countries to ‘actively support ... individually or jointly, the efforts of developing country Parties’ and to ‘provide substantial financial resources’ to them (Article 6, paragraphs a and b).

International Tropical Timber Agreement

The International Tropical Timber Agreement (ITTA) was concluded within the framework of the United Nations Conference on Trade and Development in Geneva on 18 November 1983 and entered into force on 1 April 1985 (UN Doc TD/TIMBER/11/Rev.1) (Rummel-Bulska & Osafo 1991: 271–283). It was revised in 1994 (UN Doc TD/Timber.2/16) and underwent some renegotiation between 2002 and 2006. A new ITTA 2006 is expected to come into force in 2008. The text of the new ITTA was not publicly available at the time of writing.

The objectives of the International Tropical Timber Agreement (1983), as stated in Article 1, are:

- (a) To provide an effective framework for cooperation and consultation between tropical timber producing and consuming members with regard to all relevant aspects of the tropical timber economy;
- (b) To promote the expansion and diversification of international trade in tropical timber and the improvement of structural conditions in the tropical timber market, by taking into account, on the one hand, a long-term increase in consumption and continuity of supplies, and, on the other, prices which are remunerative to producers and equitable for consumers, and the improvement of market access;
- (c) To promote and support research and development with a view to improving forest management and wood utilization;
- (d) To improve market intelligence with a view to ensuring greater transparency in the international tropical timber market;
- (e) To encourage increased and further processing of tropical timber in producing member countries with a view to promoting their industrialization and thereby increasing their export earnings;
- (f) To encourage members to support and develop industrial tropical timber reforestation and forest management activities;
- (g) To improve marketing and distribution of tropical timber exports of producing members;

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- (h) To encourage the development of national policies aimed at sustainable utilization and conservation of tropical forests and their genetic resources, and at maintaining the ecological balance in the regions concerned.

Article 2 defines 'tropical timber' as:

non-coniferous tropical wood for industrial uses, which grows or is produced in the countries situated between the Tropic of Cancer and the Tropic of Capricorn. The term covers logs, sawnwood, veneer sheets and plywood. Plywood which includes in some measure conifers of tropical origin shall also be covered by this definition.

The principal purpose of the ITTA is to create a forum for producer and consumer countries of tropical timber and to promote and facilitate the trade in tropical timber among Members. To this end, the Agreement established the International Tropical Timber Organization (ITTO) (Article 3, paragraph 1) with the International Tropical Timber Council – the assembly of all Signatories – as its highest authority (Article 6, paragraph 1). The remaining provisions of the ITTA deal with the constitution and operation of the ITTO and its Council (Articles 3–22), and outline some of the organisation's 'operational activities', including research and development projects (Article 23).

Although the ITTA includes provisions on forest conservation, it is not a conservation treaty, contains no specific provisions on protection of forests or specific species, and makes no references to suppression of the illicit timber trade. In fact, some commentators have observed that the ITTA has 'been unable to halt the illegal logging of tropical timber' (Crowley 2005: 452). The Agreement only contains some basic safeguards about maintaining an ecological balance and reforestation, though it is expected that the revised ITTA to be released in 2008 will feature stronger protection provisions. The Agreement currently does not contain criminal offences. The ITTA, as well as the work of the ITTO, is largely promotional and there are no powers to enforce compliance with principles of conservation, environment protection or sustainable development. Some authors have described the Agreement as 'little more than a commodity market adjustment among consumer and producer states, accompanied by "soft ecological guidelines" and a commitment to introduce sustainable production techniques' (Birnie & Boyle 2002: 633; Salo 2003: 140).

An international convention against timber trafficking

The United Nations has recognised the lack of a comprehensive framework to prevent and suppress the trafficking of timber from illegal logging and has made several attempts to establish global frameworks to more effectively suppress this illicit trade. Equally, there have been calls by academic scholars that 'illegal logging should be addressed as an international

crime' (Salo 2003: 128, 144–146). The advantages of a multilateral treaty designed specifically to combat illegal logging are obvious and include creation of a universally acceptable logging and certification system, guidance for harmonised forest policies and legislation, access to multilateral cooperation and assistance, financial support, consistency of controls, and best use of resources (Watson 2006: 26).

Western nations first attempted to negotiate an international treaty against illegal logging and deforestation in the mid-1980s, but these attempts failed because the main forest-rich nations refused to cooperate, insisting that their forests were sovereign, national resources and should only be dealt with nationally and internally (Davidson 2007: 3). In 1990, the United Nations proposed development of an International Convention on Conservation and Development of Forests. However, this attempt was short-lived as it faced severe opposition from many countries, especially Brazil and Malaysia (Birnie & Boyle 2002: 626).

The topic of trafficking in timber and timber products was discussed at the 15th session of the United Nations Commission on Crime Prevention and Criminal Justice, and at the Conference of State Parties to the Convention in Transnational Organised Crime held in Vienna in 2006. On this occasion, the Indonesian representative raised the matter and emphasised that:

the smuggling of natural resources by organised criminal groups posed a serious threat to the international community by fuelling conflicts, causing significant loss of national revenue, destroying the environment and destabilising border security. The link between the smuggling of natural resources and other types of serious crime, such as corruption and terrorism, was also underscored (UN Doc CTOC/COP/2005/8 para 99).

In its presentation to the conference, the Indonesian delegation specifically advocated international cooperation and technical assistance, and stressed the need for a wide range of instruments on the matter. The Indonesian proposal found some support among other delegations including Thailand and the United States. But there was no broader support for any resolution on the matter, partly because the Indonesian proposal was still in its infant stage, but also because the issues Indonesia raised faced fierce opposition from other timber producing countries, especially Brazil (UNODC Crime Convention Section, Chief, Vienna, 2007, pers. comm., 17 January). As a result, the proposal was only included in the minutes as 'Annex VII, Draft Resolution entitled "International cooperation in preventing and combating international trafficking in timber and timber products from illegal logging"' (UN Doc E/CN.15/2006/20 Annex VII).

Further negotiations followed this initiative and a new resolution was presented at the 16th session of the United Nations Commission in Crime Prevention and Criminal Justice in Vienna in April 2007. The new proposal was developed jointly by delegations from Australia, Indonesia, the Philippines, Thailand and the United States (UN Doc W/CN/15/2007/L.3/Rev. 1, 25 April 2007). The resolution recognises:

That forest products, including timber, wildlife and other forest biological resources harvested in contravention of national laws are the object of illicit international trafficking and ... that such activities have an adverse environmental, social and economic impact in many countries;

... that illicit trafficking in forest products, including timber, wildlife and other forest biological resources, is often perpetrated by individuals and groups, including organised criminal groups that may operate transnationally and that may also be engaged in other illicit activities.

This resolution is purely aspirational in nature. It encourages Member States to strengthen law enforcement and cooperate at bilateral, regional, and international levels. Of practical importance is the draft resolution's request to the United Nations Office on Drugs and Crime (UNODC) to invite an open-ended meeting of an expert group to discuss this issue and identify the need for further international collaboration.

The 2006 and 2007 draft resolutions are among the first international documents to recognise the criminal aspects of the illicit timber trade and to address the involvement of criminal organisations as well as corrupt government officials in this activity. Accordingly, the 2006 draft resolution stresses that the United Nations Convention against Transnational Organised Crime and the Convention against Corruption 'may be utilised to counter international trafficking in timber and timber products from illegal logging' (Preamble).

It is unclear where exactly these proposals will go from here and whether they will ultimately lead to creation of an international convention against illegal trafficking in timber. Given the lack of widespread support for this proposal it is unlikely that such a convention will come into existence anytime soon. The literature is divided on the benefits of such a treaty. In support of such moves, Duncan Brack and colleagues remarked:

If a multilateral, potentially world-wide, agreement can be negotiated, the problem of third-country diversion of course disappears. ... A multilateral agreement should be the final aim of any move towards an international system for controlling the trade in illegal timber. Clearly, however, it will neither be an easy nor a quick road to follow (Brack, Gray & Hayman 2002: para 5.13).

But among other experts there have been critical and pessimistic voices about these proposals. Watson, for instance, argues that:

it would be very difficult to gain consensus towards a binding multilateral agreement. Such an agreement might gain some support if it only focused on the legality requirement. ... Disadvantages of multilateral agreements would also include: slow negotiations and extreme difficulty in getting any final multilateral agreement, lack of 'bottom up' practical initiatives; inability for countries to resource their obligations, including effective participation in a new agreement; difficulty in achieving consensus for action (Watson 2006: 26–27).

International organisations

The key international organisations and programs critical to the illicit trade in timber and timber products around the world are explored in this section. These organisations and programs are the United Nations Environment Programme, the United Nations Commission on Sustainable Development, the United Nations Development Programme, the International Union for the Conservation of Nature and Natural Resources, the United Nations Forum on Forests, and the International Tropical Timber Organization.

United Nations Environment Programme

The United Nations Environment Programme (UNEP) was established at the 1972 Stockholm Conference on the Human Environment and endorsed by the United Nations General Assembly in 1973 (A/RES/2997 (XXVII), 19 January 1973). The Programme is run by the United Nations Economic and Social Council and reports through that Council to the United Nations General Assembly.

Among the principal tasks of UNEP in relation to the illegal timber trade is sponsoring new and promoting existing international environmental law treaties, developing guidelines and best practice principles on environmental protection, administering some conventions such as CITES, and providing assistance to governments in implementing and administering international environmental law and related programs as well as providing technical assistance. UNEP works closely with the International Union for Conservation of Nature and Natural Resources (IUCN) in developing environmental policies and international law (Boer, Ramsay & Rothwell 1998: 28–29; van Heijnsbergen 1997: 41).

United Nations Commission on Sustainable Development

The United Nations Commission on Sustainable Development was established subsequent to the United Nations Conference on Environment and Development, also known as the Second Earth Summit held in Rio de Janeiro, Brazil in 1992 (UNGA Res 47/191 (1992)). It operates as a so-called ‘functional commission’ of the United Nations Economic and Social Council. The Commission’s principal purpose is to monitor, review, and consider progress in implementation of international environmental conventions and related policy. Countries are obliged to provide to the Commission information about their progress in environmental management, and in relation to implementation and adherence to relevant conventions and policies (UNGA Res 47/191 (1992)). The Commission meets annually to review the information provided by Member States and to determine its work program (Boer, Ramsay & Rothwell 1998: 33–35).

United Nations Development Programme

The United Nations Development Programme, established in 1965 (UNGA Res 20029 (XX) (1965)), is concerned primarily with human development. Environmental matters such as illegal logging are not at the centre of the Programme's mandate and its activities. Since the 1990s, the Programme has, however, focused more of its operation on environmental protection insofar as it relates to enhancement of human development. In particular, the Programme contributes considerably to the capacity and institution building in developing countries to ensure that environmental matters are addressed more adequately. The Programme helps review and implement domestic environmental law, and train personnel (Boer, Ramsay & Rothwell 1998: 29–30).

International Union for the Conservation of Nature and Natural Resources

The International Union for the Conservation of Nature and Natural Resources (IUCN), also known as the World Conservation Union, was first established in 1956 and renamed IUCN in 1988. The organisation is governed by a General Assembly, managed by a council, and has a small Secretariat in Gland, Switzerland. The main work of the organisation is carried out by a number of committees specialising in different aspects of conservation. The IUCN has played an important role in development of policies and international law and was responsible for drafting the World Heritage Convention, CITES and the ASEAN Agreement (van Heijnsbergen 1997: 40). IUCN is also involved in the technical review of proposals for CITES listings (Reeve 2002: 32).

The organisation plays no other practical role in preventing and suppressing the illicit trade in timber or timber products but has produced and disseminated a plethora of information about forest protection and sustainable management of forests. Moreover, the IUCN maintains a catalogue of threatened species known as the IUCN Red List. This list serves to identify and catalogue a great range of fauna and flora threatened by extinction. The list is not enforceable in any way, but helps countries identify endangered species, including trees. The list is often seen as a precursor to listing species in the CITES appendixes.

United Nations Forum on Forests

The United Nations Economic and Social Council established the United Nations Forum on Forests on 18 October 2000 (Res 2000/35) as a subsidiary body commissioned to develop a legal framework for all types of forests.

The 1992 United Nations Conference on Environment and Development concluded the Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the

Management, Conservation and Sustainable Development of All Types of Forests, also known as the Forest Principles (UN Doc A/CONF.151/26 (Vol III) (14 August 1992)). The document establishes a basic set of guidelines for sustainable use of forests and calls upon States to implement domestic policies and laws to that end.

Following the United Nations Conference on Environment and Development, the Intergovernmental Panel on Forests (IPF) from 1995 to 1997, and the Intergovernmental Forum on Forests (IFF) from 1997 to 2000, were set up under the auspices of the United Nations Commission on Sustainable Development as two intergovernmental fora for international forest policy development. The IPF and IFF examined a wide range of forest-related topics and presented 270 proposals for action towards sustainable forests. Although the IPF/IFF proposals for action are not legally binding, participants in these processes are under a political obligation to implement the agreed proposals for action and each country is expected to conduct a systematic national assessment of the IPF/IFF proposals for action and to plan for their implementation.

The United Nations Forum on Forests was established to carry on the work by building on the IPF and IFF processes and has developed a Plan of Action with the aim of advancing the IPF/IFF proposals (UN Doc E/CN.18/2001/3/Rev.1 Annex). This plan includes a list of 16 elements to implement the proposals, covering all aspects of forest conservation and management. The plan does not contain any specific references about suppressing and preventing the illegal trafficking in timber and timber products.

International Tropical Timber Organization

The International Tropical Timber Organization (ITTO) was established in 1983 by virtue of Article 3, paragraph 1 of the ITTA. The Organization's headquarters is in Yokohama, Japan. The International Tropical Timber Council – the assembly of all signatories of the ITTA – is the ITTO's highest authority (Article 6, paragraph 1).

The ITTO seeks to achieve sustainable development of tropical forests by balancing economic and environmental interests in relation to tropical timber. Its purpose is to encourage sustainable development by helping the tropical timber industry manage, and thus conserve, the resource base upon which it depends.

The ITTO has produced a number of documents including many guidelines about sustainable management and use of forests, but has done only a little work on the illegal timber trade (Davidson 2007). However, in recent years the ITTO has paid more attention to issues such as species protection and illegal logging. For example, in November 2001, the 44 countries represented at the 31st session of the International Tropical Timber Council issued a decision that further recognised the problems of illegal logging and associated trade, and committed the organisation and its members to taking action to tackle the

problem (EIA & Telapak 2002: 3). The Yokohama Action Plan adopted by the ITTO in 2002 involves a number of specific initiatives aimed at enhancing forest law enforcement in producing member countries and improving cooperation between the ITTO and CITES. Funding by the United States has recently enabled the ITTO to expand its portfolio by helping countries comply with CITES documentation requirements, compile and assess CITES trade data discrepancies, and also support the regional Forest Law Enforcement and Governance (FLEG) ministerial process (US Department of State 2006?: 8, 12).

Regional conventions and organisations

One of the difficulties of international conventions dealing with protection of forests and species is that they were created to address global problems, which all countries face. But these conventions are often unable to deal with specific regional problems that are unique to a particular geographical area. As a result, a number of regional organisations in the Asia–Pacific region have taken on a mandate to develop mechanisms to monitor and regulate the timber trade in the region, and have developed a range of regional agreements. However, there is no single regional organisation and no single regional environmental strategy for the countries in the Asia–Pacific region. While there are sub-regional organisations, such as ASEAN and the Pacific Islands Forum, the region lacks any ‘mega-organisation’ equivalent to, for instance, the African Union or the Organization of American States. The cultural, political, geographical and environmental diversity of the region has thus far prevented creation of such a forum. ‘The decentralised pattern of problem solving in the Asia–Pacific region’, observes Roda Mushkat, ‘is understandable given the cultural, economic, linguistic, political, religious and social diversity which characterises the region’ (Mushkat 1989: 37). In 1992, James Crawford remarked that ‘[f]aced with this diversity and lack of common organisation, it is hardly remarkable that a unified approach to the management of the environment in the Asia–Pacific region has not evolved. It would be surprising if it had’ (Crawford 1992: 32). The key regional organisations and treaties relevant to the illicit trade in timber and timber products in the Asia–Pacific region are explored in this section.

Association of Southeast Asian Nations

Among the most influential organisations in the Asia–Pacific region is the Association of Southeast Asian Nations (ASEAN), which was established in 1967. The organisation currently has 10 member countries including Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam. ASEAN is, for the most part, concerned with trade and economic cooperation, but is also addressing other matters of so-called ‘functional cooperation’ and development, including some environmental issues.

Beginning in 1981 with the Manila Declaration on the ASEAN Environment (reprinted in Koh 1996: 4–5), the organisation has produced a range of general declarations on environmental matters. See, for example, the Bangkok Declaration on the ASEAN Environment, 20 November 1984 [reprinted in Koh 1996: 18–21] and other statements relating to specific issues (Boer, Ramsay & Rothwell 1998: 43) such as heritage parks and reserves (see, for example, ASEAN Declaration on Heritage Parks and Reserves, Bangkok, 20 November 1984 [reprinted in Koh 1996: 14–15]; ASEAN Declaration on Heritage Parks, Yangon, 18 December 2003 available at <http://www.aseansec.org/15524.htm>, accessed 8 January 2007) and sustainable development (see, for example, Jakarta Resolution on Sustainable Development, 30 October 1987 [reprinted in Koh 1996: 52–53]; Kuala Lumpur Accord on the Environment and Development, 19 June 1990 [Koh 1996: 66–67]; Singapore Resolution on Environment and Development, 18 February 1992 [Koh 1996: 71–76]; Bandar Seri Begawan Resolution on Environment and Development, 26 April 1994 [Koh 1996: 78–79]; Yangon Resolution on Sustainable Development, 18 December 2003 available at <http://www.aseansec.org/15522.htm>, accessed 8 January 2007). In addition, ASEAN maintains several working groups that touch on environmental matters, including one working group on multilateral environmental agreements and another on nature and biodiversity (Keyuan 2004: 350–351).

The earliest ASEAN document relating specifically to timber and forests dates back to 1981 when the ASEAN Economic Ministers on Agriculture and Forestry concluded the Jakarta Consensus on ASEAN Tropical Forestry (reprinted in Koh 1996: 8–11). This document sets out the parameters of a common ASEAN Forestry Policy to address issues such as conservation, reforestation, management and use of forest resources, research and development and education and training (Article I). The consensus further promotes technical cooperation in this field and proposes creation of a suitable institution to facilitate regional cooperation.

In 1985, ASEAN concluded a regional Agreement on the Conservation of Nature and Natural Resources, adopted in Kuala Lumpur on 9 July 1985 (reprinted in Koh 1996: 28–47). At the time of its inception, some considered this Agreement as ‘the most modern regional instrument ever adopted in the field of conservation’ (Mushkat 1989: 26–27; Rummel-Bulska & Osafo 1991: 343–351). The ‘fundamental principle’ of the Agreement, as stated in Article 1, paragraph 1, is to provide for:

measures necessary to maintain essential ecological process and life-support systems, to preserve genetic diversity, and to ensure the sustainable utilization of harvested natural resources under their jurisdiction in accordance with scientific principles and with a view to attaining the goal of sustainable development.

'To this end' states Article 1, paragraph 2, the Contracting Parties 'shall develop national conservation strategies, and shall co-ordinate such strategies within the framework of a conservation strategy for the region.'

The Agreement encourages development of national strategies 'to conserve animal and plant species' and 'to ensure sustainable use of harvested species; protect endangered species; and conserve endemic species' (Article 3, paragraph (2)). More specifically, the Convention protects a range of 'endangered' and 'threatened' species listed in the Appendix by regulating trade in these species and prohibiting removal of those species except in special circumstances with the consent of the designated authorities (Article 5) (Crawford 1992: 37–38). At the inception of the Agreement, the Appendix only contained fauna; no plants were included in the list of endangered and threatened species (Koh 1996: 46–47). In relation to the protection of species, the ASEAN Agreement is designed to complement the obligations under CITES.

With regard to timber and forest resources, the Agreement contains specific provisions in Article 6:

- (1) The Contracting Parties shall, in view of the role of vegetation and forest cover in the functioning of natural ecosystems, take all necessary measures to ensure the conservation of the vegetation cover and in particular of the forest cover on lands under their jurisdiction.
- (2) They shall, in particular, endeavour to
 - (a) – control clearance of vegetation;
 - endeavour to prevent bush and forest fires;
 - prevent overgrazing by, inter alia, limiting grazing activities to periods and intensities that will not prevent regeneration of the vegetation;
 - (b) regulate mining and mineral exploration operations with a view to minimizing disturbance of vegetation and to requiring the rehabilitation of vegetation after such operations;
 - (c) set aside areas as forest reserves, inter alia, with a [view] to conserve the natural forest genetic resources;
 - (d) in reforestation and afforestation planning avoid as far as possible monoculture causing ecological imbalance;
 - (e) designate areas whose primary function shall be the, [sic] maintenance of soil quality in the catchment considered and the regulation of the quantity and quality of the water delivered from it;
 - (f) ensure to the maximum extent possible the conservation of their natural forests, particularly mangroves with a view, inter alia, to maintaining maximum forest species diversity;

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- (g) develop their forestry management plans on the basis of ecological principles with a view to, maintaining potential for optimum sustained yield and avoiding depletion of the resource capital.

Further provisions on environmental degradation and environmental planning measures can be found in Articles 10, 12 and 13. The Agreement also proposes creation and management of protected areas 'for the purpose of safeguarding ... the ecological and biological processes essential to the functioning of the ecosystems of the region and satisfactory population levels for the largest possible number of species of fauna and flora belonging to those ecosystems' (Article 13) (Boer, Ramsay & Rothwell 1998: 112–114).

The 1985 ASEAN Agreement requires a serious commitment to forest protection in a broader environmental context. Few Member Countries have been willing to make that commitment; in fact, so few that the Agreement is still not in force (Birnie & Boyle 2002: 633). While at the time of its inception the Agreement was praised for its 'admirable and innovative features' (Boer, Ramsay & Rothwell 1998: 228), in practice, the Agreement has failed to establish a multilateral, enforceable framework for environmental protection in ASEAN Member States. Most countries have been unable or unwilling to meet the obligations stipulated in the agreement (Keyuan 2004: 351).

In 1978, ASEAN launched its first Environment Programme (ASEP) (Koh 1996: 90–113), a regional strategy designed to coordinate efforts in ASEAN Member Countries to address some key environmental issues of common concern. The ASEP was designed for phases of five years duration, and priority areas and goals are to be formulated at the end of each phase. The issue of illegal logging and deforestation was first recognised in Phase II of ASEP (ASEAN Environment Programme (ASEP) Phase II 1983–87, reprinted in Koh 1996: 121). In 1994, ASEP was changed into a Strategic Plan of Action for the Environment, a new five-year plan for the period 1994–98. The new plan advocates 10 key strategies 'to deal with environmental problems in a cooperative framework' (Koh 1996: 182). The strategies and action plan formalises cooperation in the area of nature conservation and biodiversity (Keyuan 2004: 351; Mushkat 1989: 26) but does not include any specific steps to address the issues of illegal logging and trafficking in timber. Current ASEAN Plans of Action relating to environmental issues do not address these issues either (for a complete list see <http://www.aseansec.org/8923.htm> [accessed 8 January 2007]).

In summary, ASEAN's cooperation on environmental issues has produced a large number of documents but no framework of useful law or enforceable policies about trafficking in timber and timber products. For fear of interference with domestic issues of national sovereignty, ASEAN, whose members are home to the majority of tropical forests in the region, has been unable to come up with comprehensive plans and mechanisms to prevent and suppress illegal logging and the illicit trade in timber in the region. However, ASEAN, like no other organisation in the region, is best positioned to lead the way in environmental cooperation in Southeast Asia as it can create strong economic incentives for, and exercise peer pressure

on, countries that are particularly vulnerable to illegal logging. It would be desirable for ASEAN to strengthen its mandate and activities in this field and also work closely with non-member states in the region.

Asia–Pacific Economic Cooperation Forum

The Asia–Pacific Economic Cooperation Forum (APEC) was established in 1989 and currently has 21 members from around the region, including the United States, Canada and some Latin American nations. Although APEC's principal focus is on economic cooperation, it has recently added other matters such as security cooperation to its agenda. Furthermore, APEC has adopted a number of resolutions on environmental protection and sustainable development, including an APEC Environmental Vision Statement (Boer, Ramsay & Rothwell 1998: 36), though these documents lack any specific references to illegal logging and the illegal trade in timber and timber products.

Pacific Islands Forum

The Pacific Islands Forum was established in 1971 under the name South Pacific Forum. It brings together the heads of government of all independent countries in the South Pacific, including Australia and New Zealand. The Forum Secretariat is located in Suva, Fiji. Heads of government of Forum countries meet annually to discuss issues of common concern and determine the work of the Forum Secretariat. The Forum is a political forum and does not generate binding conventions or other international law; declarations and other Forum documents are generally seen as policy directives for Member Countries (Boer, Ramsay & Rothwell 1998: 40).

Among the many issues the Forum has considered since its inauguration is a range of environmental issues, focused predominantly on maritime and fishing issues. Given the geography and natural vegetation of most island states, forestry is not a principal concern for most countries, except for Australia, New Zealand and the Melanesian countries of Fiji, Papua New Guinea, the Solomon Islands and Vanuatu.

The Forum and its predecessor organisations, the South Pacific Forum and the South Pacific Commission, have not produced any binding treaties or resolutions on environmental issues. Among the few conventional initiatives in the South Pacific region is the 1976 Apia Convention on Conservation of Nature in the South Pacific, which entered into force on 28 June 1990 (Giraud-Kinley 1999: 139; Kiss 1983: 463–465; Lawrence 1994: 213) but to this day has only five signatories (Australia, Cook Islands, Fiji, France and Samoa) and is of negligible practical relevance.

The principal concern of the Convention is with the conservation of indigenous flora and fauna in the Pacific Islands. The Convention recognises ‘the importance of natural resources from a nutritional, scientific, educational, cultural and aesthetic point of view’ and acknowledges ‘the dangers threatening these irreplaceable resources’ (Preamble). To that end, the Convention encourages creation of protected areas, which ‘will safeguard representative samples of the natural ecosystems occurring therein (particular attention being given to endangered species)’ (Article II). Article III states that the ‘boundaries of national parks shall not be altered’ and that the ‘resources of national parks shall not be subject to exploitation, for commercial profit, except after the fullest examination’. However, the Convention does not contain any specific or practical requirement to achieve its goals. It leaves it to Contracting Parties to ‘use their best endeavours to protect such fauna and flora ... so as to safeguard them from unwise exploitation and other threats that may lead to their extinction’ (Article V, paragraph 1). The Convention further establishes a list of protected species of indigenous fauna and flora (Article V, paragraph 2) and limits the use of protected species (Crawford 1992: 36–37; Tsamenyi 1991: 148). The main reason for the relative irrelevance of the Convention is the lack of any meaningful requirements along with the fact that it took over 14 years to find four signatories to bring the Convention into force. During that time a number of other initiatives in the region and elsewhere have overshadowed the 1976 Convention. In particular, there is considerable overlap between the 1976 Convention and the Convention on Biological Diversity of 1992 (see section ‘Convention on Biological Diversity’, p. 24).

South Pacific Regional Environment Programme

Among the more important regional initiatives is the South Pacific Regional Environment Programme (SPREP). In 1978, the South Pacific Commission, in cooperation with UNEP, and the United Nations Economic and Social Commission for Asia and the Pacific, established the SPREP, based in Nouméa, New Caledonia. In 1982, SPREP adopted the South Pacific Declaration on Natural Resources and the Environment, and agreed on the Action Plan for Managing the Natural Resources of the South Pacific for the purpose of ‘providing a framework for environmentally sound planning and management, suited to the needs and conditions of the countries and people in the region and to enhance their own environmental capabilities’ (Giraud-Kinley 1999: 143–145; Lawrence 1994: 213; Mushkat 1989: 24; Tsamenyi 1991: 147–148). This Declaration and Action Plan led in 1986 to development of the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, which entered into force on 22 August 1987 ((1987) 26 ILM 38). The Convention establishes some important principles ‘to preserve the natural heritage’ of the region (Preamble) but is limited to the marine and coastal areas (Article 2, paragraph (a)) (Crawford 1992: 33–35; Giraud-Kinley 1999: 135–136, 140–141; Tsamenyi 1991: 150–152).

The SPREP was elevated to a separate international organisation in 1991 and is now based in Apia, Samoa (Agreement establishing the South Pacific Regional Environment Programme, 16 June 1993). The scope and mandate of SPREP is broad, addressing a great range of environmental concerns in the region (Rose 1994: 645). While protection of tropical timber and suppression of the illicit timber trade are not specifically mentioned in SPREP's Action Plan, the Programme is concerned with a range of issues relating to sustainable development, protection and use of natural resources in an ecologically sound way, protecting ecosystems, and providing training and creating public awareness (Boer, Ramsay & Rothwell 1998: 41–43). SPREP has also been involved in developing the Environment Action Plan for the South Pacific region, which focuses on a range of environmental issues including biological diversity, protection of conservation areas, and development of regional strategies for protection of vulnerable species and ecosystems (Boer, Ramsay & Rothwell 1998: 116).

Asia–Pacific Forestry Commission

The Asia–Pacific Forestry Commission is a regional commission of the Food and Agriculture Organization (FAO). It advises and acts on four main forest issues: forestry management, forest policy, forest governance and dealing with invasive species. The Commission develops regional guidelines for best practices in forest management and assists in capacity building for implementation of those guidelines in the countries in the region. Furthermore, the Commission helps countries develop, review, and strengthen domestic and regional forest policies. The Commission's forest governance work 'addresses how forest-related decisions are made and implemented, including who participates in the decision-making process at local, national and regional levels' as well as forest legislation, regulations, criteria and indicators and codes of conduct (see also <http://www.fao.org/forestry/site/33592/en/>).

The Commission has done limited work specific to illegal logging and the illegal trade in timber and timber products, though much of its work and projects help prevent and suppress these phenomena. However, the Commission cannot create binding legal provisions, and has no role in enforcing domestic laws and regional strategies.

Asia Forest Law Enforcement and Governance Ministerial Process

One of the most recent forest initiatives relevant to the illegal trade in timber and timber products comprises a series of conferences known as FLEG, the Forest Law Enforcement and Governance initiative. The FLEG processes were originally stimulated by the G8 'Action Programme on Forests' and are now coordinated by the World Bank. The FLEG conferences bring together some of the key producing and consuming countries in four subregions.

The first of these initiatives was FLEG East Asia which began in Bali, Indonesia in September 2001 and now involves 10 countries from the region as well as the United States and the United Kingdom, the two main sponsors of the FLEG process (Seneca Creek 2004: 29–30). The 2001 Bali meeting adopted a Ministerial Declaration (available at www.illegal-logging.info/uploads/Bali_ministerial_declaration.pdf) which, unlike other existing regional initiatives, specifically addresses ‘violations of forest law and forest crime, in particular illegal logging and associated illegal trade’ and recognises the threats to ecosystems and biodiversity and the resulting serious economic and social damage (Preamble). The Declaration sets out a range of measures to improve regional cooperation to suppress forest crime especially by fostering information exchange, law enforcement cooperation, institution of a prior notification system for commercially traded timber, awareness raising, improving forest-related governance and reducing the potential for corruption.

The FLEG Declaration is the most comprehensive regional agreement to date addressing the specific characteristics and attendant circumstances of the illicit trade in timber and timber products. The Annex to the Declaration sets out a comprehensive ‘Indicative List of Actions for the Implementation of the Declaration’, which includes a range of national measures to be taken at political, legislative and judicial levels, and sets out specific initiatives to be taken in relation to decentralisation; institution and capacity building; forest concession policies; conservation and protected areas; public awareness, transparency, and participation; and bilateral actions. Furthermore, the Annex advocates a range of regional and inter-regional actions including information/expertise sharing, trade/customs, bilateral actions and research. The Declaration and its Annex are not binding and do not set out any specific offences to suppress the illicit timber trade in the region. However, the document does recommend a number of measures to enhance law enforcement and cooperation including determining law enforcement priorities; developing swift prosecution, judgements and enforcement; strengthening penalties and sanctions against illegal activities; improving communication between national and local levels to prevent and detect crime; developing regional networks of monitoring systems, including forest crime monitoring; and creating voluntary bilateral agreements for combating illegal logging and the trade in illegal timber and forest products. There have also been some practical outcomes of the FLEG process such as piloting a tracking system for logs, and development of a standard for legal and ‘conflict-free’ timber (US Department of State 2006?: 7).

Since the inaugural meeting of FLEG, there have been several follow-up meetings of the FLEG Task Force and Advisory Group, and it is anticipated that a further ministerial meeting will take place in 2008 or 2009. The Declaration and the FLEG process are generally seen as important steps towards coordinating and harmonising national responses to the illicit timber trade in the region, and there seems to be consensus that creation of FLEG has led to greater awareness of the issue of illegal timber among national governments and to a greater focus on illegal logging by international institutions. FLEG member nations have

yet to translate the FLEG outcomes into national actions. A first step can be seen in the bilateral agreements that were signed between Indonesia and some consumer countries; these agreements have their origin in the FLEG process (see section 'Indonesia', p. 51). Furthermore, in reaction to the Asia–Pacific FLEG process, similar regional initiatives have started in Africa, Europe and North Asia (ENA-FLEG) (Davidson 2007: 9; Seneca Creek 2004: 29–30; Speechly 2003: 220; US Department of State 2006?: 7; Watson 2006: 28).

Asia Forest Partnership

The Asia Forest Partnership has been created at the initiative of the Government of Japan following the 2001 FLEG process and the 2002 Johannesburg Summit. The Partnership, which is still in its infancy, has been set up to create a regional forum for information exchange and to improve the efficiency of addressing three core issues: illegal logging, control of forest fires, and rehabilitation and reforestation of degraded lands. Meetings of the Partnership are held annually and attended by some 15 to 20 countries. The meetings have yet to produce any declarations or binding measures.

Observations

This chapter has demonstrated that there is a great array of documents, treaties, agreements and organisations dealing with various aspects relating to the illegal trade in timber and timber products. Some of these initiatives focus on species protection; others are concerned with conservation of forests and other ecosystems. Some deal with sustainable development, while others relate to protection of natural heritage or habitats. However, with the exception of the FLEG initiative in East Asia, none of these mechanisms has been designed specifically to prevent and suppress the illegal logging and illicit trade of timber and timber products. The initiatives only rudimentarily address these issues and there is, to date, no single treaty and no single organisation that deals with the criminal aspects of the global timber trade.

As well, it has been observed that the existing international legal and institutional framework is devoid of any enforceable mechanisms. With the exception of CITES, there are, to date, few environmental standards that can be enforced; in fact, most countries stress the sovereign right of individual states to exploit their forests at their discretion. There are no penalties and sanctions for countries that exploit their forest resources beyond sustainable limits or ignore illegal logging or other aspects of the illegal timber trade. CITES, too, is limited in its application as it only applies to a narrow selection of tree species and only contains limited control and enforcement measures, particularly insofar as the illegal trade in protected species is concerned.

A further problem stems from the fact that many countries in the region have been reluctant to adhere to the principles of international environmental law and fail to contribute constructively to protection of forests and other natural resources in the Asia–Pacific region. This is due, in part, to some countries not seeing any tangible benefits in this body of law and perceiving international environmental principles as obstacles to economic development (Boer, Ramsay & Rothwell 1998: 103). Moreover, for countries without vast forest areas, the conventions and other instruments may seem irrelevant and unnecessarily burdensome. Especially smaller and economically less developed nations with limited human resources and financial capital have difficulties in committing themselves to the requirements under international environmental law (Hewitt 2002: 99). One observer has remarked that:

More work needs to be done in this area to determine whether the obligations imposed by environment conventions do in fact hinder the economic development of the states concerned, or whether the problem here is more one of perception, reflecting a lack of information about the conventions as well as a lack of resources to implement them (Lawrence 1994: 218).

Some first steps have been taken to promote the benefits of forest conservation under international environmental law more widely and assist developing countries with accessing and implementing the many treaties and agreements. The Conference of CITES Parties, for instance, has acknowledged the difficulties of small island states in accessing CITES and has recommended measures to strengthen adoption of CITES, especially in Oceania, along with mechanisms to improve training and awareness in the region (Hewitt 2002: 108–109). Another important mechanism is creation of the FLEG initiative in East Asia in 2001. FLEG is the only regional forum that specifically addresses the illicit trade in timber and timber products. The initiative is still in its infancy, but it would be desirable to strengthen the mandate of the FLEG process and make its work binding and enforceable.

Sources of illegal timber

This chapter explores the sources of timber that is traded illegally in the Asia–Pacific region; of particular concern is the issue of illegal logging. It also outlines different types of activities associated with illegal logging, provides an overview of levels and patterns of illegal logging in the region, and examines the situation and policies in the key source countries of illegal timber in the Asia–Pacific region.

Illegal logging

What is illegal logging?

The term ‘illegal logging’ is used broadly to describe a range of activities associated with the felling of trees. While the term has widespread use it is largely devoid of any technical meaning and does not have a foundation in international law or in any of the domestic laws of the countries in the region. Illegal logging usually refers to one or more of the following activities (Brack 2003: 195; Brack, Gray & Hayman 2002: 53; JP Consulting 2005: 1; Watson 2006: 17–18):

- logging of protected or endangered species
- logging in protected areas
- excessive logging
- logging without permit or with fake permit
- illegal obtaining of logging permits
- damaging trees.

Some reports, especially those issued by NGOs, occasionally use the term illegal logging more loosely to refer to any kind of unsustainable forest activity. The term has also been used to describe harvesting activities that may infringe upon the customary rights of Indigenous people and local communities. These types of activities are not explored further in this report.

Logging of protected or endangered species

Illegal logging frequently involves the felling of trees that belong to a protected species. Most countries have placed endangered tree species under protection in domestic laws and prohibit the logging of these species. Illegality may thus result if trees are logged in violation of these prohibitions and in the absence of any authority or permit to fell them.

Logging in protected areas

Logging activities may be illegal because of the location in which they are carried out. This is usually the case if harvesting of trees takes place in geographical areas that are subject to environmental protection, such as national parks and conservation areas. Most countries prohibit logging activities in areas that have been placed under protection to preserve their biodiversity, natural habitat and heritage, or to protect the ownership rights of Indigenous people or local communities. This type of illegal logging also includes situations in which logging is carried out outside concession boundaries, or in particularly vulnerable areas such as steep slopes, river banks and water catchments.

Excessive logging

A further type of illegal logging involves activities that exceed allocated concessions. Usually this involves instances in which concession holders harvest trees in excess of their logging quota. This problem is particularly common in developing nations with little or no capacity to take inventories of their forests, so there is no ready way to account for excess harvests.

Logging without permit or with fake permit

Many logging activities are illegal because the person or organisation carrying out the activities does not hold a valid permit to do so. This is the case if permits were never obtained, have expired, or if the activities carried out are outside the scope of the logging permit. Areas that are infrequently inspected by government officials are particularly vulnerable to unauthorised logging of this kind. Another method involves duplication of felling licences. In areas where surveys are carried out frequently, the use of fake permits or duplications of real permits is relatively common (Abt Associates Inc. 2006: 46).

Illegally obtaining of logging permits

Perhaps one of the most widespread forms of illegal logging involves instances in which logging concessions have been obtained illegally. This may occur because of fraud or by providing false information to forest authorities; more commonly though, government officials often illegally issue logging concessions in return for bribes. Allegations of corruption of government officials are particularly widespread in the forestry sector of many countries in the region and equally affect the harvesting, processing, transportation export, and import stages of the timber trade (see also chapters 'Transit points for illegal timber' and 'Destinations for illegal timber').

Damaging trees

A final type of activity associated with illegal logging involves the damaging of trees, especially by way of girdling, ringbarking or burning. The purpose of this activity is to damage the trees to an extent that they can be harvested legally, as most countries allow removal of damaged trees to reduce the risk of bushfires and other hazards. There have been numerous reports of loggers damaging forests deliberately to necessitate their removal and take advantage of this legal loophole. Once removed from its original place, it becomes difficult if not impossible to distinguish legally sourced timber from illegally damaged trees (Abt Associates Inc. 2006: 43; Crowley 2005: 436).

Levels of illegal logging

The true magnitude of illegal logging in the region is unknown due to the illicit and often clandestine nature of the activities involved, and the absence of comprehensive surveys and research. Figures for the annual volume or level of illegal logging in the region do not exist. Much illegal logging activity in the region takes place in remote areas and is thus difficult to monitor and quantify. Many, if not most, instances of illegal logging in the region remain undetected.

However, in comparison to other aspects of the illegal timber trade in the Asia–Pacific region, such as processing and consumption of illegal timber (see also chapters ‘Transit points for illegal timber’ and ‘Destinations for illegal timber’), activities related to illegal logging in the region are comparatively well documented and widely known. The sheer extent of the literature on this topic may in fact be reflective of the magnitude of illegal logging in the region and of the associated social, economic and environmental problems.

In recent years, a number of estimates about the volume of ‘suspicious wood production’ have been published by international organisations and researchers, especially in the United States. They have estimated that the value of suspicious wood production worldwide exceeds US\$22.5b (Table 7).

Table 7: Volume and estimated value of suspicious wood production Worldwide

	Suspicious volume total (’000m³)	Estimated value of suspicious volume (US\$m)
Roundwood	130,994	12,053
Lumber	25,236	6,917
Plywood	9,957	3,535
Total	-	22,505

Source: Seneca Creek (2004: 21)

A report that Seneca Creek consultancy prepared in 2004 for United States government agencies estimates that most of the suspicious wood production involves roundwood. Quantities of suspicious lumber and plywood production are lower in volume but involve processes that add value, thus contributing to high profit margins at these stages of the illicit trade (Table 7). According to the same report, suspicious wood production is generally estimated to be higher for softwood than for hardwood (Table 8).

Only China, Japan and Russia have considerable softwood production in the Asia–Pacific region. In China, levels of suspicious softwood production are particularly high. It has been estimated that approximately 31.5 percent of China’s softwood production involves suspicious wood. Levels are equally high for China’s hardwood production. Russia’s softwood roundwood production, which makes up about 10 percent of global production, also involves high levels of suspicious wood (about 17%). Hardwood production in Russia, although involving smaller volumes, shows similar levels. The highest levels of suspicious wood production are said to occur in Indonesia, where between 55 and 65 percent of the hardwood production seems to involve timber from illicit sources (Table 8).

Table 8: Suspicious wood production and imports^a by type of wood and source country, 2002

	World total	China	Indonesia	Japan	Malaysia	Russia
Softwood						
Roundwood						
Production ('000m ³)	1,002,750	37,900	206	13,310	90	105,100
Suspicious ^a (%)	3.8	31.5	0.0	6.5	0.0	17.0
Lumber						
Production ('000m ³)	292,067	5,182	0.0	13,970	0.0	16,900
Suspicious (%)	2.0	31.5	0.0	6.5	0.0	0.0
Plywood						
Production ('000m ³)	28,804	3,648	n.m.	1,368	0.0	300
Suspicious (%)	4.6	31.5	n.m.	6.5	0.0	15.0
Hardwood						
Roundwood						
Production ('000m ³)	660,223	20,200	53,100	6,400	21,500	41,000
Suspicious (%)	14.9	30.6	58.0	5.5	11.8	17.0
Lumber						
Production ('000m ³)	110,357	4,249	8,000	432	4,450	2,300
Suspicious (%)	17.5	30.6	65.0	5.5	11.8	20.0
Plywood						
Production ('000m ³)	30,275	8,513	7,500	1,368	4,700	1,500
Suspicious (%)	28.5	30.6	55.0	5.5	11.8	15.0

a: Includes domestic production and imports

Key: n.m. = not meaningful or de minimis

Source: Seneca Creek (2004: 15–16)

There is ample evidence of illegal logging taking place in its various forms and types in the countries of the Asia–Pacific region, and allegations about unauthorised activities as well as corruption are widespread. It comes as no surprise that illegal logging is more prevalent in the developing countries of the region.

Country profiles

This section outlines the types and patterns of illegal logging activities in individual countries. The timber resources, illegal logging activities, policies and legislation, and offences and enforcement of Indonesia, Malaysia, Cambodia, Russia, Papua New Guinea, the South Pacific Islands, China, Australia and New Zealand are examined.

Indonesia

Timber resources

Indonesia has the most extensive tropical forest areas in the Asia–Pacific region and the most valuable timber resources of any country in the region. Tropical forests cover approximately 110 million hectares. Only Brazil has greater forest resources than Indonesia. Indonesia's tropical forests can be found throughout the archipelagic country, with the largest forest areas in Sumatra and Kalimantan (ITTO 2006: 149; Seneca Creek 2004: 66).

Most of Indonesia's forests (about 88%) consist of so-called tropical moist forests. Some of these areas are swamp, tidal or alpine forests and thus difficult to access, so they are commercially not of great interest. About 65 percent of Indonesia's forests are classified as mixed hill forests, which are the most important source for commercial exploitation (ITTO 2006: 149). Commonly harvested timber species found in mixed hill forests and used for industrial roundwood, sawn timber, and plywood production include meranti (*Shorea* spp.), keruing, kapur, mersawa and teak (ITTO 2006: 152).

As noted in chapter 'International frameworks', a further timber species that has been logged extensively in the past is ramin. Ramin is a highly valued timber with versatile usage. The excessive exploitation of ramin led to its inclusion as a protected species under domestic law in Indonesia, and also in CITES Appendix III in August 2001 and in Appendix II in October 2004. Legitimate harvesting of ramin has since declined, but illegal logging continues (ITTO 2006: 152). Indonesia is currently considering an application to include merbau, a species commonly found and logged in Papua, in CITES Appendix III (EIA & Telapak 2005: 2).

It is estimated that the annual harvesting of timber in Indonesia amounts to approximately 0.37 to 0.6 million hectares per year (EIA & Telapak 2002: 2). Most of the logging,

approximately 69 percent, is carried out in natural forests (252,780 hectares per year); only 31 percent occurs in plantations (114,760 hectares), contributing 85 percent and 15 percent respectively to the annual log production (Indonesia Ministry of Forestry 2002).

Indonesia accounts for about one-quarter of the world's tropical wood production (Seneca Creek 2004: 65), but estimates about exact levels of production vary greatly. Indonesia is, after Malaysia, the world's second-biggest producer of tropical roundwood (ITTO 2007: 4–5). The ITTO estimates that the annual log production in Indonesia in recent years has been approximately 26–28 million cubic metres annually (ITTO 2007: 76). Most of Indonesia's wood production involves tropical hardwood, approximately 53 million cubic metres per year (Table 9). It has been estimated that Indonesia's annual lumber production amounts to 8 million cubic metres and plywood production to 7.5 million cubic metres (Seneca Creek 2004: 15–16) (Table 9).

Table 9: Suspicious wood production by type of wood, Indonesia, 2002

	Production ('000m ³)	Suspicious (%)
Softwood		
Roundwood	206	0
Lumber	0	0
Plywood	n.m.	n.m.
Hardwood		
Roundwood	53,100	58
Lumber	8,000	65
Plywood	7,500	55

Key: n.m. = not meaningful or de minimis

Source: Seneca Creek (2004: 15–16)

Illegal logging

Indonesia has a long history of uncontrolled exploitation of its timber resources. Geographical, socioeconomic, and political factors make it difficult to monitor and control logging in large parts of the country and consequently illegal logging thrives, especially in the more remote parts of Indonesia. NGOs estimated that in 2001, 73 percent of logging in Indonesia was illegal and that, as a result, the annual log harvest is more than three times the sustainable yield (EIA & Telapak 2002: 2). A more recent NGO report suggested 76 percent of the annual timber production comes from illegal sources (Stark & Cheung 2006: 31, 39). While this figure cannot be verified and may be exaggerated, there appears to be consensus among most sources that illegal logging accounts for more than 40 percent of Indonesia's total wood supply, with many reports suggesting that the volume of illegal logging exceeds legal production. Research conducted in 2004 suggests that between 55 and 65 percent of Indonesia's hardwood production involves timber from 'suspicious' sources (Table 9). It has been estimated that illegal logging in Indonesia causes between

US\$600m and US\$3b in financial losses to the Indonesian Government per year (ITTO 2006: 151; Seneca Creek 2004: 73–74).

Illegal logging in Indonesia is carried out in a myriad of ways and involves a great variety of trees, including protected timber species such as ramin. Historically, Indonesia has faced high levels of illegal logging of ramin, often felled in protected areas and national parks. There are ample reports by NGOs of ramin being stolen from national parks in Indonesia and laundered through neighbouring states, especially Malaysia (EIA & Telapak 2002: 4; see also section 'Malaysia' p. 98). As a result of over-logging, the species and the trade in ramin has declined significantly which led Indonesia to ban all cutting and export in 2001 and to add ramin to the CITES Appendix III species (EIA & Telapak 2004). Ramin was included in Appendix II of CITES in October 2004. Other species frequently harvested by illegal loggers are ebony, agathis, ironwood and, particularly in Papua, merbau. According to NGO reports, most of the illegal logging of these species occurs in national parks and other protected areas (EIA & Telapak 2002: 4; EIA & Telapak 2006: 1).

Illegal logging in Indonesia generally involves logging without government permits (Stark & Cheung 2006: 33). Further activities associated with illegal logging involve damaging forests by forest fires, illegal land clearance, logging outside concession boundaries, logging without proper authorisation and shifting cultivation (ITTO 2006: 151; Seneca Creek 2004: 74). NGOs have reported that loggers are deliberately targeting national parks and also engage in stealing timber from legitimate sources (EIA & Telapak 2002: 12). Shifting or changing forest cultivation involves use of licences for plantations that are issued for cultivation of fast-growing tree species that can be used for pulp production in paper mills. It has been found that some mill owners obtain licences for pulp plantations but continue to use cheaper logs from natural forests rather than developing the plantations (Dudley 2001: 358).

Corruption in Indonesia is widespread and this is most evident in the timber industry. Corruption and bribery are perhaps the greatest facilitators of illegal logging in Indonesia, and have been for some time. In the past, there have been allegations that the military extorted fees from illegal loggers, an activity that was regarded as a way of 'fundraising' during the Suharto era (Smith et al. 2005: 295). Today, there is ample evidence of local and provincial officials 'turning a blind eye' to illegal logging or issuing felling licences in return for bribes, local police and security officials protecting illegal logging activities against payment, and other forms of corruption among officials in law enforcement, forestry administration, and the military. There have also been allegations about members of the judiciary being bribed to prevent prosecutions of illegal loggers (Seneca Creek 2004: 73–74; Smith et al. 2005: 295–296).

The growing decentralisation of Indonesian administration and bureaucracy since the demise of the Suharto regime in the late 1990s seems to have further exacerbated the problems associated with corruption, especially insofar as small logging concessions granted by local

and district governments are concerned (Dudley 2001: 358; Palmer 2001: 12–13, 22; Seneca Creek 2004: 73–74; Smith et al. 2005: 293, 295–296; Tan 2004: 179). Frequently, the logging permits issued by local authorities are not exactly ‘illegal’, but decisions to grant them are often based on short-sighted motives and conflict with principles of sustainable forest management (Casson & Obidzinski 2002: 2134). It has also been alleged that members of the military and the police run illegal logging operations themselves to increase their budgets (ICG 2001: 10; Palmer 2001: 21).

Policy and legislation

The Forestry Act 1999 is Indonesia’s principal legislative instrument to protect its national timber resources and regulate exploitation of forests and trade in timber. The Act replaced the former Basic Forestry Law, which had been in operation since 1967. The Forestry Act’s Preamble acknowledges that Indonesia’s forest ‘has tended to deteriorate’ and states sustainable forest management and maintenance as the chief objectives of the Act (Article 2). The Act establishes three types of forest use: conservation, protection and production (Article 6). Conservation forests are, for the most part, placed under protection and are exempted from any encroachment and ‘utilisation’. Protection forests may be used for environmental services, collection of non-timber forest products, and for utilisation of the area, and licences for such use may be issued to individuals as well as to corporate entities (Articles 26, 27). Production forests may also be used for collection of timber subject to approval of relevant business licences (Articles 28, 29).

Forest concessions are required to carry out any logging activity in Indonesia. Separate types of concessions are granted for general logging and forest products collection. Indonesian authorities have become more restrictive in issuing forest concessions, reducing the number of concession rights from 584 in the early 1990s (covering 68 million hectares of forest) to 354 in 2001, covering only 39.3 million hectares. In addition, there were 102 forest products collection rights in 2001 (ITTO 2006: para 151). Holders of business licences for utilisation of protection and production forests are required to pay a range of fees, bonds and taxes, and are required to contribute to reforestation funds and to investment funds for forest conservation (Article 35).

One reason frequently cited as the main incentive for illegal logging in Indonesia is the high level of government taxes imposed on legitimate timber harvesting. Illegal logging and timber obtained from illicit sources are, in comparison, significantly cheaper. Some sources have suggested that taxes and other duties add 50 percent to the cost of legal logs, and that the high taxes directly fuel the demand for cheaper logs from illegal sources (Dudley 2001: 358). The bureaucracy and paperwork associated with the legal timber trade is seen by some as another factor contributing to corruption and to a growing illegal market (ICG 2001: 8).

The administration of Indonesia's forests is divided between national and regional authorities. Since the demise of President Suharto, Indonesia's bureaucracy has seen a major shift towards greater decentralisation, and many powers relating to forest administration have been delegated from national to regional and local authorities. In this process, the authority to grant small logging concessions has been transferred to district governments while the central government retains power to grant larger concessions. This division has resulted in some confusion between different levels of government, has made local authorities more vulnerable to corruption and, according to some writers, resulted in a 'massive dysfunction in the forest management effort' (ICG 2001: 12; Speechly 2003: 219; Tan 2004: 177–179).

Indonesia is a signatory to CITES and the World Heritage Convention, and is an active participant in international and regional fora dealing with forest protection matters. Moreover, Indonesia has signed a number of bilateral memoranda of understanding to address illegal logging directly with some key importer and consumer countries. Memoranda of understanding with the United Kingdom, Norway and China were signed in 2002, and with Japan and the Republic of Korea in 2003. These are designed to prevent the harvesting, export and trade in illegally logged timber and timber products by exchanging data, developing cross-border compliance systems, law enforcement cooperation, and chain-of-custody tracking and identification systems. Furthermore, countries such as the United Kingdom have agreed to provide technical and financial capacity-building assistance to support the Indonesian Government in its efforts to prevent and suppress illegal logging (Speechly 2003: 219–229). The full text of these documents is available in Speechly (2003: 223–229), and the Indonesia–United Kingdom Memorandum of Understanding on Illegal Logging is available at <http://dte.gn.apc.org/53MoU.htm> [accessed 12 March 2007]. It is anticipated that Indonesia will soon enter into a further memorandum of understanding with the United States 'to strengthen the government's efforts to combat illegal logging' (US Department of State 2006?: 18).

Offences and enforcement

Article 50 of the Forestry Act 1999 (Indonesia) stipulates a great range of criminal offences relating to forest protection and illegal logging, namely:

- (1) Any person is prohibited to destroy the infrastructure and facilities of forest protection.
- (2) Anybody who has received the license of forest area use; the license of utilising environmental services, the right of timber and non-timber forest product utilisation, the license of timber and non-timber forest product collection; is not allowed to undertake any activities leading to forest damage.

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- (3) No one is allowed to:
- a. cultivate and/or use and/or occupy illegally a forest area;
 - b. encroach a forest area;
 - c. cut trees within a radius or distance up to:
 - 1. 500 (five hundred) meters from the edge of a lake;
 - 2. 200 (two hundred) meters from the edge of water sources and along side rivers in a swamp area;
 - 3. 100 (hundred) meters alongside of rivers;
 - 4. 50 (fifty) meters along sides of streams
 - 5. 2 (two) times the depth of ravine from the edge of ravine;
 - 6. 130 (one hundred thirty) times the difference between the highest and the lowest tide, measured from the coastline
 - d. burn the forests;
 - e. cut trees or harvest or collect any forest products within the forest area without holding any rights or license issued by authorised officials;
 - f. receive, buy or sell, receive as an exchange, receive as an entrusted goods, keep or possess any forest products which were allegedly harvested from a forest area through an illegal way
 - g. undertake general investigation, activities, exploration or exploitation of mine materials within the forest area without Minister's approval;
 - h. carry, possess or keep forest products without being accompanied by any legal document;
 - i. graze livestock within the forest area which is not assigned specifically by authorised officials for that purpose;
 - j. bring heavy equipment or other tools which are commonly used or will presumably be used for loading forest products within forest area, without any legal authorisation;
 - k. bring equipment which are commonly used for felling, cutting, cracking the trees, without any legal authorisation;
 - l. throw any inflammable material into the forest area which may cause forest fires and threat the existence and sustainability of forest functions; and
 - m. remove, carry, transport plants and wildlife species which are not protected by the law, from forest area without any legal authorisation.

-
- (4) Further provisions concerning removal, carrying or loading actions of protected plants and animal species, shall be regulated by the prevailing laws and regulations.

Penalties for the offences under Article 50 are set out in Article 78, ranging from fines between Rp10m and Rp5b, and imprisonment of up to 15 years. Relevant enforcement powers are set out in Articles 51 and 77, and involve powers to patrol, verify documents, receive information and collect evidence, and arrest suspects.

The Indonesian Government has for many years acknowledged the high levels of illegal logging in the country. Enforcement of logging-related offences and suppression of illegal logging in Indonesia has proven difficult. Geographical factors, lack of capacity and training, and limitation of resources are among the main reasons that hamper the efforts by enforcement and other government agencies (ICG 2001: 11). The diversification of forest administration roles is another problem associated with enforcement. Enforcement capacities at local levels are very limited and vulnerability to corruption is high, thus most local and many regional governments fail to interdict and report seizures of illegal logs. In the early 2000s, the national Ministry of Forestry reported it had seized 117,459 cubic metres of illegal timber over an 18-month period; a figure insignificantly small to the overall problem (Palmer 2001: 22; Seneca Creek 2004: 74–77). There have also been reports that confiscated logs had been sold illegally or were otherwise returned into the illegal trade (EIA & Telapak 2002: 21). It is thus not surprising that one commentator remarked:

Given the low level of expenditure on enforcement and the limited data there is on arrests and fines, it seems likely that the expected value of punishment for perpetuating crimes is close to zero.

Furthermore, even if the maximum penalties are adequate but punishments are only imposed at the low end of the penalty scale, the disincentive to offend is lowered (Palmer 2001: 86).

A recent initiative to prevent illegal logging and trade in illegal timber from Indonesia involved creation of a national log tracking system by the Government of Indonesia supported by United States agencies (US Department of State 2006?: 7).

Malaysia

Timber resources

Malaysia's forest cover extends over approximately 19 million hectares or 60 percent of the total land area. Most of the forest cover is natural forests; only a small area, approximately 0.25 million hectares, is plantation forests. Sabah and Sarawak are the most forested states (Chen 2004: 3; ITTO 2006: 157; Seneca Creek 2004: 81).

Native tropical forests make up most of Malaysia's forest cover, although forest plantations play an increasingly important role. Some 120 species are used in timber production. Timber harvesting in Malaysia is concentrated in the hill forests. The most commonly harvested tropical species include meranti, mersawa, keruing, kapur, merawan, ramin and merbau (ITTO 2006: 160).

In recent years, Malaysia's annual tropical log production has been approximately 20–25 million cubic metres per year. Following amendments to the National Forestry Policy, annual forest harvests have halved during the 1990s from over 40 million cubic metres in the early 1990s to around 20 million cubic metres. Concerns over growing levels of deforestation and unsustainable logging activities led the government to place vast areas of land, approximately 3.8 million hectares, under protection and prohibit commercial logging in these areas, thus reducing the annual logging volume considerably (ITTO 2006: 161; Seneca Creek 2004: 81, 82–83). However, Malaysia remains the world's largest producer of tropical logs, producing approximately 26 million cubic metres in 2006 (ITTO 2007: 4).

Illegal logging

Evidence of illegal logging activities in Malaysia is limited. Most of the illegal activities relating to the timber trade involve illegally imported logs but there are only anecdotal and often unconfirmed reports by NGOs about unauthorised and excessive harvesting in Malaysia.

For the most part, Malaysia's forest policies and their enforcement are seen as strong, comprehensive, and successfully suppressing and deterring most illegal logging attempts. Most reports confirm statements by Malaysian Government officials that suggest the level of illegal logging is less than five percent of all logging activities, and takes place only in remote parts of Sabah and Sarawak that are difficult for forestry officials to access. Research published in 2004 found that:

The illegal harvesting that does occur is in remote areas with low risk of detection and at places where logs can quickly be converted to lumber. Thus, it is unlikely that more than one million [cubic metres] annually, or less than five percent of the total domestic harvest, can be attributable to significant legal abuses (Chen 2004: x, 24; Seneca Creek 2004: 79, 82, 84).

Malaysia's timber production is mostly confined to hardwood and accordingly most of the suspicious wood production also involves hardwood in the form of roundwood and, in smaller quantities, lumber and plywood. According to United States research, approximately 11.8 percent of all hardwood production in Malaysia is suspicious (Table 10); this figure is higher than official government estimates but considerably lower than levels of suspicious wood production in other source countries in the region.

Table 10: Suspicious wood production by type of wood, Malaysia, 2002

	Production ('000m ³)	Suspicious (%)
Softwood		
Roundwood	90	0.0
Lumber	0	0.0
Plywood	0	0.0
Hardwood		
Roundwood	21,500	11.8
Lumber	4,450	11.8
Plywood	4,700	11.8

Source: Seneca Creek (2004: 15–16)

There has been some additional research into the criminology of forest crimes committed in Malaysia, stating that:

[t]here is evidence to indicate that some forest encroachment activities are organised by those who want to make quick profits. The individuals will hire foreign workers to fell the forest area as large as 20–50 hectares and then sell them to any interested party. Such activities normally take place in easily accessible forest areas (Mohd 2001: 10).

The report found ‘no information whether or not there is [an] organised market for illegally cut timber’ and concluded that:

the illegal timber is disposed locally and probably being utilised by illegal wood-based industries. There is little possibility that the illegal timber being mixed with the legal ones since each log has to be tagged before passed through the forest checking stations for inspection. Licensed wood-based industries are not likely to purchase illegal timber because it will jeopardise their image (Mohd 2001: 10–11).

The same report also found some evidence of forest encroachments by villagers and Indigenous communities, but these activities are said to only occur at a very small level (Mohd 2001: 10). The report does not further investigate the possibility of re-labelling of illegally logged timber and any allegations about document fraud.

While there is no evidence to suggest that illegal logging in Malaysia is carried out at significant levels and that sophisticated criminal enterprises are engaged in illegal harvesting activities, there is ample evidence of illicit importation of illegally logged timber from Indonesia and there are many concerns about involvement of licit and illicit Malaysian enterprises in this trade (see section ‘Malaysia’, p. 98). Elsewhere, concerns have been

expressed about Malaysian politicians and their relatives owning forest concessions and having interests in timber companies, thus creating additional vulnerabilities to corruption and nepotism (Wolf 1996: 431–432, 437).

Policy and legislation

In Malaysia, regulation and administration of forests and forest resources is, for the most part, a matter of the states (Article 74 Clause (2) and Article 76 Clause (3) of the Malaysian Constitution) and thus there are some small discrepancies in policies, legislation and enforcement between the 13 states. The national government's role in forest matters is largely limited to research, training, assistance and advisory roles (Mohd 2001: 1). The National Forestry Council coordinates the state and federal forest policies. Since 2004, relevant responsibilities are vested in the Ministry for Natural Resources and Environment, while timber processing, trade and export are the responsibility of the Ministry for Plantation Industries and Commodities (ITTO 2006: 159–160).

In 1992, the national government introduced a revised National Forestry Policy for Malaysia (originally adopted in 1977–78) with a view to making forest management more sustainable. The National Forestry Act 1984 (Act 313) established a basic set of rules in line with national policies on forestry, but the Act authorises state legislatures to develop and adopt their own laws and regulations in line with national laws and policies (section 18), such as the Forest Enactment 1968 (Sabah) and the Forest Ordinance 1954 (Sarawak). Separate pieces of national legislation deal with matters of biodiversity conservation, national parks and land rights of Indigenous communities. A National Policy on Biodiversity was adopted in 1998 (Chen 2004: x; Hutan 2006: 25; ITTO 2006: 158).

Nearly all forests in Malaysia are owned by the national government, but state bureaucracies have the power to grant felling licences in accordance with provisions under the National Forestry Act 1984. State laws set out the powers of relevant forestry departments and the criteria for granting logging concessions. Each state (except Malacca) has set up its own forestry department for planning, managing, and administering its forest resources (Mohd 2001: 1). In 1995, the Government of Sarawak established the Sarawak Forestry Corporation as a private entity to administer and implement the Forest Ordinance 1954. Large timber companies, which are often involved in marketing and exporting timber and timber products, generally also harvest and process the wood. The Wood-based Industries Act 1984 (Malaysia) provides the regulatory framework for the timber industry (Chen 2004: ix; ITTO 2006: 158).

Malaysia is a signatory to CITES, the Biodiversity Convention and the World Heritage Convention. Several national parks and wildlife sanctuaries in Malaysia are listed on the World Heritage List (Table 6). Malaysia is an active participant in ASEAN and many international and regional fora on forest issues.

Offences and enforcement

Criminalisation of illegal logging and related activities in Malaysia is comprehensive and, since an amendment in 1993, punishment for the offences is quite severe. Sections 15, 40, and 81–87 of the National Forestry Act 1984 (Malaysia) contain relevant forestry offences, including those relating to illegal logging (logging without license, logging outside licensed area, clearing forests without permission) (Chen 2004: 25). Moreover, the Act criminalises a range of damaging conduct in permanent reserved forests (section 81), unlawful possession of forest produce (section 84), and counterfeiting or defacing marks on trees and timber (section 86). The Act also sets out enforcement powers for police and the military (Part VIII, sections 88–101A). Additional offences are set out under relevant state forestry laws (Chen 2004: 27–28).

Operationally, law enforcement largely remains with the state governments. Sabah adopted new, comprehensive measures to suppress and prevent illegal logging in 2000 by creating a new Enforcement and Investigations Division, which is supported by a State Task Force on illegal felling, the District Forestry Officers, and a Monitoring Control Enforcement and Evaluation Unit (Chen 2004: 27–28).

Some basic statistics are available about prosecutions of offences under the National Forestry Act 1984 (Malaysia); a report published in 2001 found that, on average, 100 cases of forest offences in addition to 137 instances of illegal logging occur in Peninsular Malaysia annually, not including other parts of the country (Mohd 2001: 9–10). In comparison, the State of Sabah reported 372 forest offences in 2002 and 299 offences in 2003. About 40 to 50 percent of the offences involved illegal logging in forest reserves and on state land. Some 20 percent of offences recorded in Sabah in 2002 and 2003 involved cases of illegal possession of logs (Chen 2004: 27–28, referring to unpublished information by the Sabah Forestry Department).

Cambodia

Timber resources

Cambodia has a substantial forest area, with forest cover estimated to be about 10 percent of a total land area of 18.1 million hectares (ITTO 2006: 128). The country has different types of forest vegetation in its north-eastern part (mainly lowland tropical moist forest cover), southern and eastern parts (medium-altitude closed forests), and north-western part (closed deciduous forests and open forests) (ITTO 2006: 128; Amariei 2004: 6). Commonly harvested species used for timber exports and timber production include chhoeuteal tan (used in sawn wood, veneer, plywood), mersawa (used in sawn wood, veneer, plywood), merawan (used in sawmilling and in construction of bridges, boats, etc.), red balau (used in sawmilling, construction and housing), and *tarritia javanica* (used in sawn wood for decorative furniture) (ITTO 2006: 131).

Large-scale logging operations only commenced in Cambodia in 1994. Previously, harvesting activities were, for the most part, modest and mostly carried out manually with axes and extracted using buffaloes and elephants. During the Khmer Rouge regime, production levels increased as the exploitation of Cambodia's forest resources was seen as an important way to raise revenue and purchase arms (Le Billon 2000: 789–791; Thomson & Kanaan n.d.: 11). This deforestation led the United Nations to temporarily impose a ban on timber exports from Cambodia (Peters 1999: 106; Wolf 1996: 433–434). The Cambodian Government later lifted the export ban, but increasing deforestation led to a new import ban on all roundwood and sawnwood exports from 1 May 1995 (Wolf 1996: 435).

Illegal logging

Introduction of commercial logging concessions in Cambodia in 1994 led to an immediate increase in illegal logging, as activities that were formerly legal had suddenly become illegal. Companies and others who had been granted concessions were found harvesting in areas not covered by the concessions or continuing to harvest even after concessions had expired (Amariei 2004: 8). Allegations of corruption soon became widespread, as underpaid government officials in the forestry administration and also in the police and military (who were influential in forest administration) were open to bribery in return for ignoring illegal logging (Peters 1999: 108). The increase in commercial logging also led to the creation of many sawmills around the country and their capacity greatly exceeded the harvesting authorised under the concession regime, leading to suggestions that many mills processed timber that had been logged illegally (Amariei 2004: 21). Effective control of logging activities was further hampered by the fact that some parts of the country remained under the control of the Khmer Rouge and were thus largely inaccessible to control and enforcement by government officials (Peters 1999: 106).

Growing evidence of illegal logging throughout Cambodia and the surrender of the Khmer Rouge led to changes in policy and legislation and eventually to a complete moratorium on logging activities. The changes appear to have significantly reduced the level of illegal activity, although there continue to be reports about logging in protected areas, other illicit harvesting, corruption and criticisms of the Cambodian Government for doing too little to preserve the country's forests (Kettle 2005; Reuters 2006).

Policy and legislation

Cambodia is a signatory to all relevant international treaties, including the Convention on Biological Diversity, CITES, the Convention to Combat Desertification, the World Heritage Convention, the International Tropical Timber Agreement, and a range of regional and

subregional agreements. However, the practical importance of CITES is limited because despite serious reduction of Cambodia's forest resources, the tree species do not face extinction as to affect trade (Peters 1999: 107).

Domestic policies to prevent and suppress illegal logging and protect Cambodia's forest resources have been slowly forthcoming. Under the Khmer Rouge and during Cambodia's transitional period no comprehensive policies and laws were in place. Only in 1994 did Cambodia introduce a concession system to allow commercial exploitation of its timber resources. Introduction of commercial logging brought with it the mechanisation of harvesting and the establishment of large numbers of sawmills, causing major encroachments on Cambodia's forests at unsustainable levels. To raise revenue, the government was quick to issue 36 concessions (some of them secretly) between 1994 and 1997 covering 7 million hectares or 70 percent of Cambodia's exploitable forests. By 1997, the official harvest of industrial roundwood reached 700,000 cubic metres annually (ITTO 2006: 130–131; Global Witness 2002: 3).

Reforms starting in 1998 led to a temporary freeze of new concessions being granted (Peters 1999: 103). By 2001, the official roundwood harvest had dropped to 123,000 cubic metres. On 1 January 2002 a complete moratorium on logging took effect and most previously issued commercial concessions were cancelled. This was followed by introduction of tougher requirements for new concessions. Cambodian Forest authorities further closed 2,000 illegal sawmills and small wood-processing plants (ITTO 2006: 130–131).

The protection of forests and the conditions of logging activities are now comprehensively legislated in the Law on Forestry 2002 (Cambodia) and the Law on Environmental Protection and Natural Resource Management 1996 (Cambodia). The Law on Forestry 2002:

defines the framework for management, harvesting, use, development and conservation of the forests in the Kingdom of Cambodia. The objective of this law is to ensure the sustainable management of these forests for their social, economic and environmental benefits, including conservation of biological diversity and cultural heritage (Article 1).

To that end, the Act regulates administration and management of Cambodia's forests (Articles 6–9), including management of production forests and granting of logging concessions (Articles 13–19), and the requirements for permits and authorities to harvest, transport, process, and trade forest products and by-products (Articles 24–27).

Amidst allegations of bribery and interest groups as well as the police and military influencing the administration, the former Department of Forestry and Wildlife has been restructured to the Forestry Administration (Amariei 2004: 26).

To distinguish illicitly sourced timber from legal logs, the Act sets out a comprehensive regime of applying different marks to both types of timber (Articles 65–67). Strict regulations apply to the way in which harvesting is carried out and limitations are placed on the type of machinery used to harvest, gather and transport logs (Article 70). Furthermore, the Act sets out the rights of local communities for traditional use and the management of community and private forests (Articles 40–47). The Act is supported by a National Forest Sector Policy (Article 8), a National Forest Management Plan (Article 9) and a Code of Practice for Forest Management (ITTO 2006: 131).

Cambodia's Law on Environmental Protection and Natural Resource Management 1996 sets out more general goals of environmental protection and sustainable development. While the Act establishes general mechanisms for natural resource management, monitoring and environmental protection, it contains no specific provisions relating to forest resources and logging.

Implementation of Cambodia's new policies and laws is still in its infancy, and medium and long-term outcomes cannot yet be assessed (ITTO 2006: 133). Some analysts have pointed to potential weaknesses in the new system, such as definitional uncertainties and inconsistencies between different laws (Amariei 2004: 21). However, the crackdown on illegal logging and the moratorium on harvesting have had a considerable impact and there have been numerous prosecutions showing increased efforts to suppress incidents of illegal logging (Global Witness 2002: 3; Kettle 2005; Reuters 2006).

Despite Cambodia's recent radical upgrade of forestry policies and laws, some concerns remain over the administration and enforcement of the new regime. The principal problem lies in the lack of resources to thoroughly manage, implement and enforce the legal requirements at national and local levels. Moreover, many government officers are paid very low salaries, sometimes below subsistence levels, and are thus vulnerable to corruption (Global Witness 2004). There have also been reports of revenues leaking or being diverted. Other problems include the diversity of agencies involved in environmental protection and forestry management, and these agencies are often competing for resources rather than collaborating (Amariei 2004: 12–13). A further effect of the crackdown on illegal logging has been that individuals and organisations involved in illegal logging have become more sophisticated in hiding their activities (Global Witness 2002: 3). NGOs have also reported that government officials often fail to report and investigate instances of illegal logging or simply lack the capacity to exercise their duties (Global Witness 2002: 6).

Offences and enforcement

The Law on Forestry 2002 (Cambodia) contains an extensive range of criminal offences relating to illegal logging including:

- harvesting of immature trees, rare species, trees used for customary resin extraction and trees that yield high-value resin (Article 29)

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- harvesting and other activities without a permit (Article 39)
 - use of unregistered or unidentified machinery, vehicles, and chainsaws (Article 70)
 - unlawful issuing of permits to harvest forest products and by-products in protection forests (Articles 28, 38)
 - activities that damage forests, such as poisoning or uprooting trees, removing boundary posts, etc. (Article 32).

Penalties and enforcement of these offences are set out in Articles 76–89 in the Law on Forestry 2002. As previously mentioned, enforcement is frequently hampered by lack of resources. Allegations of corruption in the forestry sector are also widespread. There have also been some reports of misuse of concessions and illegal activities in the unorganised forestry sector (Amariei 2004: 17).

Russia

Timber resources

The Russian Federation (Russia) is the country with the greatest timber resources in the Asia–Pacific region. The country is considerably larger than any other examined in this report and its forests cover approximately 760 million hectares, one-fifth of the world’s forested area or one-quarter of the world’s timber stock. Most of the timber resources – and the main areas of logging – approximately 70 percent of Russia’s forests, are concentrated in the Russian Far East and Siberia in relatively close proximity to China and other main markets in the Asia–Pacific region (Hansen & Muran 2006: 3).

Much of Russia’s forests (about 45%) consist of coniferous trees with limited use as timber or timber products. Moreover, the mixture of species and inaccessibility of many areas make large areas of forest unattractive for commercial exploitation. Most of the commercially harvested tree species involve softwood (such as birch, asp, poplar, willow and alder) or hardwood (oak, beech, ash, maple, elm and locust).

The annual logging volume in Russia is capped at about 500–600 million cubic metres, although these figures are never reached. It is estimated that actual felling amounts to no more than 200 million cubic metres per year. Softwoods make up about 17 percent of Russia’s forest area, and its annual softwood production is estimated to be approximately 120 million cubic metres, mostly in the form of roundwood (105.1 million cubic metres). Lumber (16.9 million cubic metres) and plywood softwood production (300,000 cubic metres) is significantly lower (Table 11). Hardwoods make up about 13 percent of Russia’s forests and Russia produces approximately 45 million cubic metres of hardwood per annum, including roundwood (41 million cubic metres), lumber (2.3 million cubic metres), and plywood (1.5 million cubic metres) (Hansen & Muran 2006: 3; Seneca Creek 2004: 13) (Table 11).

Table 11: Suspicious wood production by type of wood, Russia, 2002

	Production ('000m ³)	Suspicious (%)
Softwood		
Roundwood	105,100	17 ^a
Lumber	16,900	0
Plywood	300	15
Hardwood		
Roundwood	41,000	17
Lumber	2,300	20
Plywood	1,500	15

a: Includes domestic production and imports

Source: Seneca Creek (2004: 15–16)

Logging activity in Russia was limited under Soviet rule. Especially the vast areas of forests in the Russian Far East – the area between Siberia and the Pacific coast – saw only limited exploitation, largely owing to lack of infrastructure. The material traded from the Russian Far East involved raw products, with processing facilities located in other parts of the country. Even after the collapse of the Soviet Union, government investment and development of infrastructure in the Russian Far East has remained low (Crowley 2005: 428–431). The rapid economic growth of countries in close proximity to the Russian Far East, such as China, Korea and Japan, and their high demand for timber, means that while domestic consumption of timber in Russia has declined since the 1980s, Russian timber resources have become of great interest to other countries in the region, especially Japan, China and Korea. As these neighbouring countries, in particular China, tightly restrict logging activities within their own territories (see section 'People's Republic of China', p. 75), further strain has been placed on Russian resources and has resulted in major logging activities in the Russian Far East (Crowley 2005: 435).

Illegal logging

Since the disintegration of the USSR in 1991, there is ample evidence of illegal logging in Russia but there is disagreement about the true extent of the problem. Estimates of illegal logging vary greatly; some sources suggest 0.5 percent of all logging is illegal while others place this figure at 50 or even up to 100 percent (Seneca Creek 2004: 99, with further references; Vandergert & Newell 2003: 303). Russian Government authorities suggest that between 0.5 and 10 percent of logging activities in the country are illegal (Bolshakov 2004: 2; Hansen & Muran 2006: 6). Other research places the figure at 15 to 20 percent (Seneca Creek 2004: 13) and 20 to 30 percent (EIA & Telapak 2002: 2).

The World Wildlife Fund estimates the economic impact of illegal logging in Russia at between US\$1b and US\$3b (WWF 2004). Other sources suggest the financial losses caused by illegal logging in Russia amount to between US\$200m and US\$270m, or 'billions of dollars of lost tariff and tax revenue, lost jobs, corruption, and environmental damage' (Greenpeace 2006: 5–6, citing the European Forest Institute and the US Department of Agriculture).

The two main areas of illegal logging activity are Primorsky Krai in Russia's Far East bordering China, and the Karelian Republic in Russia's north-west in close proximity to Finland. There have been some suggestions that rates of illegal logging are higher in these areas than in other parts of the country: approximately 40 to 50 percent (Crowley 2005: 435; Greenpeace 2006: 4).

Illegal logging in Russia involves a range of activities including logging of protected species, logging outside authorised areas, excessive logging, logging using unauthorised methods of cutting trees, or logging without permit or with fake logging permits (Vandergert & Newell 2003: 304). Instances in which logging permits have been obtained through bribery or fraud are also not uncommon (Crowley 2005: 435–436; Greenpeace 2006: 7–10; Seneca Creek 2004: 109). A further type of illegal logging common in Russia involves so-called sanitary or salvage harvests of damaged trees. This type of activity involves removal of damaged trees to reduce the risk of bushfires and other hazards (see also section 'What is illegal logging?', p. 47). Until the recent reform of Russia's forestry laws, the provisions under former Articles 98–100 Forest Code were frequently exploited for the purpose of illegal logging. Regional forestry agencies were found authorising large-scale harvesting of healthy forest operations by issuing permits to cull 'fire-damaged or diseased timber' (Vandergert & Newell 2003: 305). There are also reports of government officials authorising the cutting of stands of timber, setting fires or permitting loggers to set fires to forest to invoke the exemptions under Articles 98–100 (Crowley 2005: 436).

Government control over forest management and logging operations in the Russian Far East have diminished since the USSR disintegrated. Although the federal and provincial governments have since introduced policies to protect natural forests and regulate logging, these policies have made little impact at local levels where corruption remains widespread (Vandergert & Newell 2003: 305). Corruption in Russia's forest industry has been described as 'endemic' and there is ample evidence of government officials accepting bribes in return for logging permits, other concessions, or to release seized timber (Pye-Smith 2006: 5, 7; Vandergert & Newell 2003: 304).

There have also been reports linking illegal logging in the Russian Far East with organised crime and specifically with Russian and Chinese mafia. A 2003 report stated that criminal organisations 'increasingly control much of the industry' and that 'corrupt officials are linked with organised criminal operations' (Vandergert & Newell 2003: 304, 305).

Policy and legislation

The Russian Federation is a Signatory to some key international treaties such as CITES, the Convention on Biological Diversity, and the International Tropical Timber Agreement. Relevant Russian domestic law underwent major reforms with the adoption of a new Forest Code, which was adopted by the State Duma on 8 November 2006 and entered into force on 1 January 2007. Prior to this reform, Russia's main legislative tool was the Forest Code of 1997, which was seen by many as inadequately protecting Russia's forest from illegal logging (Crowley 2005: 438).

The Forest Code 2006 (Russia) marks a significant departure from earlier laws, and places much greater emphasis on conservation and sustainable development. Article 1 of the Code sets out 11 key principles, namely:

- 1) sustainable forest management, biological diversity conservation in forests, and enhancement of their potential;
- 2) maintenance of habitat-forming, water-conservation, protection, sanitation, recreation and other beneficial functions of forests, to ensure that each person could exercise the right for a healthy environment;
- 3) use of forests with due regard to their global environmental significance, as well as taking into account the length of their cultivation and other natural properties;
- 4) multiple-purpose, sound, continuous, non-depleting use of forests to satisfy society's needs for forests and forest resources;
- 5) renewal of forests, improvement of their quality and yield;
- 6) ensured protection of forests;
- 7) participation of citizens and civil society associations in decision-making which may affect forests when they are used, protected and renewed, with procedures for and forms of such participation to be compliant with the legislation of the Russian Federation;
- 8) forest use by methods which are not detrimental to the environment and human health;
- 9) division of forests according to their designation, and establishment of categories of protection forests depending on beneficial functions they perform;
- 10) inadmissibility of forest use by public authorities and local self-governance bodies;
- 11) payment for forest use.

Furthermore, the Forest Code sets out a detailed list of permitted 'forest uses' (Article 25) including 'wood harvesting' (Article 29):

1. Wood harvesting is an entrepreneurial activity involving cutting of forest stands, skidding, partial processing, storage and transportation of the wood from the forest.
2. Wood shall be harvested in production forests and protection forests unless otherwise provided for in this Code and other federal laws.
3. Dead, damaged and over-mature stands shall be the first to be made available for wood harvesting.
4. It shall be prohibited to harvest wood in volumes exceeding the allowable cuts (permissible volumes of wood extraction) as well as earlier than at the ages of cutting.
5. Ages of cutting and procedures for calculating the allowable cuts shall be established by the authorised federal executive body.
6. A list of tree and shrub species which may not be harvested shall be established by the Government of the Russian Federation.
7. Citizens and legal persons shall have the right to construct forest roads, forest terminals, other structures and facilities for purposes of wood harvesting.
8. Citizens and legal persons shall harvest wood under lease agreements for forest parcels, and if wood is harvested without allocation of forest parcels, they shall harvest it under sale-purchase contracts for forest stands.
9. Rules for wood harvesting shall be established by the authorised federal executive body.

The Code does not set out details of the procedures to acquire logging licenses and the rules for wood harvesting and other forest uses. These mechanisms are set out in subsidiary legislation that were not available in print at the time of writing.

It is still too early to observe any practical outcomes that occurred as a result of the recent law reform. While the amendments have closed some legal loopholes, the new Code has been criticised by some as 'exacerbating' rather than 'solving' 'some of the problems it is designed to address, particularly that of illegal logging in the Russian Far East' (Crowley 2005: 425). One of the principal concerns is the Code's emphasis on enhancing the forest sector's productivity and opening many timber resources to commercial exploitation. This is seen as particularly dangerous for the forests of Russia's Far East where it will become even more difficult to control logging activities and enforce existing laws (Crowley 2005: 447).

Furthermore, the Code does not adequately overcome institutional weaknesses in Russian forestry administration, as uncertainties over administrative duties and responsibilities prevail, and corruption remains widespread (Crowley 2005: 445).

Offences and enforcement

The Forest Code 2006 (Russia) sets out a number of criminal offences relating to illegal logging, including logging of protected species (Article 29, part 6) and excessive logging (Article 29, part 4). Although Russian laws have comparatively comprehensive criminal offences relating to illegal logging, enforcement has frequently been modest and less than forthcoming (Seneca Creek 2004: 99). The lack of enforcement has been attributed to poor resourcing of forest authorities and widespread bribery and corruption (Crowley 2005: 438, 439).

Papua New Guinea

Timber resources

Papua New Guinea (PNG) is a significant source country for timber in the Asia–Pacific region and is home to hundreds of native species that cannot be found elsewhere. PNG makes up five to seven percent of the world’s biodiversity (CELCOR & ACF 2006: 7; Stark & Cheung 2006: 12). Over 67 percent of the country is forest, totalling around 30.6 million hectares (ITTO 2006: 172). These forests are made up of a vast range of timber species, many of which are less useful for further processing than species found in other areas of the Asia–Pacific region (Hammond 1997: 54). Of the 200 tree species throughout PNG forests, important species used in timber production include kwila, kasai, bintangor, deglupta and mersawa.

PNG produces approximately 2.3 million cubic metres of industrial tropical logs per year. The majority of this production, over 2 million cubic metres (2003), is exported, making PNG the second largest exporter of tropical logs after Malaysia (ITTO 2006: 175).

Illegal logging

Allegations of large-scale illegal logging activities in PNG are long-standing. Reports suggest that as much as 70 to 90 percent of all logging in PNG is illegal and often carried out by large international companies (Henry & Shallhorn 2006: 27). Given the scale of illegal logging in PNG, it is estimated that timber resources will be depleted in 10 years if logging continues at the present rate (Stark & Cheung 2006: 28).

The use of forests in PNG is significantly influenced by customary land ownership. Clan or tribal groups own 97 percent of forests under PNG customary laws, which are guaranteed through the PNG Constitution and entitle landowners to be involved in managing the forests (ITTO 2006: 173). Specifically, customary landowners must give informed consent before any logging concession is granted. The 'landowner company' system was introduced through the 1979 Forestry Policy. Foreign companies were contracted to carry out logging for the landowner company. This approach was introduced in an attempt to involve locals in the forestry sector and 'it was expected that these companies would train the landowners and make them capable of running their own businesses' (ITTO 2006: 173). However, this approach has been largely ineffective and has been hampered by disagreement between landowner groups (ITTO 2006: 173). Under section 56 of the Forestry Act 1991 (PNG) the government 'may acquire timber rights from customary owners pursuant to a Forest Management Agreement [FMA] between the customary owners and the Authority'. As the ITTO notes:

Through an FMA the PNG Forest Authority secures a commitment from the resource owners to follow recommended forest management practices while simultaneously offering investors access to the forest for a minimum of 35 years. Implementation may involve the state in issuing a timber permit, under which it manages the forest on behalf of the customary owners for the duration of the FMA (ITTO 2006: 174).

As of 2003, the PNG Government had acquired FMAs for 5 million hectares of forest, largely through 50-year timber lease agreements (ITTO 2006: 174). However, some groups have heavily criticised management of forests through these agreements, particularly administration of timber concessions, and concerns have been raised about the benefit for the customary owners (ITTO 2006: 173). In practice, many concessions are granted without customary owners' consent (Stark & Cheung 2006: 34).

Furthermore, recent legislative changes to PNG forestry laws have resulted in the possibility of new projects being 'classified as extensions on existing logging concessions' and consequently bypassing standard assessment procedures (Roberts 2006: 29). As the *Post-Courier* (PNG) reported:

[the Government] has recently amended the Forestry Act to erode the rights of resource owners and has strengthened the bargaining position of the industry in the National Forestry Board. The Government and World Bank reviews of industry in 2003–2004 revealed widespread abuses of forest and environmental laws and recommended urgent measures ... to stop illegal logging. The Government has ignored these recommendations and allowed the abuses to continue (Tekwie 2005: 12).

Policy and legislation

Papua New Guinea has extensive legislation relating to illegal logging and protection of its timber resources. PNG is also a signatory to CITES and to the World Heritage Convention. The obligations under CITES have been implemented through the *International Trade (Fauna and Flora) Act 1979* (PNG). In addition to the *Forestry Act 1991* (PNG), the government has developed the *National Forestry Plan* (1996) and *National Forestry Development Guidelines* (1993). PNG has a range of specific instruments to set industry standards for domestic logging practices and prevent illegal logging, including the *Planning, Monitoring and Control Procedures for Natural Forest Logging Operations* (1995), the *PNG Logging Code of Practice* (1996) and the *Key Standards for Selection Logging in Papua New Guinea* (1995).

Despite the comparatively comprehensive regulation of PNG's logging industry, there are great discrepancies between laws, policies, and their administration and enforcement. Concerns about practices in the PNG forest industry are long-standing and have led to many official investigations over the past two decades. A Commission of Inquiry into Aspects of the Timber Industry in Papua New Guinea led by Justice Thomas Barnett in 1987 resulted in some attempts to stop illegal logging and led the PNG Government to formulate a national forestry policy and introduce the *Forestry Act 1991* (PNG) (Asumadu 2006: 1). This Act is specifically designed to 'manage, develop and protect the Nation's forest resources' (Preamble, section 3) and many of its endangered tree species (section 4). To manage and control PNG's forest policy, the Act established the PNG Forest Authority (sections 5–9), comprising the National Forest Board (sections 9–20), the National Forest Service, as well as Provincial Forest Management Committees (sections 21–31) (ITTO 2006: 173). Monitoring of the forestry sectors has been under contract through SGS of Switzerland since 1994. This monitoring includes all log exports from PNG, but does not cover 'processed wood products such as timber or veneer', though these exports are limited in scale (Asumadu 2006: 1).

Companies and individuals seeking to harvest timber in PNG require a timber authority issued by the Provincial Forestry Committees (section 87) *Forestry Act 1991* (PNG); activities other than harvesting require a timber permit (section 77) or a timber licence (section 91). Timber authorities, licences, and permits are only issued to registered 'forest industry participants'.

Despite introduction of comprehensive laws and policies over the past 20 years, allegations about mismanagement and corruption in the forest industry and among relevant authorities persist. World Bank and foreign aid agency attempts to establish systems for controlling logging and sustainable development have repeatedly failed, and have often been undermined by the national and provincial governments. In addition to logging companies attempting to circumvent *Forestry Act 1991* (PNG) provisions, the government has frequently ignored procedures for granting concessions, extended existing concessions, and failed to take effective action against companies and individuals engaged in illegal

logging (CELCOR & ACF 2006: 21–22; Greenpeace 2002a: 10). Recent inquiries into illegal logging in PNG have again confirmed that: ‘Ineffective reform efforts have rendered forestry policies and programs virtually useless. The logging industry remains racked with problems and controversy’ (CELCOR & ACF 2006: 9). Furthermore:

[A]lmost all existing logging projects in PNG fail to meet a number of key legal criteria and must therefore be properly regarded as illegal. They are also failing to meet any standards of sustainability and there are numerous problems associated with corporate governance, worker abuses and social impacts from the logging operations (CELCOR & ACF 2006: 22).

Logging operations in PNG have frequently been criticised not only for their lack of management and control, but also for destroying cultural properties, destroying and contaminating water resources, and poor working conditions and human rights abuses of those employed in the industry or affected by it (CELCOR & ACF 2006: 10–19). Of further concern is the influence exercised by large logging companies in PNG. Some of the large enterprises have diverse interests in the PNG economy and have investments in the media, printing, and information technology sectors in addition to their logging operations. There is ample evidence that multinational logging companies have made significant political donations and have exercised influence over the government to obtain permits to harvest on otherwise protected areas or to obtain licences outside the normal process (CELCOR & ACF 2006: 23; Greenpeace 2004: 4–7). Moreover, many politicians and high-level office holders in PNG have considerable personal interests in timber companies, including Prime Minister Michael Somare who, in June 2007, admitted to having financial ties to the logging industry (Roberts 2007).

Offences and enforcement

In PNG, it is an offence under section 114 of the Forestry Act 1991 (PNG) to engage in any ‘forest industry activity’ without being registered. Engaging in ‘forest industry activities’ such as logging without a valid licence, authority or permit, is an offence under sections 122(1) and 122(2)(a) of the Forestry Act 1991 (PNG). Counterfeiting permits or marks used by government officials is an offence under section 122(2)(b)–(d). A separate offence of compulsion or bribery of forest officials can be found in section 122(2)(f). Making false statements to forestry agencies is criminalised in section 122(2)(h) and (i). Section 124 of the Forestry Act 1991 makes it an offence to be in unlawful possession of forest produce.

PNG has implemented the obligations arising from CITES through the International Trade (Fauna and Flora) Act (Chapter 391). The Act prohibits exports of specimen listed in the CITES Appendixes in sections 4, 8 and 12 of the Act and also extends the prohibition to the exportation of so-called ‘controlled native specimens’. Under section 13E International Trade (Fauna and Flora) Act (PNG) it is an offence to export or re-export any CITES species from

PNG, punishable by imprisonment of up to five years, fines of up to 5,000 kina, or in the case of corporations, 10,000 kina. Criminal liability for prohibited exportation may also arise under the Customs Act 1951 (PNG); see section 13G of the International Trade (Fauna and Flora) Act (PNG). Section 13H of the Act contains a specific offence for giving false or misleading information to the domestic Management or Scientific Authority.

Special offences for possessing and receiving unlawfully obtained forest products can be found in sections 124 and 125 of the Forestry Act 1991 (PNG). Sections 13C and 13I set out relevant enforcement powers.

Enforcement of PNG's forestry law is a major problem facing the country, with a disregard of the laws by many large logging companies and frequent allegations of corruption. The industry is dominated by foreign companies, especially from Malaysia, including the Rimbunan Hijau Group and its subsidiaries, which operate in PNG and in the Solomon Islands (McDonald 2006: 22). Rimbunan runs five of PNG's largest logging projects, operates the biggest sawmill and PNG's only veneer plant (CELCOR & ACF 2006: 8; Henry & Shallhorn 2006: 27). The company's timber harvest accounts for 80 percent of logging operations in PNG and royalties paid by the company account for as much as three percent of all government revenue (Roberts 2006: 29). The company has been heavily criticised for its defiance of PNG forestry law, but despite this, the PNG Government has stated that Rimbunan 'must be supported in the face of international criticism of its logging practices' (Roberts 2006: 29). This 'support' included 'rejecting warnings by the World Bank that it would withhold about \$30 million worth of loan funds because of concerns about logging in the Wawoi Guavi and Vailala logging concessions, both held by Malaysian forestry giant Rimbunan Hijau' (Roberts 2006: 29).

Limited financial resources for implementing forest policies and enforcing relevant laws is a major problem in PNG (Chung 2006: 12; Roberts 2006: 29). Moreover, government officials are often underpaid and thus particularly vulnerable to bribery. Corruption of government officials in PNG is widespread and particularly so in the country's timber industry. However, Prime Minister Michael Somare has recently blocked efforts to audit the national forestry authorities which issue logging permits, further fuelling concerns over corruption in PNG's forestry sector (McDonald: 2006: 22).

Pacific Islands

Timber resources

Many of the Pacific Islands, especially the Melanesian islands and some of the larger Polynesian islands, have rainforests with great biodiversity and many unique floral and faunal species. The Solomon Islands and Fiji are the only countries with significant timber industries. Fiji has 45,000 hectares of industrial pine plantations and 50,000 hectares of

industrial mahogany production. In the Solomon Islands, logging is for the most part carried out by foreign companies, while customary land rights in Fiji prohibit direct foreign investment in Fiji's forestry sector (ITTO 2007: 32).

Illegal logging

Illegal logging in the South Pacific is not well documented and consequently not well understood. While the size of tropical forests in the islands is small compared to other parts of the Asia–Pacific region, even small encroachments can have significant consequences for the natural habitat, local communities and national economies.

Apart from PNG, there have been reports about excessive logging in Niue, Samoa and, in particular, the Solomon Islands (Boer, Ramsay & Rothwell 1998: 49). In 2005, approximately 1.2 million cubic metres of timber were harvested in the Solomon Islands, up from 550,000 cubic metres in 2002. At the same time, government revenue from the logging industry and contributions from logging to the overall economy fell (Burrow 2006: 2). Exploitation of timber resources in the Solomon Islands is reportedly greatly in excess of sustainable limits. Many logs, approximately 50 percent, are exported to China (Lawrence 1994: 218). Government authorities have little, if any, control over logging activities in areas that are often remote and difficult to access. Moreover, the government has granted so many timber licences that resources may be completely exploited in the next five to 10 years (Lawrence 1994: 218). There are also ample reports about widespread corruption in the Solomon Islands' logging industry and allegations about large Malaysian logging companies exercising influence by paying bribes instead of taxes (Greenpeace 2004: 16; Stark & Cheung 2006: 37). It has been estimated that logging companies failed to pay \$30m in taxes in 2004, up from \$10m in 2003 (Burrow 2006: 2).

People's Republic of China

Timber resources

Forest cover in mainland China is estimated to extend over 163 million hectares, approximately 17.5 percent of its landmass (Asia–Pacific Forestry Commission 2001: 6). Due to Chinese forest policies, the area of forest cover has continued to expand since the early 1990s. In 1998, for instance, forest cover extended over only 130 million hectares or 13.29 percent of China's landmass. The government aims to increase the forest cover to 19 percent by 2010 and 26 percent by 2050 (Stark & Cheung 2006: 16; Zhu, Taylor & Guoqiang 2004: 12). China is home to a diverse range of plant and timber species. It is said that 10 percent of the world's plant species can be found in China and that China's biodiversity ranks eighth in the world (Wang 2002a: 491).

Much of China's timber resources, approximately 46.7 million hectares or 25 to 28 percent, are forest plantations; it is said that China has one of the world's largest areas of plantations. These plantations are mostly made up of limited numbers of fast-growing, high-yield species so that as plantations and forest areas grow, forest diversity appears to be declining (Asia-Pacific Forestry Commission 2001: 6; Stark & Cheung 2006: 28; Zhu, Taylor & Guoqiang 2004: 12). The fast-growing plantations mostly produce timber used in pulpwood production; plantations generally do not grow the large, high-grade logs that continue to be sourced from natural forests or are imported from other countries. Forest plantations are particularly extensive in Southern China, while the northwestern and southwestern regions mostly contain natural forests (Zhu, Taylor & Guoqiang 2004: 5, 13). A number of re-forestation projects have been implemented to combat erosion, desertification and sandstorms (Zhu, Taylor & Guoqiang 2004: 5).

It is estimated that in 2003 the annual production of industrial roundwood in China was 47.6 million cubic metres. In addition, it is estimated that approximately 35.7 million cubic metres were produced undeclared. The total roundwood production in 2003 is said to have been 79 million cubic metres, up from 75 million cubic metres in 2002 but much lower than production levels during the 1990s. This decline in production until the year 2002 was the result of depletion of forest resources and major logging bans introduced since 1998 (Stark & Cheung 2006: 16; Zhu, Taylor & Guoqiang 2004: 13, 15). More recently, there has been a slow but steady increase in domestic log supplies in China, which is explained by 'the maturing of tropical plantations and an easing of [the] logging ban in southern provinces' (ITTO 2007: 40).

Illegal logging

Bans introduced on logging activities combined with reduced domestic production and ever increasing domestic demand has created 'a conflict that could lead to a black market for timber' (Zhu, Taylor & Guoqiang 2004: 3). Moreover, the high fees and taxes associated with domestic timber production in China are conducive to illegal activities that avoid the expenses and supply timber at much lower costs.

Table 12 shows that wood production in China is comparatively small and that most of the domestic production involves softwood logs. All types of timber produced in China, including softwood and hardwood logs, lumber and plywood show high levels of suspicious production, approximately one-third of the total production, irrespective of the type of wood produced.

Table 12: Suspicious wood production by type of wood, China, 2002

	Production ('000m ³)	Suspicious (%)
Softwood		
Roundwood	37,900	31.5
Lumber	5,182	31.5
Plywood	3,648	31.5
Hardwood		
Roundwood	20,200	30.6
Lumber	24,249	30.6
Plywood	18,513	30.6

Source: Seneca Creek (2004: 15–16)

Policies and legislation

China is a signatory to CITES, the World Heritage Convention and the Biodiversity Convention, and has signed a range of other international and regional agreements. In 2001, the governments of China and Indonesia signed a memorandum of understanding to reduce illegal exploitation and exportation of timber from Indonesia to China. The Russian Prime Minister and the Chinese Premier issued a similar statement in November 2006 to reduce illegal logging in the Russian Far East.

Chinese domestic law relating to forests includes a myriad of laws and regulations. The two principal legislative instruments are the Environment Protection Law and the Forestry Law 1998. China's Forestry Law 1998, first introduced in 1984, is the key document to manage and protect the country's forest resources. This document advocates protection of the environment and sustainable timber production (Article 1) and seeks to control all logging activities through regulation of harvesting, planting, regeneration, and conservation. It also limits the annual quota of logging activities (Article 30), sets out responsibilities of those involved in the timber industry, and requires the industry to set aside funds for forest cultivation (Wang 2002a: 503; Wang 2002b: 126). The Environment Protection Law sets out the key principles for wildlife and species protection while recognising integration of economic development. It seeks to balance exploitation of resources with protection (Wang 2002a: 501–502; Wang 2002b: 121–123). The Land Administration Law, enacted in 1998, further classifies properties for protection purposes and prohibits development in certain areas, including some forests (Wang 2002a: 511).

After many years of centrally planned forest and logging programs, the Chinese Government moved to fully liberalise the timber market in 1998 and introduced a permit system to control and monitor private logging operations as well as transportation of timber. The current

laws require licences setting out the conditions and quotas for harvesting for all logging activities as well as for transporting, processing and marketing timber (Zhu, Taylor & Guoqiang 2004: 7–8).

Between 1995 and 2000, a new forest zoning policy was introduced, classifying all forest areas into production forests used for commercial timber production and ecological forests. While some limited commercial logging is allowed in so-called ‘general ecological’ forests, the policy introduced a complete ban in key ecological forests such as protected areas, nature reserves and forest parks, and critical steep slopes (Wang 2002a: 496; Zhu, Taylor & Guoqiang 2004: 6). The Chinese Government announced that it intends to significantly increase the number of nature reserves including World Heritage sites during this decade, thus further reducing the size of commercially exploitable forests (Wang 2002a: 495).

Furthermore, starting in 1998 China has, for the most part, banned the logging of mature trees throughout the country. As a result, many logging companies had to close down and hundreds of thousands of workers had to be laid off. Today, logging activities in China remain limited and instead the country relies almost completely on imports of timber and timber products from abroad (Stark & Cheung 2006: 15–16).

Moreover, the Chinese Government has imposed high fees and taxes on private forest production and logging, which can absorb 35 to 65 percent of the sale value of timber. These expenses limit the profitability of the forest sector and are seen as a further disincentive to engage in logging or develop plantations, although some of the taxes are currently being reviewed (Zhu, Taylor & Guoqiang 2004: 7–8).

Offences and enforcement

Relevant offences relating to illegal logging and associated activities are scattered over numerous Acts and subsidiary regulations. The Forest Law 1998 contains the main criminal offences. Articles 23, 31 and 44 criminalise unauthorised destruction of forests and cutting of firewood in young forests and special-purpose forests. Illegal logging (referred to as ‘pirate felling of forests or other trees’) is prohibited (Article 39); a criminal provision for logging of rare and precious trees exists in Article 40. Article 41 sets out a special offence applicable to officials who issue logging permits without proper authorisation. A further offence for corrupt officials is set out in Article 46 if they are found ‘abusing power, neglecting duty and indulging in self-seeking misconduct’. Those buying or selling logging permits unlawfully may be criminally responsible under Article 42. Forging permits or other forestry documents is an offence under Article 42. Enforcement of CITES provisions and the trade in endangered species rests with customs officials under the direction of the central government (Wang 2002a: 508).

Australia

Timber resources

Australia is not a major resource of commercial timber and timber products in the region. Although the country has significant forest areas – especially in the eastern, south-eastern, and south-western parts of the mainland and in Tasmania – timber production is small by international and regional comparison, and the country has a large trade deficit in timber and timber products. Australia has 1.8 million hectares of commercial plantations in Tasmania, Queensland, New South Wales, Victoria, South Australia and Western Australia. In recent years, the natural forest area useable for timber production has been reduced as more forests have been placed under protection and harvest volumes have been further restricted. Currently, approximately 22.6 million hectares of forest are classified as natural reserves (Australian Government DAFF 2006: 7; JP Consulting 2005: 16–17).

Illegal logging

There is currently no evidence of systematic illegal logging in Australia.

Policies and legislation

Australia has comprehensive legislation to protect its forest resources from illegal logging and conserve its natural heritage, biodiversity and endangered species. Australia is a signatory to CITES (ATS 1976, No. 29), the Convention on Biological Diversity (ATS 1993, No. 32), the World Heritage Convention (ATS 1975, No. 47), and the Apia Convention on Conservation of Nature in the South Pacific (ATS 1990, No. 41). *The Environment Protection and Biodiversity Conservation Act 1999* (Cth) consolidates relevant legislative provisions and implements obligations under international treaties into domestic law (Lipman 2002: 30–33). The *Regional Forest Agreements Act 2002* gives effect to the National Forest Policy Statement 1992 and the Commonwealth's obligations under the 10 Regional Forest Agreements in Australia.

The purposes of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) are:

- (a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and
- (b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and
- (c) to promote the conservation of biodiversity; and
- (ca) to provide for the protection and conservation of heritage; and
- ...
- (e) to assist in the co-operative implementation of Australia's international environmental responsibilities; (section 3).

The Act identifies a range of ‘principles of ecologically sustainable development’ (section 3A), and sets out the mechanisms for protection of World Heritage and National Heritage (sections 12–15C and 313–341ZH), including requirements for environmental approval. Furthermore, the Act contains extensive provisions on the conservation of biodiversity and heritage including specific sections on identifying and monitoring biodiversity (sections 171–175), the listing of threatened species and ecological communities (sections 178–194), and for the domestic operation of CITES (sections 303B–303GY).

For the most part, Australia’s six states and two territories regulate and administer forest resources. Each jurisdiction has introduced comprehensive legislation to protect specified areas, administer logging concessions and criminalise relevant activities associated with illegal logging.

In summary, Australia’s policy of protecting domestic forests is characterised by a strong desire to conserve domestic timber resources and to limit the harvest volume at state, territory and federal levels. Although timber plantations have been set up throughout the country, domestic timber production and processing capacity remains unmatched to the level of demand, thus warranting significant import volumes. The previous government, under Prime Minister John Howard, expressed its strong determination to prevent and suppress illegal logging in Australia and abroad and launched a discussion paper entitled *Bringing down the axe on illegal logging: a practical approach* with a view to developing a new policy on illegal logging in 2007 (Australian Government DAFF 2006: 23). However, this policy proposal is largely directed at preventing importation of illegally sourced timber into Australia and does not contain new or additional mechanisms for protecting domestic forest resources.

Offences and enforcement

Australian federal criminal law contains an extensive range of criminal offences to prohibit logging of protected species, logging in protected areas and other unauthorised logging. Offences relevant to protection of domestic timber resources in Australia are set out in the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). These include:

- offences against World Heritage property (section 15A)
- offences against listed threatened species and threatened ecological communities (section 18A)
- offences for taking and trading listed threatened species or communities (sections 196B–196E)
- failure to notify the taking of listed threatened species or listed ecological communities (section 199)
- damaging a critical habitat (section 207B).

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) also features extensive provisions dealing with enforcement of the Act. Relevant measures are set out in Part 17 of the Act and include powers to issue search warrants (sections 413–428), make arrests of persons suspected to engage in offences under the Act (sections 430–431), and seize and forfeit specimens and other goods (sections 444A–456). The federal Department of Agriculture, Forestry and Fisheries (DAFF) enforces the Act in cooperation with the Australian Federal Police and the Australian Customs Service.

Additional offences and enforcement mechanisms relating to state and territorial powers are contained in the relevant Acts.

Other source countries

Other countries within the Asia–Pacific region from which illegal timber is sourced are New Zealand, Lao People’s Democratic Republic (PDR), Thailand, Vietnam and the Philippines.

New Zealand

New Zealand has extensive forest resources on the North and South Islands. The country’s forestry industry is heavily regulated by the Forests Act 1949 (NZ) and the sustainable management principles of the Resources Act 1991 (NZ). While New Zealand remains a significant producer of timber, large parts of New Zealand’s forest cover are placed under protection (Asia–Pacific Forestry Commission 2001: 11). Illegal logging is a rare incident in New Zealand and does not occur on a large scale. The New Zealand Ministry of Agriculture and Forestry has reported that only about 15 investigations relating to illegal logging are carried out each year. Most prosecutions involve small quantities and only about two prosecutions each year involve quantities of more than 100 cubic metres of timber (Watson 2006: 4).

Lao People’s Democratic Republic

Despite the country’s comparatively small size, Lao PDR has extensive forest cover. Estimates about the true extent of forest area vary between 8.5 million hectares (Southavilay & Castrén 1999), 11 million hectares (Chanthirath n.d.) and 16.1 million hectares (FAO 2005). Other sources suggest that subtropical forests cover some 47 to 54 percent of the country (Tan 2002; Chanthirath n.d.). According to FAO 2005 estimates, only about 3.5 million hectares were used for production, while over 12 million hectares were placed under protection (FAO 2005). Despite the relatively low levels of timber extraction in Laos, the country has experienced significant losses of biodiversity and soil degradation as a result

of deforestation (Tan 2002). Government officials confirm that the ‘[i]nappropriate system for forest management, slash and burn cultivation and uncontrolled logging are the main causes for deforestation’ (Chanthirath n.d.).

Many reports suggest that illegal logging in Laos is widespread, although evidence of actual levels and cases of illegal logging are not well documented and are frequently anecdotal. United States researchers suggest that illegal logging and/or illegal timber imports make up about 45 percent of all timber logged in or imported into Laos (Seneca Creek 2004: 13). According to a small number of sources, illegal logging in Laos involves harvesting without prior authorisation, logging above set quota, failures to mark logs, and forged marking and labelling of logs. It has also been found that some logging operations have been certified, although they violate relevant laws and regulations (Lang 2006).

The Laotian Government started to develop forestry policies in 1989 and formulated a National Forestry Action Plan in 1990–91. The Forest Law (Law 125 Lao PDR) was promulgated in October 1996 (the full text of the Forest Law 1996 (Lao PDR) was not available at the time of writing). All forests in Laos are state-owned and managed by the Department of Forestry. The Ministry of Defence administers the National Biodiversity Conservation Areas (FAO 2005; Southavilay & Castren 1999). Most commercial logging in Laos is carried out by state-owned enterprises, although private individuals and organisations may obtain tenure rights over production forests. Relevant government agencies set annual logging quotas, although there have been criticisms about the method and criteria used in this process (FAO 2005). Commercial logging projects in Laos require management plans prior to being granted logging permits. However, it has been found that very few projects have these plans, partly because of a lack of clear guidelines (FAO 2005).

Laos National Forestry Policy places vast areas of land under protection. Approximately 14 percent of the total territory of the country has been declared National Biodiversity Declaration Areas (Prime Ministerial Decree No. 164 on National Biodiversity Conservation Areas, October 1993) in addition to over 1,000 provincial and district-level protection sites (Chanthirath n.d.). Some sources (dating back to 1999) suggest that 7 to 8 million hectares or 70 to 80 percent of productive forestland are protected (Southavilay & Castrén 1999). FAO estimates made in 2005 suggest that over 12 million hectares of forest are placed under protection (FAO 2005). There has been some criticism concerning inconsistencies about the ways and criteria used to place forests under protection, and the lack of control and enforcement of these sites and the harvested volumes (Southavilay & Castrén 1999).

At the time of writing, no further information was available on criminal offences relating to illegal logging, and the illegal trade in timber and timber products under Laotian law.

Thailand

Thailand's forests cover approximately 13 to 14.8 million hectares of land. Much of the forests are tropical forests featuring rare and highly valued tree species. Other forests are made up of mixed deciduous or dry dipterocarp forests. Commercially valuable timber species found in natural forests include keruing, meranti, teak, merawan and daeng (ITTO 2006: 186, 188). In addition to natural forests, Thailand has cultivated extensive tree plantations constituting approximately 25 percent of the country's forest cover. These plantations are now the primary source for domestic roundwood production featuring species such as eucalyptus and rubberwood (Katsigris et al. 2004: 237, 239, 240).

Following disastrous erosions and flooding in southern Thailand caused by massive deforestation, and which killed 400 people in 1988, the Thai Government declared a complete ban on commercial logging in January 1989 and revoked all logging licences (Asia-Pacific Forestry Commission 2001: 9; Lombardini 1994: 211–214). In 1996, this ban was extended to mangrove forests. Legislation introduced in 1992 facilitated reforestation efforts in some parts of the country and allowed for development of extensive forest plantations. The logging ban in natural forests remains in place, making Thailand heavily dependent on timber imports, especially from neighbouring countries (ITTO 2006: 188).

The logging ban introduced in 1989 led to an immediate decline in domestic logging and currently there are no records of official logging in natural forests in Thailand. At the same time, instances of illegal logging and other unauthorised forest encroachments have become more widespread (ITTO 2006: 188). There are, at present, no figures or estimates available on the extent of illegal logging in Thailand and most of the available evidence comes from isolated reports. Most of the information relates specifically to illegal harvesting of trees that takes place in national parks in the north-western parts of Thailand involving trees that are fraudulently marked as being from Myanmar. EIA and Telapak (2001: 9–10) have reported that 1.5 million logs of teak have been illegally felled in Salween National Park and that about THB100m was paid in bribes to falsely document the logs as originating from Myanmar. The organisations also reported illegal logging activities in government plantations.

Thai law contains a myriad of legislative instruments that deal with forestry and forest related matters. The single most important piece of legislation is the Forest Act 1941 (Thailand) which sets out relevant provisions relating to logging in forests, collection, processing and transportation of timber and timber products. Under the Act, all forests are owned by the state and any harvesting and other encroachment requires prior permission (section 11). Other relevant laws include the National Park Act 1961, the National Reserved Forests Act 1954, the Forest Plantation Act 1992, and the Reforestation Act 1992. The Plant Species Act of 1992 provides for protection of CITES species and other wild flora in Thailand.

In sections 69–74IV, the Forest Act 1941 (Thailand) sets out an extensive catalogue of criminal offences relating to illegal logging; they include logging without licence (section 73),

use of illegal equipment in logging operations (section 73II), burning forests and damaging trees (sections 72III, 71II), receiving, concealing, disposing of and possessing illicitly obtained timber (sections 70, 72II), unlawful possession of protected timber species (section 69), and removing or altering government seals and other marks (section 71). Relevant enforcement powers are set out in section 64II of the Forest Act 1941 and in accompanying legislation.

Vietnam

About 30 percent of Vietnam, or 10 million hectares, is forest cover, comprising for the most part a mix of subtropical and temperate forests. In addition, Vietnam's forest plantations cover approximately 1.7 million hectares (mostly *Eucalyptus camaldulensis*) and the government seeks to increase the forest cover to 43 percent of Vietnam's territory.

Vietnam's forests were severely damaged by the effects of the Vietnam War (1965–75). Some reforestation efforts began as early as 1975, but the following two decades also saw considerable exploitation of forests for production purposes at unsustainable levels (FAO 2002a; Wolf 1996: 431).

Vietnam's forestry policy underwent some changes beginning in the late 1980s and throughout the 1990s, with an emphasis on environmental protection and a move away from socialist collectivisation towards greater participation by local communities and the private sector. Formally, all land is owned by the state (Article 3 of Forest Resources Protection and Development Act 1991 (Vietnam)), but many areas are allocated to private or community organisations by way of forest tenure (Article 2). Logging restrictions were introduced gradually from 1992 (Asia–Pacific Forestry Commission 2001: 10). In 1994, the government allocated over 1.4 million hectares to local farmers and their families. Simultaneously, steps were taken to develop forest management plans for state-owned forests and reduce the exploitation of natural forests. In 1985, the government developed the Tropical Forestry Action Plan, followed by the National Forestry Action Plan in 1993. The new policies, aimed at protecting and restoring natural forests while developing forest plantations, reduced the logging volume in natural forests from over 3 million cubic metres in 1998 to only 300,000 cubic metres in 2003 (Asia–Pacific Forestry Commission 2001: 6; FAO 2002b; FAO 2002c). Moreover, the government placed a ban on export of logs and sawn timber. The drastic decline in domestic wood production resulted in a need to import timber from abroad, both for domestic consumption and for wood processing aimed at the export market. At the time of writing, there were no reliable reports about the levels and patterns of illegal logging in Vietnam.

Vietnam's principal forestry law is the Forest Resources Protection and Development Act 1991. The Act stipulates the principles of Vietnam's forest administration (Articles 8–17), the granting of concessions (Articles 40–41), and the classification of forests into protected,

special and production. Moreover, the Act sets out a number of criminal offences relating to destruction of forest resources (Article 6), burning and encroachment of forests, and exploitation, trading, and transporting of forest products (Articles 20, 50). A special offence for abuse of office and corruption can be found in article 51. Additional offences are contained in the Penal Code of Vietnam, including breaching regulations on forest exploitation and protection (Article 175), breaching regulations on forest management (Article 176), and destroying forests (Article 189).

Philippines

Estimates about the forest cover of the Philippines vary greatly. Official sources classify 16 million hectares as forest, while more modest estimates suggest that between 5.4 and 7.2 million hectares can be regarded as forest cover. Most of the forests – about 81 percent – are evergreen rainforests, featuring species such as mayapis, bagtikan and bigtanghol, which are commonly used in industrial roundwood production and in the sawmilling and plywood industries. The Philippines also has somewhere between 274,000 and 753,000 hectares of forest plantations consisting mostly of *Gemilina arborea*, *Albizia falcataria*, *Eucalyptus* spp. and small amounts of teak (ITTO 2006: 179, 182),

Historically, the Philippines has witnessed rapid deforestation: ‘No other Asia–Pacific country was deforested as the Philippines in the period after World War II’ (ITTO 2006: 181). At its peak, up to 300,000 hectares were logged per year in the 1980s (Asia–Pacific Forestry Commission 2001: 5). At that time, forest concessions held by private enterprises covered more than two-thirds of the country’s forest resources. Logging restrictions were introduced in 1991 to protect biodiversity and vulnerable areas, and to slow the rapid decline of forest resources (Asia–Pacific Forestry Commission 2001: 8). Deforestation decreased throughout the 1990s to about 89,000 hectares per year (ITTO 2006: 179), but despite the logging bans, forest cover continues to decline due to excessive and illegal logging (Asia–Pacific Forestry Commission 2001: 6). There are currently no reliable reports available about the patterns and levels of illegal logging in the Philippines.

Beginning in the late 1980s, the Philippines began to adopt more restrictive policies aimed at preserving national forest resources and limiting their exploitation. Following a constitutional amendment in 1987, the number of logging concessions granted each year dropped radically, although existing concessions remained operative until their expiry date, thus delaying the effect of the legislative changes by several years. In January 1992, a complete ban on logging in old-growth forests came into force. Throughout the 1990s, the policy shifted towards a community-integrated approach that recognises the rights of Indigenous people and simultaneously encourages commercial investment in the forest sector. Approximately 1.54 million hectares of forest have been placed under protection (ITTO 2006: 181, 183).

The centrepiece of forestry legislation is the Revised Forestry Code, Presidential Decree (1975, as amended). The Code saw major changes in the 1980s and 1990s, reflecting the shift from large-scale commercial exploitation towards sustainable use and management of the Philippines's forests. The Revised Forestry Code contains a number of offences relating to illegal logging, such as cutting, gathering and/or collecting timber or other products without licence (section 78), unlawful occupation or destruction of forest lands (section 79), and unlawful sale of wood products (section 88). Specific offences relating to corruption exist in section 86 (coercion and influence of public officers) and section 84 (misclassification and survey by government official or employee).

Observations

This chapter has identified the key sources of illegal timber in the Asia–Pacific region. It has been found that the countries with the greatest natural forest resources in the region, such as Russia, Indonesia and Papua New Guinea, are also the countries that have high levels of illegal logging.

Illegal logging appears to be particularly rampant in those countries in which forests are in remote locations that are distant from administrative centres and are difficult to access for government officials and inspectors. Furthermore, levels of law enforcement – and lack thereof – have a direct impact on the levels of illegal logging and associated activities. It has been shown that many countries in the region lack the resources, technology, staff and infrastructure to comprehensively control all logging activities throughout their territories. Lastly, the issue of corruption contributes further to the levels of illegal logging. Those countries that have decentralised administrative systems in which decisions about logging concessions are made at local or district levels, such as Indonesia, are particularly vulnerable to corruption and bribery of local officials who are often only poorly paid and accept bribes to support themselves and their families. But corruption also affects higher and senior government ranks and the military, which seem to be actively involved in illegal logging operations in some nations.

These initial observations demonstrate a close and direct link between governance, the rule of law and illegal logging. This chapter has shown that countries with comprehensive policies and legislation against illegal logging are also not immune to these activities. In many nations, there appears to be a great discrepancy between forestry laws and policy from one perspective, and practice and enforcement of these principles from another. A recent report published in the United States has linked the rule of law with the effects of law enforcement in the context of illegal logging (Table 13).

Table 13: Effects of law enforcement on illegal logging

Law enforcement within nation	Effects on timber trafficking
Enforcement/Rule of law	Illegal logging is minimal in nations where the rule of law operates in concert with a strong and transparent national enforcement mechanism. However, such nations may nevertheless be susceptible to importation of timber that was obtained illegally within other countries.
Enforcement/No rule of law	Illegal timbering is significant in nations where the rule of law is inoperable, but there exists a strong national enforcement mechanism (akin to a dictatorship), which has the power and the will to facilitate grand corruption.
Some enforcement/No rule of law	Illegal timbering is significant in nations where the rule of law is inoperable and there exists appreciable local enforcement. This model describes nations whose policies are vulnerable to the effects of petty corruption, insurgencies and organised crime.
No enforcement/No rule of law	Illegal timbering is appreciable in nations where the rule of law is inoperable and there exists neither local nor national enforcement. This scenario creates an environment that stimulates an unfettered marketplace, although production may be limited by the absence of effective infrastructure for harvesting forests.

Source: Abt Associates Inc. (2006: 7)

Throughout the Asia–Pacific region, there is no shortage of extensive and comprehensive regulation of the forestry sector, but there are major shortcomings in their implementation and enforcement. While some nations, such as Indonesia, lack the resources to thoroughly implement ambitious policies, other countries such as Papua New Guinea, have been found ignoring their own policies and laws for short-term financial benefit, thus contributing to unsustainable levels of logging.

However, even countries with tough laws and policies, and stringent enforcement, such as China, Thailand and Australia, contribute to illegal logging in the region. As these and other nations have placed much of their timber resources under protection and thus effectively reduced or eliminated domestic logging, they now rely more heavily on imported timber, thereby further fuelling the demand for cheap logs. Seneca Creek remarked that:

Reports and allegations of illegal forest activity or wood trade in industrialised countries have surfaced from time to time, but are generally not of a nature or degree that rises to a level of international significance as described earlier.

Nevertheless, industrialised countries are engaged in wood products trade with countries where the issue is significant and relevant (Seneca Creek 2004: 6).

The relatively low price of illegally felled logs – in simple terms: the fact that illegal wood is cheaper – crystallises as the principal reason for illegal logging in the region. The common

reason to engage in any of the illegal logging activities described in ‘What is illegal logging?’ (above) is that they represent a much cheaper way to obtain timber than through licit sources. The costs of purchasing licences, complying with harvesting and reporting requirements, and paying levies and taxes add significantly to costs of the raw product and eventually to the wholesale and retail price (Abt Associates Inc. 2006: 16). Illegal activities, in comparison, are much less expensive, especially if risks of detection, arrest and seizure are low. Seneca Creek remarked that:

[T]hose that engage in illegal forest activity do so largely because of the higher profit potential and/or shortages of legal material. Typically, higher returns are possible because illegal timber is presumably obtained at a lower cost than otherwise would be the case if legal. The lower cost also includes a premium associated with the risk of penalties for being caught (Seneca Creek 2004: 28).

The examples of Indonesia and China have shown that high taxes, duties and other fees involved in the licit timber industry create incentives to look for other, inexpensive ways of ‘doing business’ to avoid government charges and undercut competitors’ prices. The opportunities and profits offered by illegal activities are particularly obvious in areas where levels on control and enforcement are low.

For local people involved, illegal logging often represents an easy, and sometimes the only avenue to earning sufficient income (Seneca Creek 2004: 6). Research has shown that, from one perspective, entrepreneurial amateurs who see the opportunities offered by the ‘black market’ in illegal timber and timber products carry on some illegal logging operations; and from another perspective, in some places (for example, PNG and the Solomon Islands), illegal logging is carried out by large multinational companies that deliberately or negligently ignore relevant laws and policies or exercise influence over administrative branches of government.

A particular problem that emerges in determining the patterns and criminology of illegal logging is that generalisations about perpetrators are almost impossible to make. From the available information, it seems that illegal logging and the associated activities are carried out by small, local groups as well as international corporations, and by legal as well as illicit enterprises. In particular, it is difficult to clearly separate so-called white-collar crime from organised crime; that is, separating licit operators engaging in illicit business practices from criminal organisations seeking to make profits from trading illicitly sourced commodities. Other research published in 2006 confirms that it is not possible to ‘distinguish between aggressive, legitimate business people who operate in an ambiguous and uncertain business environment, and aggressive, illegitimate business people who wilfully breach national and international laws’ (Abt Associates Inc. 2006: 23).

In summary, illegal logging – that is, the felling of protected trees, logging in protected areas or outside concession boundaries, logging without licences, or with fake or fraudulently obtained licences, and other associated activities – are caused by a myriad of factors that

are linked to governance, enforcement, legislation and, in particular, economic opportunities. A recent report published by the New Zealand Ministry of Agriculture and Forestry accurately summarised ‘the causes of illegal logging and associated trade’ in four categories: governance, legislative and policy, market capacity and technical ability (Watson 2006: 18) (Table 14).

At the centre of the difficulties in preventing and suppressing illegal logging and the associated trade are two conflicting interests: one is to protect existing timber resources, national parks, endangered species, etc. and the other is the need for economic development. Two commentators observed that:

In some instances, the need for development conflicts with the protection of forests and species. In other cases sustaining local habitats conflicts with the interests of foreign investors or international companies and the local population must live with the environmental consequences of foreign development decisions over which they have no control (Michalowski & Bitten 2005: 142–143).

The solution to this problem is seen in the concept that is generally referred to as ‘sustainable development’ that attempts to reconcile environmental considerations with economic development. Sustainable development also recognises that the two apparently conflicting and competing concerns do indeed share a common goal; that is, to secure and improve the livelihoods of present and future generations. These livelihoods are put at risk by illegal logging and the associated activities identified in this chapter.

Table 14: Causes of illegal logging

Governance	<ul style="list-style-type: none">• Weak judiciary• Lack of consultation/involvement with forestry stakeholders• Lack of transparency/accountability• Lack of money/funding• Unclear allocation of competencies between government departments• Lack of recognition of Indigenous rights• Weak/absent property rights
Legislative and policy	<ul style="list-style-type: none">• Limited capacity to develop and enforce laws• Weak penalties• Money laundering legislation weak• Weak financial/tax laws• Conflicting and unclear legislation• Transport and trade laws difficult to understand and apply• Limited capacity to make efficient and effective laws• Inappropriate/discriminatory regulations
Market	<ul style="list-style-type: none">• Absence of national criteria and indicators in forestry• Forests not an economically superior landuse• Perverse market/non-market subsidies exist• Cost of sustainable forest management compared to conventional logging high• Difficult to change business-as-usual approaches to extracting/trading timber• Tension between private and social values• Little market for environmental goods or services• Lack of produced knowledge about marketing• Consumer demand for hardwoods• Consumer demand for cheap wood products• Lack of consumer knowledge
Capacity and technical ability	<ul style="list-style-type: none">• Inadequate resources• Poorly paid forest departments• Under-funded and resourced customs officials• Weak identification of illegal products• Remote places that are difficult to monitor• Lack of expertise and/or resources in sustainable forest management.

Source: Watson (2006: 18)

Transit points for illegal timber

This chapter explores transit aspects of the illegal timber trade in the Asia–Pacific region by analysing patterns of exportation and processing of timber and timber products. It sets out some of the activities involved in exporting, trafficking and processing of illegal timber, and analyses the magnitude and characteristics of these activities in the countries in the region.

Processing of illegal timber

In the chain of illegal activities associated with the illicit trade in timber and timber products, the steps that follow illegal logging are the processing of timber, milling and the manufacturing of timber products. Use of illegally logged timber reduces the production costs and ultimately the costs of the finished product, thus creating an advantage for operators who do not adhere to laws and industry regulations (Seneca Creek 2004: 7). The processing of illegal timber is one of the most complex steps, as it is used to disguise the origin of the logs and the types of species involved so the final product becomes indistinguishable from products involving legally obtained materials. Illegal processing of timber and manufacturing of timber products involves activities such as processing of illegally obtained timber, processing without licence or with fake licences, and processing with illegally obtained licences (Brack 2003: 195).

Exportation and trafficking

Exportation and trafficking involve a range of illegal activities including transportation of logs without authorisation, exportation of illegally obtained timber, illegal exportation of protected species, misclassification of exports and exportation with fraudulent documents, excessive exportation and declaring of lower values and volumes, clandestine exportation and exportation without permit, and illegally obtaining export permits (Brack 2003: 195; Watson 2006: 18).

The total volume of suspicious wood exports worldwide is estimated to exceed 30 million cubic metres and is valued at almost US\$5b (Table 15). Most of the illegal exports involve roundwood (almost 18 million cubic metres). Illicit exports of lumber and plywood are smaller in volume, but higher in value.

Table 15: Volume and estimated value of suspicious wood exports worldwide

	Suspicious volume total (’000m³)	Estimated value of suspicious volume (US\$m)
Roundwood	17,969	1,231
Lumber	6,928	1,846
Plywood	5,237	1,718
Total	n.a.	4,795

Note: n.a.= not applicable

Source: Seneca Creek (2004: 21)

In general, suspicious softwood exports are greater than suspicious hardwood exports, although total hardwood production and exportation is greater (Table 16). China and Russia show particularly high percentages of illicit hardwood exports, although the volume of suspicious hardwood exports from China is quite small. Among the hardwood exporting countries in the region, Indonesia has by far the highest volumes of illicit wood exports and it has been estimated that between 55 and 100 percent of hardwood exports from that country involve suspicious timber and timber products. About 20 to 30 percent of wood exports from China and Russia also come from suspicious sources. About 20 percent of the very small quantities of plywood and lumber hardwood exported from Japan are considered suspicious (Seneca Creek 2004: 15–16) (Table 16).

Table 16: Wood exports from suspicious sources by type of wood and destination country, 2002

	World total	China	Indonesia	Japan	Malaysia	Russia
Softwood						
Roundwood						
Exports ('000m ³)	81,238	4	2	2	84	37,750
Suspicious volume ('000m ³)	9,974	1	0	0	0	9,438
As % of exports	12.3	30.0	n.m.	n.m.	n.m.	25.0
As % of production	1.0	0.0	n.m.	n.m.	n.m.	9.0
Lumber						
Exports ('000m ³)	98,067	250	n.m.	3	n.m.	8,580
Suspicious volume ('000m ³)	1,892	79	n.m.	0	n.m.	1,287
As % of exports	1.9	31.5	–	7.0	–	15.0
As % of production	0.6	1.5	–	0.0	–	7.6
Plywood						
Exports ('000m ³)	5,862	515	–	3	n.m.	194
Suspicious volume ('000m ³)	226	162	n.m.	0	n.m.	29
As % of exports	3.9	31.5	n.m.	7.0	–	15.0
As % of production	0.8	1.5	–	0.0	–	9.7
Hardwood						
Roundwood						
Exports ('000m ³)	46,898	691	2,900	2	5,610	8,946
Suspicious volume ('000m ³)	7,995	207	2,900	0	561	2,237
As % of exports	17.0	30.0	100.0	n.m.	10.0	25.0
As % of production	1.2	1.0	5.5	n.m.	2.6	5.5
Lumber						
Exports ('000m ³)	21,836	535	4,500	19	2,700	440
Suspicious volume ('000m ³)	5,037	164	2,925	4	320	132
As % of exports	4.6	3.9	65.0	20.0	11.8	30.0
As % of production	23.1	30.6	36.6	0.9	7.2	5.7
Plywood						
Exports ('000m ³)	16,781	1,273	6,752	10	3,870	963
Suspicious volume ('000m ³)	5,011	389	3,714	2	458	193
As % of exports	29.9	30.6	55.0	20.0	11.8	20.0
As % of production	16.6	4.6	49.5	0.1	9.8	12.8

Note: n.m. = not measureable or de minimis

Source: Seneca Creek (2004: 15–16)

Country profiles

This section outlines the transit points for illegal timber in individual countries. The production and processing and the timber and timber product exports of Indonesia, Malaysia, Cambodia, Russia, China, Taiwan (Republic of China) and Papua New Guinea are examined, as well as those of the South Pacific Islands and New Zealand, Thailand, Vietnam, Laos, the Philippines, Japan and Australia.

Indonesia

Production and processing

Indonesia's total wood production is approximately 70 million cubic metres per year, consisting almost exclusively of tropical hardwood. It has been estimated that Indonesia accounts for about 25 percent of the total tropical wood production worldwide (Seneca Creek 2004: 65). Most of the production is roundwood (53.1 million cubic metres); production of lumber (8 million cubic metres) and plywood (7.5 million cubic metres) is considerably smaller (Table 16). In addition, the ITTO estimates that Indonesia produces over 80 million cubic metres of fuelwood (ITTO 2006: 151).

Given the extent of Indonesia's forest resources it is perhaps unsurprising that the country is also home to a large wood processing industry. This industry has grown considerably following the introduction of a ban on log exports and a policy that encouraged domestic processing of timber. Table 17 illustrates the great number of sawmills in Indonesia and the high levels of production of sawn timber, plywood, pulp and paper products. According to the ITTO data, only about one-third of the sawmill production capacity is used. Indonesia is currently the world's biggest producer of tropical plywood and, after Brazil, the world's second largest producer of tropical sawnwood (ITTO 2007: 6, 11). Much of the plywood production is used for domestic consumption (section 'Indonesia', p. 131).

Table 17: Wood production and processing, Indonesia

Type of production	No. of mills, 2000	Production capacity, 2000 ('000m ³)	Actual production, 2003 ('000m ³)
Sawn timber	4,400	19,000m ³	6,250 m ³
Plywood	120	11,100m ³	7,330 m ³
Pulp	81	5,230t	5,480 t
	(pulp + paper mills)		
Paper + cardboard	9,120	6,990t	
Other	Particleboard mills: 39 Blockboard mills: 120 Chipmills: 12 MDF units: 2		Wood residues: 388 m ³

Source: ITTO (2006: 151)

The remarkable discrepancy between actual production and potential production capacity is a result of the massive expansion of the domestic wood processing industry in the 1990s, following bans imposed on exports of raw materials. Table 17 shows that the processing industry in Indonesia now has a major production overcapacity that cannot be met by legal domestic supplies and that subsequently creates pressure on the forestry sector to provide unmet demand (Palmer 2001: 19). This may, in some instances, lead to purchase of illegal logs, especially if they can be obtained cheaply and with little risk of detection (Dudley 2001: 358).

Exports

While the bulk of Indonesia's timber production is for domestic consumption, timber exports from Indonesia constitute approximately half the global tropical hardwood plywood exports and one-quarter of the world's tropical hardwood lumber exports (Seneca Creek 2004: 65).

The key destinations for Indonesian timber and timber products are other countries in the region, including in particular Japan (main destination for Indonesian plywood), China, Taiwan and the Republic of Korea. The ITTO estimates that the total value of logs, sawntimber, veneer and plywood from Indonesia in 2003 was US\$1.8b compared with US\$2.9b in 1999 (ITTO 2006: 151).

To protect its domestic timber resources and ensure that any processing of logs is carried out within Indonesia, the government introduced a log export ban. First steps to prohibit log exports and impose high taxes on them were taken in 1985. This was followed in 1992 by moves to limit rough-sawn timber exports (ITTO 2006: 151). This resulted in much greater plywood, pulp and paper production in Indonesia, and high levels of exports of these products. The export prohibitions also led to a considerable expansion of domestic processing and production facilities that is reflected in the high production capacities of mills shown in Table 17 (Palmer 2001: 8). These prohibitions were temporarily relaxed in 1998, but a complete ban on log exports was reinstated in 2001–02, followed in October 2004 by an export ban on all sawntimber, including railway sleepers.

While this ban had some impact on reducing the level of log exports from Indonesia, there are ongoing allegations about considerable volumes of logs being exported from Indonesia in violation of the export ban. United States research estimates that almost 2.9 million cubic metres of raw logs were exported to China, Malaysia, the Philippines and Thailand between 2002 and 2004 (Seneca Creek 2004: 65) (Table 18).

In 2002, about 73 percent of all timber exports from Indonesia had been logged illegally (Brack, Gray & Hayman 2002: 13). Exports of logs are completely prohibited.

Table 18: Suspicious wood exports by type of wood, Indonesia, 2002

	Total exports (‘000m ³)	Suspicious volume, total (‘000m ³)	Suspicious volume, % of exports	Suspicious volume, % of production
Softwood				
Roundwood	2	0	n.a.	n.a.
Lumber	n.a.	n.a.	n.a.	n.a.
Plywood	n.a.	n.a.	n.a.	n.a.
Hardwood				
Roundwood	2,900	2,900	100.0	5.5
Lumber	4,500	2,925	65.0	36.6
Plywood	6,752	3,714	55.0	49.5

Note: n.a. = not applicable

Source: Seneca Creek (2004: 15–16)

Suspicious exports of hardwood in the form of lumber and plywood are also very high. It is estimated that almost 3 million cubic metres of lumber or 65 percent of all exports are suspicious. Approximately 55 percent or 3.7 million cubic metres of plywood exports are said to be suspicious (Table 18).

A particular pattern that has emerged since the export ban was reintroduced in 2001 is that logs from Indonesia are initially smuggled from Indonesia into Malaysia. The overland route from the Indonesian province of Kalimantan into Sarawak in neighbouring Malaysia, and the sea route from Sumatra to Peninsular Malaysia, have been identified as two of the main smuggling routes (Brack, Gray & Hayman 2002: para 2.8; ICG 2001: 16). Although Malaysia imposed a ban on log imports from Indonesia in June 2002, NGOs have suggested that between 3 and 5 million cubic metres of illegal Indonesian timber enters Malaysia each year (EIA & Telapak 2003: 3, 4). There are also reports that 650,000 cubic metres of sawn timber were exported to Malaysia in the first five months after Indonesia imposed a ban on such imports in 2004 (EIA & Telapak 2005: 5–6). Once in Malaysia, the logs are re-badged as logs of Malaysian origin and documents are forged accordingly. From Malaysia, they are exported to third countries that have no way of establishing the true origin of the logs. There are several reports from China about imports of Indonesian timber that have been falsely declared as Malaysian (EIA & Telapak 2005: 3; ICG 2001: 16).

There are equally reports about illegal shipments of Indonesian logs to Singapore. To disguise the exports, they are concealed in containers beneath legal wood, or false species names are used on relevant documents. From Singapore, the timber is often exported to China or, in some cases, back to Indonesia where it is then considered as imported wood, thus avoiding regulations applicable to domestic timber (EIA & Telapak 2003: 6). A small number of cases are known in which Indonesian timber has been accompanied by false documents from Papua New Guinea (EIA & Telapak 2005: 3).

China emerges as one of the principal destinations for illegal timber exports from Indonesia via Malaysia or directly by sea from West Papua (ICG 2001: 11, 16). For example, in 2004 China Customs registered 90,000 cubic metres of illegal log imports from Indonesia (Stark & Cheung 2006: 38). There have also been some reports about Indonesian timber being laundered through Singapore and the Philippines, although further details about these avenues are not available (EIA & Telapak 2003:1).

Malaysia

Production and processing

According to ITTO figures, Malaysia's annual log production in 2007 was 29.2 million cubic metres (ITTO 2007: 76). As a result of declining forest resources and greater protection of forest areas, annual log production in Malaysia declined considerably throughout the 1990s from 39.3 million cubic metres in 1990 to 22.3 million cubic metres in 1999 then 17.9 million cubic metres in 2002. Log production has increased slightly over the past five years (ITTO 2006: 161; ITTO 2007: 76).

Supported by government policy, Malaysia has become home to a vast timber processing industry including many sawmills, wood panel manufacturers, wood moulding, and parquet and furniture makers. The ITTO suggested that total value of timber products from Malaysia amounted to US\$4.5b in 2003 (ITTO 2006: 161). In 2007, Malaysia produced approximately 5,572,000 cubic metres of sawn timber (making Malaysia the world's second-biggest sawnwood producer after Brazil) and 5,190,000 of plywood (second only to Indonesia), as well as 357,000 cubic metres of veneer (second only to China); a significant increase compared to previous years (ITTO 2007: 6–8, 11, 76).

The growing production capacity in Malaysia, and the domestic and international demand for Malaysian timber products, has resulted in a situation where demand exceeds supply, especially in the face of declining logging volumes. Much of Malaysia's furniture production involves rubberwood from domestic plantations, but the supply falls short of the industry's need (Chen 2004: x–xi). Many see the discrepancy between supply and demand as an incentive to use illegally obtained timber, including imported logs, to offset the supply deficit. In particular, despite a ban imposed in 2002 on imports of logs from Indonesia, there is ample evidence of logs being exported illegally from Indonesia to Malaysia for processing or further export (see also section 'Indonesia: Exports' p. 95 and section 'Malaysia', p. 131).

In an attempt to prevent use of timber from suspicious sources in wood production, Malaysia maintains a log tracking system designed to stop the timber manufacturing industry from buying logs from illegal or unspecified sources. Government officials regularly control the logs that sawmills and plywood mills use, and fine those operators who are found using unmarked logs. But despite comprehensive regulation and enforcement, use of

suspicious logs continues. Furthermore, once illegally sourced logs have been processed, it becomes difficult, if not impossible to distinguish the manufactured products. As a result, the provincial governments in Malaysia are now exploring additional control mechanisms such as DNA analysis of logs and introduction of new, more comprehensive chain-of-custody schemes (Chen 2004: xi–xii; Seneca Creek 2004: 46).

Exports

In recent years, Malaysia has exported approximately 25 percent of its domestic log production. According to the ITTO, log exports in 2007 amounted to 4,846,000 cubic metres in addition to 3,148,000 cubic metres of sawn timber, 4,800,000 cubic metres of plywood and 396,000 cubic metres of veneer (ITTO 2007: 77). Over the past 15 years, log exports have gradually declined as a result of fewer resources and government attempts to limit export of logs and increase domestic processing facilities. Peninsular Malaysia has instituted a complete ban on raw log exports, and log exports from Sabah are also restricted. Sarawak remains the main exporter of raw logs. For example, in 1999, Malaysia exported only 5.24 million cubic metres of logs compared with 20.3 million cubic metres in 1990 (ITTO 2006: 161). In 2003, about 4.4 million cubic metres of log exports originated from Sarawak. Although most of the roundwood production in Malaysia is for domestic consumption (see section 'Malaysia' p. 131), it remains the world's largest tropical log exporter (ITTO 2007: 6).

Japan, China, Taiwan and India are the four most important destinations for timber exports from Malaysia, each accounting for about 20 percent of exports. Other important destinations for Malaysian sawnwood and for plywood are Europe, Thailand, Singapore and South Africa. Wood furniture is, for the most part, exported to the United States, Japan, Australia and Europe (ITTO 2007: 32; Seneca Creek 2004: 82–83).

The total value of exports of timber and timber products from Malaysia is estimated to be US\$2.47b. Plywood constituted about 43 percent of these exports (in value), followed by sawnwood (27%) and logs (21%) (ITTO 2006: 161). Malaysia is widely regarded as the largest exporter of tropical logs in the world, supplying about 35 percent of the worldwide trade (Seneca Creek 2004: 82–83). Due to the growth of processing capacity in Malaysia, exports of logs have gradually declined while exports of processed timber, especially plywood and furniture, are on the rise.

Table 19: Suspicious wood exports by type of wood, Malaysia, 2002

	Total exports (‘000m ³)	Suspicious volume, total (‘000m ³)	Suspicious volume, % of exports	Suspicious volume, % of production
Softwood				
Roundwood	84	0	n.m.	n.m.
Lumber	n.m.	n.m.	n.a.	n.a.
Plywood	n.m.	n.m.	n.a.	n.a.
Hardwood				
Roundwood	5,610	561	10.0	2.6
Lumber	2,700	320	11.8	7.2
Plywood	3,870	458	11.8	9.8

Note: n.m. = not measurable or de minimis; n.a. = not applicable

Source: Seneca Creek (2004: 15–16)

By volume, about half of all timber exports from Malaysia involve hardwood logs, and US research has estimated that about 10 percent of these roundwood exports are suspicious, frequently involving illegally logged timber or logs originating from Indonesia that are laundered through Malaysia using fraudulent documents (see section ‘Indonesia: Exports’, p. 96). Lumber and plywood exports from Malaysia are smaller in volume (but greater in value) and observers have suggested that 11.8 percent of these exports are suspicious (Table 19).

To prevent the export of illegal logs, Malaysia has implemented a logtracking system that can trace logs from their source to their final destination and serves as a tool to distinguish legal from illegal logs. Furthermore, following the inclusion of ramin in CITES Appendix II, Malaysia has stepped up measures to control and prevent exportation of endangered tree species. Despite this system, which is accompanied by comprehensive control and enforcement measures, there are many reports of illegal logs from Indonesia being marked as Malaysian timber that are then re-exported with false documents (Chen 2004: xi–xii; EIA & Telapak 2005: 3).

Cambodia

Production and processing

Information about levels and capacities of wood production and processing in Cambodia is limited. Timber production in Cambodia has decreased significantly since the mid-1990s due to new policy changes and depletion of forest resources (see chapter ‘Sources of illegal timber’). From 2000, the Cambodian Government gradually introduced a logging moratorium that subsequently led to declining wood production and processing. In 2007,

Cambodia produced only 103,000 cubic metres of logs in addition to small quantities of sawn timber (55,000 cubic metres), veneer (55,000 cubic metres) and plywood (20,000 cubic metres) (ITTO 2007: 74).

Exports

Cambodia's declining timber production is also reflected in declining export figures. Over the past decade, total wood exports from Cambodia have fallen from 259,200 cubic metres in 1996 to 12,700 cubic metres in 2002. Historically, most of the timber exports involved roundwood until a ban on log exports was introduced in 1997; only about 1,000 cubic metres of logs were exported in 2007 (ITTO 2007: 75). Simultaneously, Cambodia had a growth in domestic milling and wood processing, which resulted in increasing exports of sawn timber, plywood and veneer production and exports. Sawn timber exports peaked in 1997 when Cambodia exported 72,600 cubic metres of sawn timber. Plywood and veneer exports reached 197,000 cubic metres in 1998. At that time, the trade in timber and timber products, valued at US\$60m, constituted about 43 percent of Cambodia's foreign trade (Peters 1999: 105). But the logging moratorium resulted in a decline of wood exports over the past 10 years. In 2007, for example, Cambodia exported only 50,000 cubic metres (over 90% of the domestic production) of sawn timber in addition to 5,000 cubic metres of plywood (ITTO 2007: 75). Most of the timber exports from Cambodia have been, and continue to be, destined for China, Taiwan, Japan, and neighbouring Thailand and Vietnam (Amariei 2004: 6–7).

There are currently no reports about illegal wood production and illegal timber exports from Cambodia, although there have been some allegations about non-registered mills, many of them mobile, operating in the country. There have also been rumours about members of the military exporting wood illegally (Amariei 2004: 6, 11; Global Witness 2004: 13–14).

Russia

Production and processing

Processing of timber in Russia has been historically limited. The Russian Far East in particular has small wood processing facilities and capacities have declined since the disintegration of the Soviet Union, which resulted in a loss of subsidies to mills and other wood-based industries. Over the past 15–20 years, the central government in Moscow has failed to make any significant investments in mills and wood manufacturing in the region. There has also been an absence of foreign investment into wood processing facilities in Russia while processing capacities in neighbouring countries, especially in China, have grown rapidly (Crowley 2005: 429–431; Pye-Smith 2006: 7).

Exports

It has been estimated that the total value of timber and timber product exports from Russia in 2006 was US\$5.7b, an increase of 26 percent compared with 2005 (Hansen & Mura 2006: 4). Most of the timber exports from Russia involve raw logs, which means that Russia's timber industry misses out on the value adding involved in processing. Over 95 percent of timber exports from Russia to China are in the form of raw roundwood, usually involving red pine (40.4% of log exports to China) and larch (41.8%) (Pye-Smith 2006: 5, 7).

Processing facilities in Russia, especially in the Russian Far East, are limited and consequently exports of lumber, plywood and other timber products are comparatively small (Crowley 2005: 434). Table 20 shows that most exports involve softwood and that levels of hardwood exports from Russia are considerably smaller.

In recent years Russia has become the greatest foreign supplier of wood for China. China accounts for approximately 44 percent of softwood exports from Russia. Finland (19%) and Japan (17%) are other major destinations for Russian wood, as is the Republic of Korea. Hardwood exports, in contrast, are destined for the most part for Finland (66%) and, in smaller quantities, China (19%) (Crowley 2005: 435; Seneca Creek 2004: 13).

Table 20: Suspicious wood exports by type of wood, Russia, 2002

	Total exports (^{'000m³})	Suspicious volume, total (^{'000m³})	Suspicious volume, % of exports	Suspicious volume, % of production
Softwood				
Roundwood	37,750	9,438	25.0	9.0
Lumber	8,580	1,287	15.0	7.6
Plywood	194	29	15.0	9.7
Hardwood				
Roundwood	8,946	2,237	25.0	5.5
Lumber	440	132	30.0	5.7
Plywood	963	193	20.0	12.8

Source: Seneca Creek (2004: 15–16)

It is estimated that approximately 15–30 percent of wood exports from Russia come from suspicious sources. Seneca Creek estimates that about 25 percent of raw log exports from Russia are suspicious. This is unsurprising given the widespread allegations of illegal logging in the country (see section 'Russia: Illegal logging', p. 66). About 15 percent of processed softwood exports are said to be suspicious. Processed hardwood appears to involve relatively greater levels of suspicious wood exports (20–30%). NGOs estimate the levels of suspicious exports to be greater; with Greenpeace citing sources suggesting that 75 percent of Russian timber exported to Finland was produced illegally (Greenpeace 2006: 5).

The main reasons for the high levels of illegal timber exports from Russia are the porous border with China, limited or complete lack of border controls and law enforcement, lack of reliable documentation and other processes, and corruption (Seneca Creek 2004: 107). Many timber exports from Russia are illegal because the timber involved comes from illicit sources. Exports of timber from Russia may also be illegal because they are carried out clandestinely, are falsely declared or mislabelled, or are exported by use of forged export and transport documentation or bribery (Ottitsch, Moiseyev & Kazusa 2005: 12; Pye-Smith 2006: 10–11; Vandergert & Newell 2003: 303, 305). Observers estimate that a total of US\$32 is paid in bribes for every cubic metre of hardwood sold for US\$140 at the Chinese border. The bribes include payments to government forestry officials, environment inspectors and customs officials, and also to militias and local gangs for protection (Pye-Smith 2006: 5).

Clandestine exportation involves, for example, 'high value hardwood logs that are placed on the bottom of the [train] car and [covered] with lower value spruce or larch logs' (Seneca Creek 2004: 111). Alternatively, timber is brought into China through small, more remote border crossings or across unpatrolled rivers (Vandergert & Newell 2003: 304). Another pattern of illegal exportation, especially from the Russian Far East, involves exports in excess of authorised volumes by use of temporary export declarations. These are used for individual shipments that are part of bigger and ongoing exports and do not require exact specification of the quantities involved. Only at the end of each month are exporters required to provide accurate figures. By that time, the authorities cannot, however, verify the declaration and it has become common practice to under-report actual volumes exported (Pye-Smith 2006: 10–11; Seneca Creek 2004: 111).

People's Republic of China

Production and processing

The capacity of China's wood processing industry is among the greatest in the region and perhaps in the world. The growth of the industry is directly linked to the growing demand and consumption of wood products from China, domestically and internationally. Domestic demand for timber products in China and the demand by other countries for wood products from China have led to a rapid growth of the timber production and processing industry in this country. As domestic logging is severely restricted (see section 'People's Republic of China: Timber resources', p. 75), the industry relies heavily on timber imports from other countries.

Most of the wood imported into China arrives in the form of roundwood and further processing is carried out in China. For example, it has been estimated that as much as 90 percent of Russian softwood entering China arrives in the form of logs (Pye-Smith 2006: 13). As at June 2004, China had 64 certified wood processing companies, although the number of small sawmills operating independently is said to be in the thousands (Zhu, Taylor & Guoqiang 2004: 10). For example, the town of Suifenhe at the border to Russia and one of

the main points of importation of Russian timber into China is said to have 400 sawmills (Pye-Smith 2006: 11). In 2007, China produced approximately 56 million cubic metres of logs, 25.676 million cubic metres of sawn timber, 20.756 million cubic metres of plywood and 3 million cubic metres of veneer (ITTO 2007: 54).

Processing of timber in China requires government permits, although these are often difficult to obtain, especially when quotas are limited (Zhu, Taylor & Guoqiang 2004: 8). Consequently, it can be assumed that some sawmills operate illegally. From one perspective, many small mills and processing facilities have been closed recently as wood processing is increasingly concentrated in a small number of new large wood and wood-fibre mills. From another perspective, the liberalisation of China's economy has enabled almost unrestricted foreign direct investment into the timber industry, which has greatly increased China's wood processing capacity. Much of the investment is made into pulpwood plantations and large pulp and paper processing facilities. Cheap labour and China's increasingly open economy are the main incentives for foreign investment in this industry. It has been estimated that China's pulpwood processing capacity will expand from 12.8 million cubic metres in 2000 to 29 million cubic metres in 2015 thus further fuelling the demand for timber imports (Stark & Cheung 2006: 18; Zhu, Taylor & Guoqiang 2004: 11, 24).

China is also among the leading producers of wooden furniture, which frequently involves use of high-quality tropical hardwood imported into the country. With demand for furniture from China growing in domestic and foreign markets, it is expected that this sector will continue to grow and thus further raise the demand for imported roundwood, especially for tropical timber species found in Indonesia, Malaysia and Papua New Guinea (Zhu, Taylor & Guoqiang 2004: 17). Moreover, given the low manufacturing costs in China, foreign companies from Hong Kong, Taiwan, Singapore and Malaysia are expected to continue making big investments in the wood manufacturing industry thus further increasing production capacities (Stark & Cheung 2006: 25; Zhu, Taylor & Guoqiang 2004: 19–20).

Exports

Wood exports from China have increased greatly in recent years, with some sources suggesting a 3.5-fold growth between 1995 and 2004 with growth rates further accelerating in recent years (Greenpeace 2006: 23). Greenpeace has estimated that China exported wood-derived products of a comprised volume of 35 million cubic metres in 2003 and 40 million cubic metres in 2005 (Greenpeace 2006: 23). The value of wood product exports has risen from US\$3.6b in 1997 to US\$17.2b in 2005 (White et al. 2006: 10).

The timber and timber products exported from China almost exclusively involve processed material. Export of roundwood is extremely limited because the government has restricted exports of primary products such as logs. In 2007, China only exported 4,000 cubic metres of logs (ITTO 2007: 55). Instead, the government encourages exports of value-added timber

products, which now constitute about 99 percent of all exports. The wooden furniture and plywood sectors have seen the greatest growth in exports in recent years. The value of wooden furniture exports alone is said to have risen seven-fold since 1995, exceeding US\$7.1b in 2005 (Greenpeace 2006; ITTO 2007: 25), reaching a volume of 12.7 million cubic metres in 2005 (White et al. 2006: 11). Plywood exports rose to 8.8 million cubic metres in 2007, making China the world's largest exporter (ITTO 2007: 55; White et al. 2006: 11). Paper and woodchips comprise the remaining 11 million cubic metres of exports (Stark & Cheung 2006: 21, 24; Zhu, Taylor & Guoqiang 2004: 18). Exports of veneer and sawn timber (676,000 and 103,000 cubic metres respectively) are small in comparison (ITTO 2007: 55).

The main destinations for timber products exported from China are neighbouring countries in East Asia, and also Taiwan, Hong Kong and the United States. The United States, the European Union and Hong Kong are also the main destinations for wooden furniture from China made from species such as merbau, jatoba and teak. Plywood (made from meranti and other species) and paper are mostly exported to Japan, the Republic of Korea, the United States and Taiwan (Greenpeace 2006: 24; ITTO 2007: 25; Pye-Smith 2006:15; Stark & Cheung 2006: 24; White et al. 2006: 11; Zhu, Taylor & Guoqiang 2004: 18–19).

Table 21: Suspicious wood exports by type of wood, China, 2002

	Total exports (‘000m³)	Suspicious volume, total (‘000m³)	Suspicious volume, % of exports	Suspicious volume, % of production
Softwood				
Roundwood	4	1	30.0	0.0
Lumber	250	79	31.5	1.5
Plywood	515	162	31.5	1.5
Hardwood				
Roundwood	691	207	30.0	1.0
Lumber	535	164	30.6	3.9
Plywood	1,273	389	30.6	4.6

Source: Seneca Creek (2004: 15–16)

China's wood exports are seen as a major source of illegal timber products; levels of timber exports from China are very high and Seneca Creek has estimated that approximately 30 percent of all softwood and hardwood exports, raw and processed, are 'suspicious' (Table 21). While the exports themselves are legal under Chinese law, they frequently involve products that are made of illegally sourced timber. Consequently, the timber trade route via China has been described as a way to 'launder' timber that has been illegally logged elsewhere (Stark & Cheung 2006: 15, 18).

Further information about the circumstances of illegality is not available. It is known and documented that much of the timber used in wood production in China has been harvested

or otherwise obtained or imported illegally, and that many transactions depend on bribes (see section 'People's Republic of China: Illegal logging', p. 76 and section 'People's Republic of China', p. 124). There is no specific evidence to suggest that some elements of China's wood processing industry are more prone to use timber from illegal sources than others, except one report citing evidence about Chinese manufacturers producing plywood with illegally sourced veneer facing (White et al. 2006: 12).

Taiwan (Republic of China)

Production and processing

Taiwan's timber industry is characterised by offshore investment and timber imports rather than by domestic wood production and processing. A complete ban imposed on logging of all natural timber stands, introduced in 1992, reduced domestic timber production in Taiwan dramatically. It is estimated that today only about 500 hectares are used for commercial timber cultivation, producing approximately 26,000 cubic metres of logs annually (ITTO 2007: 54). Most of the domestic harvest is used as fuelwood or in other low-value applications (USDA Foreign Agricultural Service 2006: 2).

Historically, Taiwan has witnessed rapid exploitation of domestic resources and consequently has a large and established wood processing industry. The country still has about 2,500 licensed wood processing and production facilities (mostly furniture and lumber manufacturers), but many manufacturing sites are small (10 or fewer employees) and use imported timber; many others have moved their production abroad. High labour costs in Taiwan, a lack of domestic resources and low import tariffs have contributed to declining levels of domestic production, and also prevented any considerable foreign investment in this sector. In 2007, Taiwan produced approximately 781,000 cubic metres of plywood, 50,000 cubic metres of veneer and 8,000 cubic metres of sawnwood (ITTO 2007: 54; USDA Foreign Agricultural Service 2006: 14).

Conversely, the availability of cheap logs and low labour costs have been an incentive for Taiwanese investors to buy or establish facilities in mainland China, the Philippines and Vietnam. It has been estimated that one-third of exports from these countries have benefited from Taiwanese investment (USDA Foreign Agricultural Service 2006: 3–4).

Exports

Exports of wood products from Taiwan are small, especially in comparison to the levels of import and domestic consumption (see section 'Taiwan', p. 127). In 2007, Taiwan exported approximately 20,000 cubic metres of roundwood (mostly hardwood), 39,000 cubic metres of sawn timber, 17,000 cubic metres of (hardwood) veneer and 32,000 cubic metres of plywood (ITTO 2007: 55; USDA Foreign Agricultural Service 2006: 18–23).

There are currently no reports about suspicious timber production or exports from Taiwan, although some of the timber imported into Taiwan may come from illicit sources (see section 'Taiwan', p. 127). In relation to the illicit timber trade, there have been some allegations that Taiwan has been used for smuggling protected tree species through the country 'which because of the ambivalence of its territorial status is not a party to CITES' (Birnie & Boyle 2002: 628; Shih 2004). However, more recent reports confirm that Taiwan is monitoring timber imports, including imports of ramin. In August 2004, Taiwanese regulations were amended to fully implement all CITES Appendix III listings.

Papua New Guinea

Production and processing

PNG produces approximately 2.25 million cubic metres of industrial tropical roundwood each year (ITTO 2007: 76). Production of sawn timber, veneer and plywood is extremely limited, due largely to the lack of significant processing facilities in the country. Most production is for export, which almost exclusively involves raw logs without any considerable value-adding (in the form of processing) taking place in PNG (Greenpeace 2002a: 12; ITTO 2007: 76–77). Domestic sawnwood, veneer and plywood production totalled 253,000 cubic metres in 2007. While this figure is small in regional comparison, it is a considerable increase in wood processing and followed the opening of a new major sawmill in PNG's Western Province. It is noteworthy that the same Malaysian company that controls over 50 percent of PNG's logging operations is also the operator of PNG's largest sawmill and the only veneer mill in the country (Greenpeace 2004: 6, 17; Henry & Shallhorn 2006: 27).

Given the concerns about high levels of illegal logging in PNG (see section 'Papua New Guinea: Illegal logging', p. 70) it is to be expected that domestic wood processing in PNG frequently involves logs from suspicious sources. However, the volume of domestic wood processing is so low that no confirmed reports about the level of suspicious production are currently available.

Exports

For several years, PNG has been the second-largest exporter of tropical timber (after Malaysia), exporting over 2 million cubic metres (over 90% of its production) of tropical logs annually since 2003 (ITTO 2007: 6). Exports of other wood products are extremely limited in comparison. About 220,000 cubic metres or 80 to 85 percent of PNG's sawnwood, veneer and timber production are exported (ITTO 2007: 77). Between 33 and 55 percent of all exports are controlled by the same Malaysian company that carries out most of the logging and wood processing (CELCOR & ACF 2006: 8; Greenpeace 2004: 6).

The two main export markets for logs from PNG are China (64%) and Japan (17%) (Greenpeace 2004: 17; ITTO 2007: 33). Those logs that are exported to China are often processed in China and then exported to Western Europe, North America and elsewhere in the form of secondary timber products (Asumadu 2006: 1; Greenpeace 2002a: 13). Sawn timber is for the most part exported to Australia and in smaller numbers to New Zealand (Greenpeace 2002a: 12; Greenpeace 2004: 17).

The alleged high level of illegal logging in PNG has led to suggestions that a considerable part of roundwood exports from PNG involve logs from suspicious sources. There have also been some reports of illegal exports of timber from PNG to Malaysia (CELCOR & ACF 2006: 26). Since 1994, PNG has contracted a Swiss company to monitor all roundwood exports, but allegations about suspicious exports have persisted. Moreover, processed timber exports such as veneer and sawnwood are not monitored (Asumadu 2006: 1).

Other processing countries

Other processing countries include the Pacific Islands and New Zealand, Thailand, Vietnam, Laos, the Philippines, Japan and Australia.

Pacific Islands and New Zealand

Apart from PNG, the other Pacific Islands have comparatively small timber industries. The Solomon Islands is the main timber exporter in the region, with log exports soaring in recent years, although exact figures are not available (Burrow 2006). Fiji produced about 433,000 cubic metres of logs and 95,000 cubic metres of sawnwood in 2007. Currently, the production is exclusively for domestic consumption but the ITTO anticipates exports of some mahogany and pine sawnwood along with other native species from 2007 onwards (ITTO 2007: 32, 74–75). Log production in Vanuatu is estimated to be 30,000 cubic metres annually in addition to 14,000 cubic metres of sawnwood (ITTO 2007: 78). Elsewhere, most of the locally sourced timber is used domestically. There is no significant processing and manufacturing of timber in the region outside PNG.

Accordingly, reports about illegal activities relating to exportation and manufacturing of timber and timber products in the Pacific Islands are limited and often merely anecdotal. There have been occasional reports from the Solomon Islands about unlicensed exports of round logs to Asia and allegations that the Solomon Islands Government is ‘turning a blind eye’ to unauthorised exports as long as duties are paid (East-West Center 2003). An estimated 444,000 cubic metres of timber was exported from the Solomon Islands in 2004 without royalty payments, up from 169,000 cubic metres in 2003. However, during the same time, the revenue from log exports and the contribution of logging to the overall economy fell (Burrow 2006).

New Zealand has a sizeable timber industry, mostly for domestic consumption. In 2007, New Zealand produced approximately 22 million cubic metres of logs and 4.7 million cubic metres of sawnwood. About 25 percent, or 5.8 million cubic metres, of logs were exported from New Zealand in 2007 in addition to 2.2 million cubic metres of sawnwood. Production and exports of veneer and plywood are small (ITTO 2007: 56–57). There are no reports about production or exports involving illegal timber or timber products from New Zealand.

Thailand

Like neighbouring countries, Thailand's forest sector has gradually transformed from a primary source of timber to a net importer and principal producer of timber products. Much of the production continues to involve industrial roundwood, which increased from about 5 million cubic metres in 1999 to 7.8 million in 2003. However, during the same period, production of secondary products such as sawnwood and veneer grew much more rapidly from 147,000 to 2.29 million cubic metres (sawnwood) and from 3,000 to 160,000 cubic metres (veneer), thus exceeding imports of these products. Only a small increase in plywood production to 90,000 cubic metres in 2003 was recorded during this period (ITTO 2006: 189). Furthermore, Thailand's production capacity for woodchips, pulp, paper and particleboard has grown significantly in recent years (Katsigris et al. 2004: 242). Most timber exports from Thailand involve rubberwood and sawnwood, approximately 1.5 million cubic metres in 2002 (ITTO 2006: 189).

Given the growing capacity of Thailand's wood production industry and the declining availability of domestic logs, Thailand is increasingly reliant on timber imports and there are allegations that some of the logs used in Thai sawmills have been felled in or illegally imported from neighbouring Myanmar and, albeit in smaller numbers, from Cambodia and Lao PDR (Asia–Pacific Forestry Commission 2001: 18). It has also been reported that use of Burmese logs in Thailand's timber industry is often facilitated by payment of substantial bribes (EIA & Telapak 2002: 9–10).

Vietnam

The wood processing and export sector in Vietnam has followed similar trends to that of neighbouring Thailand. Over the past decade or so, the country has gradually reduced domestic logging operations and banned export of logs. Today, most domestic wood production is almost exclusively for domestic consumption as fuelwood (FAO 2002b).

However, Vietnam has a significant wood processing industry involving sawmills, pulp, paper, furniture and plywood manufacturing (FAO 2002a). In 2002, Vietnam produced approximately 721,000 cubic metres of sawnwood, 190,000 cubic metres of paper and paperboard, 59,000 cubic metres of wood pulp and 39,000 cubic metres of wood-based

panels (FAO 2002d). The industry has become increasingly reliant on imported timber, especially from Cambodia. Vietnam is also home to a booming wooden outdoor furniture industry, which exports predominantly to China, Korea, Thailand, North America and Europe. Wooden furniture from Vietnam is frequently considerably cheaper than similar products of equal quality from other countries (Global Witness 1999: 2). Other main exports include sawnwood (8,206 cubic metres in 2002), wood-based panels (5,834 cubic metres), and paper and paperboard (3,504 cubic metres) (FAO 2002d).

In the late 1990s, reports emerged alleging that much of the outdoor furniture production in Vietnam involved illegally harvested or illegally imported timber from Cambodia (Asia-Pacific Forestry Commission 2001: 18). A document prepared by the NGO Global Witness established 'links between the forest destruction and conflict in Cambodia [with] furniture manufacturing in Vietnam' (Global Witness 1999: 2). The document reported large quantities of Cambodian logs being brought into Vietnam either by truck or across the Mekong River, despite an export ban instituted in Cambodia in 1996. It was said that logs were initially stored inside Vietnam's military border zone before they were moved to the towns of Pleiku, Kontum and Qui Nhon, where the furniture manufacturing industry was concentrated. In 1998, stockpiles of Cambodian logs in these towns amounted to 260,000 cubic metres (Global Witness 1999: 3–4). Official Vietnamese policy respects the Cambodian export ban, but, conversely, bans use of domestic timber and encourages use of imported logs (Decision No. 65/1998/QD-TTg, 24 March 1998 on the export of wood products, and the import of raw material wood and forest products, cited in FAO 2002a and in Global Witness 1999: 4). There are no more recent reports about these allegations.

Lao People's Democratic Republic

Lao is a small, net exporter of timber and timber products. According to ITTO figures, annual exports from Lao total less than 100,000 cubic metres (ITTO 2006: 45). The exports involve some sawn timber from Laotian sawmills, but also logs and wood products from Cambodia that simply transit through Laos. The main destinations for wood exports from Lao are neighbouring Thailand, China, Vietnam and the Republic of Korea. While the timber exports are small and not well developed in international and regional comparison, they constitute Lao's second most important export after hydropower (Southavilay & Castrén 1999; Tan 2002).

There are, at present, no known reports suggesting any significant use of illegal timber in Lao's wood processing industry. Insofar as illegal exports are concerned, several reports have noted that illegally felled logs from Cambodia are frequently trafficked through Lao PDR to other neighbouring countries (ITTO 2006: 45; Southavilay & Castrén 1999).

Philippines

Logging restrictions introduced in the Philippines in the mid-1990s (see section ‘Other source countries: Philippines’, p. 85) had a rather dramatic effect on its domestic wood production and timber industry (Asia–Pacific Forestry Commission 2001: 14). Over the 30 years from 1974 to 2003, industrial roundwood production in the Philippines fell from 11.2 million cubic metres to 503,000 cubic metres. Simultaneously, production facilities and their capacities declined considerably. In 2003, there were only 31 active regular sawmills in the Philippines (capable of processing 539,000 cubic metres of roundwood) in addition to 50 plywood and veneer manufacturing units (ITTO 2006: 182). There are, at present, no reports of wood production or exports involving illegal timber or timber products.

Japan

Japan's wood production industry is small in comparison to most other countries in the region and is very small relative to Japan's consumption of timber and timber products (see chapter ‘Destinations for illegal timber’). According to recent figures, Japan produced 17,235,000 cubic metres of logs in 2007, and 11,552,000 cubic metres of sawnwood and small quantities of plywood and veneer (ITTO 2007: 54).

Japan's domestic sawnwood production involves use of domestic timber as well as logs from Russia and, in smaller numbers, from Malaysia and New Zealand. There has been some concern that logs from Russia may have been harvested illegally. In response, there has been a shift in Japan to expand use of domestic rather than imported logs (FFPRI 2005: 17). There have equally been allegations that many of the woodchips used in Japan's paper production come from illegal sources (Greenpeace 2002b: 18). Consequently, other parts of Japan's timber industry, especially its plywood and paper industry, have also shifted away from using timber from suspicious sources, in favour of using coniferous wood from ‘safer’ countries as an alternative (GlobalTimber 2006: 1; ITTO 2007: 40, 66).

Most of the wood industry in Japan serves the domestic market (ITTO 2007: 55). Accordingly, export levels are low by regional and international comparison. It has been estimated that about 20 percent of lumber and plywood hardwood exports from Japan are suspicious (Table 22). This reflects Japan's dependence on wood imports that sometimes come from illegal or otherwise suspicious sources.

Table 22: Suspicious wood exports by type of wood, Japan, 2002

	Total exports ('000m³)	Suspicious volume, total ('000m³)	Suspicious volume, % of exports	Suspicious volume, % of production
Softwood				
Roundwood	2	0	n.m.	n.m.
Lumber	n.m.	n.m.	n.m.	n.m.
Plywood	n.m.	n.m.	n.m.	n.m.
Hardwood				
Roundwood	2	0	n.m.	n.m.
Lumber	19	4	20.0	0.9
Plywood	10	2	20.0	0.1

Note: n.m. = not measurable or de minimis

Source: Seneca Creek (2004: 15–16)

Australia

Wood production in Australia consists for the most part of logs, while sawn timber, plywood and veneer production are very small. According to ITTO figures, in 2007 Australia produced 28,763,000 cubic metres of logs, 4,830,000 cubic metres of sawn timber, 147,000 cubic metres of plywood and 5,000 cubic metres of veneer (ITTO 2007: 54). Production is almost exclusively for the domestic market; in 2007 only 553,000 cubic metres of logs and 351,000 cubic metres of sawn timber were exported (ITTO 2007: 55). Australia is almost self-sufficient in paper and paperboard production, and exports approximately A\$1.6m worth of paper, pulp and woodchips (JP Consulting 2005: iii, 5).

In the absence of any reports about illegal logging in Australia, timber production in Australia seems to be relatively free from illicit timber insofar as domestic logs are concerned. For domestic supplies, Australia maintains comprehensive certification and chain-of-custody schemes (Crawford 2006: 8–10). However, some domestic production uses imported timber, frequently from countries with high levels of suspicious exports (see section 'Country profiles: Australia', p. 119). Consequently, there have been some concerns about wood processing in Australia that involves imported secondary and semi-processed products (JP Consulting 2005: 8, 9). In response, there are a number of initiatives aimed at reducing the use of imported logs and replacing them with Australian-grown timber (Australian Government DAFF 2006: 16; JP Consulting 2005: iii). This may, in turn, result in a growth of domestic wood processing facilities and their production. There are, at present, no reports about suspicious exports of timber and timber products from Australia.

Observations

The previous chapters demonstrate the magnitude of the trade in timber and timber products in the Asia–Pacific region, and provide some insight into the scale of wood production, processing and exports. Section ‘Country profiles’, pp. 95–108 shows that Russia, Malaysia, Indonesia and PNG are the greatest producers of roundwood in the region and also export most of their log production. Australia, Japan and China also have significant log production but most of these logs are processed domestically. Sawn timber, plywood and veneer production is more concentrated in China, Indonesia, Malaysia and much of the production in these countries is destined for the export market.

Information about the levels of illegal production and exports and about production and exports involving illegal timber is extremely limited. A major outcome of the analysis in this chapter is the observation that little is known about this aspect of the illegal trade in timber and timber products. Unlike illegal logging, there is limited, if any, reliable data about the true levels of production and export of illegal timber. There are three principal reasons for this knowledge gap.

First, illegal logs and other secondary products involving illegal timber are indistinguishable from legal products. If logs do not carry production stamps and are not accompanied by any documentation, or if these marks are removed and documents forged, it becomes impossible to establish whether they have been obtained or exported illegally. As with other aspects of the timber trade, unless protected species are involved, it is impossible to clearly separate the trade in legal products from the trade involving illegal products. Once logs are processed into sawn timber, veneer, plywood, furniture, pulp, paper or other timber products, it is no longer possible to establish the origin (and sometimes the type) of the material used.

Second, controls and enforcement action in production and export of timber and timber products appear to be the exception rather than the rule. Many countries lack the facilities, expertise and personnel to carry out comprehensive inspections of wood processing plants and of exports. Close monitoring and controls of the industry are costly and often require sophisticated technical equipment. But even those countries that have established some control and tracking mechanisms continue to face allegations of illegal timber production and exports. Law enforcement activities and other inspections interfere greatly with the trade in timber and timber products, and cause delay and add expense to the production and export process. Consequently, some countries lack the will to hamper their timber industry that for many nations in the region is one of the greatest sources of revenue. Not surprisingly, the industry is also often unwilling to support control and enforcement action.

Third, there is a noticeable absence of independent and academic research of this aspect of the timber trade. While much has been written on illegal logging, researchers appear

disinterested in the characteristics and levels of the illegal trade in timber and timber products once trees have been removed from their original place. Perhaps the only comprehensive study examining the illicit production and export of wood products is the report that Seneca Creek published in 2004, although their analysis was limited to China, Russia, Japan, Indonesia and Malaysia.

The lack of more comprehensive analysis of this aspect of the timber trade makes it difficult to generate concise observations or make generalisations about the patterns of illegal timber production and exports in the Asia–Pacific region. However, a number of issues crystallise from the analysis in the previous chapters.

Some countries in the region harvest great volumes of trees but have no significant wood processing industries. This is the case particularly in PNG and Russia. Other countries, in contrast, have great wood processing capacities but no considerable domestic log production. Countries like China, Thailand and Vietnam for instance are home to massive wood processing plants and rely heavily on imported timber, especially if domestic resources are limited or if their use is prohibited. The analysis in this chapter has shown that those countries with a great discrepancy between processing capacity and available timber place great pressure on log exporting nations, and are also particularly vulnerable to use of illegal timber to fill otherwise unused production capacities. It has been shown that logging bans introduced in some countries do not eliminate the illegal trade but, for the most part, simply transfer the problem elsewhere, especially if the demand for timber remains unchanged or, as will be shown in the next chapter, increases further.

Moreover, those countries that have large timber resources but limited processing facilities, such as Russia and PNG, also seem to be particularly prone to illegal and unsustainable logging. These countries largely miss out on any revenue associated with timber processing and thus become more dependent on money generated by sale and export of logs, which may contribute to even higher levels of unsustainable and illegal logging.

Lastly, it is particularly concerning to see that the countries with the greatest production of logs and/or secondary products also often have the highest levels of suspicious timber production and exports. This emphasises the magnitude of the illegal market both in volume and value. It is also noteworthy that the illicit trade cannot be explored in isolation of the legal trade in timber and timber products. From the available information, it appears that the supply, production and processing of illegal timber is driven by the same commercial enterprises that trade in legal timber. In particular, there is no evidence to show that criminal organisations carry out any significant part of the illegal trade in timber and timber products.

Destinations for illegal timber

This chapter explores the final stages of the illegal trade in timber and timber products: importation and consumption of wood and wood-based products in the destination countries. Some of the patterns and the magnitude of illicit wood importation in the region are set out, the levels and characteristics of demand for timber and timber products are discussed, and the importation and consumption of illegal timber in a range of countries in the Asia–Pacific region are analysed.

Importation

The importation of timber and timber products into destination countries, like the exportation of illegal timber from source countries, may be illegal because of violations of customs and other border control requirements. In particular, illegality may arise because the importation is prohibited if it involves protected species; if an importation ban from that source is in place; because of a failure to declare the imports or otherwise comply with documentation requirements; because of the use of false declarations and papers; or because of excessive importation.

In 2007, the ITTO estimated that log imports into the Asia–Pacific region totalled approximately 50 million cubic metres, in addition to about 22 million cubic metres of sawnwood, 8 million cubic metres of plywood and 600,000 cubic metres of veneer (ITTO 2007: 54, 74). Seneca Creek has suggested that levels of suspicious wood imports are higher for softwood than for hardwood. It was also found that 31.4 percent of all plywood imports worldwide and about 15 percent of all roundwood imports might be illegal (Table 23).

Suspicious wood imports appear to be particularly high in China, which is also one of the greatest consumers of timber and timber products in the world. Hardwood imports into Japan and Indonesia also show high levels of suspicious imports (Table 23 and section ‘Country profiles’, pp. 119–133).

It is difficult to find accurate figures about levels of illegal timber importation principally because many countries do not collect information or data about illegal imports, and different countries have different laws banning the importation of illegally sourced wood. There is enormous inconsistency in the way countries regulate and control this trade, ranging from complete import bans in some countries to virtually open borders with no monitoring or enforcement measures in others.

Table 23: Suspicious wood imports by type of wood and destination country, 2002

	World total	China	Indonesia	Japan	Malaysia	Russia
Softwood						
Roundwood						
Imports ('000m ³)	78,371	16,800	24	10,270	12	200
Suspicious (%)	3.2	31.5	0.0	6.5	0.0	12.5
Lumber						
Imports ('000m ³)	91,678	1,189	107	7,722	12	11
Suspicious (%)	2.4	17.0	5.0	4.0	5.0	10.0
Plywood						
Imports ('000m ³)	8,876	155	n.m.	308	0	5
Suspicious (%)	4.7	55.0	n.m.	10.0	0.0	0.0
Hardwood						
Roundwood						
Imports ('000m ³)	47,662	8,550	2,000	2,400	2,530	20
Suspicious (%)	14.8	30.6	55.7	5.5	12.4	14.8
Lumber						
Imports ('000m ³)	33,375	4,210	9,701	862	926	5
Suspicious (%)	10.8	32.0	10.0	32.0	5.0	10.0
Plywood						
Imports ('000m ³)	15,442	480	3	4,803	5	26
Suspicious (%)	31.4	56.0	n.m.	38.0	5.0	2.0

Note: n.m. = not measurable or de minimis

Source: Seneca Creek (2004: 15–16)

Furthermore, there is wide diversity in the methods used (if any) by importers, customs and law enforcement agencies to determine the legality of imports. For example, a survey of certification and determination processes conducted in Australia in 2006 found that 21 percent of importers do not verify the legality of their supplies, 27 percent simply rely on established business relationships and 22 percent require certification. One percent of importers surveyed carry out DNA testing, four percent use agents to monitor their supplies, and three percent use the CITES list to determine the species of imports (rather than their source) (Timber Development Association of New South Wales 2006: 17–18).

Demand

One of the most important aspects of the illegal trade in timber and timber products is the demand for inexpensive supplies that fuels this illicit trade. While many of the criminal aspects of the illegal timber trade are perpetrated in source countries, these offences would

not occur but for the continuing demand for cheap timber and timber products in consumer countries. Other authors, too, remarked that ‘rampant illegal logging of most of the world’s remaining tropical forests is a direct result of the massive demand for cheap and plentiful tropical timber in the consuming markets’ (Salo 2003: 131).

The ITTO estimates that total domestic consumption in key consumer countries in the Asia–Pacific region (including Australia, China and its Special Administrative regions Hong Kong and Macau, Taiwan, Japan, Republic of Korea, Nepal and New Zealand) totalled almost 170 million cubic metres of logs in 2007, a considerable increase from 143 million cubic metres in 2002. In addition, these countries combined consumed about 64 million cubic metres of sawn timber, 24.6 million cubic metres of plywood, and 4.5 million cubic metres of veneer (ITTO 2007: 55).

Research that Seneca Creek conducted in 2002 revealed that the levels of suspicious wood consumption are particularly high in some of the key consumer countries, especially China (which is largely dependent on imported timber), and Russia (which mostly consumes timber sourced internally) (Table 24). Since the publication of this study, China has become the greatest consumer of timber and timber products in the region, consuming well over 120 million cubic metres of timber and timber products in 2007 (ITTO 2007: 55), and it is widely anticipated that China will soon emerge as the greatest timber consumer worldwide (see section ‘Country profiles: China’, pp. 124–128 for further analysis).

Table 24: Suspicious domestic consumption by type of wood and destination country, 2002

	World total	China	Indonesia	Japan	Malaysia	Russia
Softwood						
Roundwood						
Consumption ('000m ³)	999,883	54,696	228	23,578	18	67,550
Suspicious (%)	3.2	31.5	0.0	6.5	0.0	12.5
Hardwood						
Roundwood						
Consumption ('000m ³)	660,987	28,059	52,200	8,798	18,420	32,074
Suspicious (%)	14.8	30.6	55.7	5.5	12.4	14.8

Source: Seneca Creek (2004: 15–16)

Despite the high levels of timber consumption it is, in comparison to other aspects of the trade in illegal timber and timber products, perhaps the least researched and least regulated aspect of the industry. Few, if any, countries prohibit purchasing of timber products that come from an illegal source or involve protected species. There are also generally no penalties for possession of illegal timber and no requirements to hold permits to obtain or

purchase suspicious timber products (unless protected species are involved). For the most part, consumers of illegal timber products are immune from any penalties, and from prosecutions and seizures.

Country profiles

This section explores more closely the patterns of consumption in the key destination countries of Australia, China, Taiwan and Japan. The major importing countries of Thailand and the Republic of Korea and the other major consumer countries of Indonesia, Malaysia and New Zealand are also examined.

Australia

Importation

Australia is a major importer of timber and timber products. Although it has a considerable domestic timber industry, domestic production does not meet demand and Australia is dependent on imported timber from other countries in the region and elsewhere. Moreover, many imported timber products are not manufactured in Australia and they have to be introduced from overseas (JP Consulting 2005: 5). It is widely anticipated that demand will continue at the same level or may rise, thus imports of timber and timber products are equally expected to increase (Australian Government DAFF 2006: 7; JP Consulting 2005: 16–17).

The bulk of timber imports includes paper products (about A\$2,387m) and wooden furniture (about A\$1,000m). Furthermore, in 2007 Australia imported 622,000 cubic metres of sawn timber, 222,000 cubic metres of plywood and 29,000 cubic metres of veneer. The levels of import have been relatively steady in recent years (ITTO 2007: 54; JP Consulting 2005: 5, 6–12) (Table 25). The total value of all timber and timber product imports into Australia is estimated to be approximately A\$5b (JP Consulting 2005: 6–12;) (Table 25). Imports of raw logs into Australia are limited (ITTO 2007: 54).

The level and modus operandi of illegal importation of timber and timber products into Australia have thus far attracted little research by government agencies and academic scholars. Consequently, accurate data and estimates about the extent of the problem in Australia are extremely limited, and it is impossible to identify any trends and developments. In 2005, the Department of Agriculture, Fisheries and Forestry (DAFF) commissioned a consultancy firm to assess the current and future 'impact on the Australian forest product imports of the overseas trade in illegal or suspect forest products' (JP Consulting 2005: ii). This report estimated that approximately nine percent or A\$452m of all timber and timber products imported into Australia come from an illicit source (Table 25).

Table 25: Licit and illicit timber imports in Australia by type, 2003–04

Type of product	Total imports 2003–04		Import from illicit source (estimates)		
	Volume ('000m ³)	Value (A\$'000)	Volume ('000m ³)	Value (A\$'000)	Percentage of total
Sawntimber	871	501,900	72	50,000	8
Wood-based panels ^a	320	112,800	37	23,000	11
Plywood	176	112,800	–	–	19
Veneer	–	–	–	–	16
Wood pulp	377	236,000	–	–	–
Paper products	–	2,387,000	–	–	–
Printing + writing paper	–	–	–	56,000	4
Tissues	–	–	–	11,000	11
Packaging	–	–	–	3,300	1
Wooden furniture ^p	–	1,000,000	–	162,000	22
Miscellaneous (incl. doors, mouldings, etc.)	–	584,000	112	83,000	14
Total	–	4,893,000	–	452,000	9

a: Wood-based panels include reconstituted and solid wood panel products. The reconstituted panels include particleboard, medium-density fibreboard (MDF) and others such as fibreboard and hardboard. The solid wood group includes veneers and plywood.

b: Based on 2002–03 imports

Source: JP Consulting (2005: 6–12)

The generally held view is that importation of timber and timber products from illicit sources is particularly high for wooden furniture (JP Consulting 2005: 18). Estimates suggest that in 2003–04 approximately 22 percent or A\$162m of all wooden furniture imported into Australia came from an illicit source. High percentages of imported plywood (19%), veneer (16%), other wood-based panels (11%), tissue paper (11%), and miscellaneous imports such as doors and mouldings (14%) also come from illicit sources, while levels of illegal imports are lower for sawn timber (4%), printing and writing paper (4%), and packaging (1%) (JP Consulting 2005: 6–12) (Table 25).

Given the difficulties of tracing most imports and the lack of any documentation and certification, information about the sources of the illicit timber and timber products is limited. It is often equally difficult to establish the routes along which illegal timber is traded and identify the recipients and facilitators in Australia. From available information, it appears that most importers in Australia obtain their supply from overseas in good faith or may occasionally be careless about the source and legitimacy of their supplies. There are few known examples in which importers deliberately brought illegal timber into the country, knowing that the product was illicit. For example, in 2004, reports published by Greenpeace linked a specific timber import company in Brisbane with illegal logging in PNG stating that

'[t]his company sells illegal and destructively logged timber to many small companies and individuals in Australia. This timber is then turned into mouldings and other building components' (Greenpeace 2004: 17).

Evidently, products that have been processed abroad and are subsequently imported into Australia have higher levels of illegal or suspicious volumes compared with products processed domestically (JP Consulting 2005: 10). The limited research available largely attributes a high percentage of suspicious products to imports from Indonesia, especially in the case of wooden furniture and hardwood plywood imports (JP Consulting 2005: 7). Imported tissue paper also frequently comes from Indonesia and potentially includes timber from illicit sources (JP Consulting 2005: 10). Products classified here as 'miscellaneous' involve a range of items including doors, mouldings, parquetry and engineered flooring panels, carpenters' pieces, and cork and cooperage for the wine industry. Most of these products are of high value and frequently based on rare tropical timber species, especially ramin. Until ramin was listed in the CITES Appendix, it was the major import for mouldings and handles in Australia. While trade in ramin has decreased considerably, illegal imports from Indonesia in the form of, for example, mouldings remain of great concern (JP Consulting 2005: 10).

Some paper products, too, are imported into Australia from Indonesia, which is seen as the main source of potentially illegal supplies (JP Consulting 2005: 9). The majority of paper products, in particular in the form of printing and writing paper, is imported into Australia from Finland using logs of Russian origin. While logging in Finland is tightly controlled, imports from Russia into Finland can frequently involve logs from illicit sources (JP Consulting 2005: 9; see section 'Country profiles: Russia', pp. 65–70). Softwood from illegal sources in Russia and China may also be used to manufacture packaging products imported into Australia. These products are made largely from recycled paper and some softwood pulp. Tropical hardwoods are generally not used in the production, which reduces the likelihood that imports from illicit sources are involved (JP Consulting 2005: 10). Small volumes of tissue paper are imported into Australia from Taiwan and, depending on the source, may have illegally sourced logs in the feedstock (JP Consulting 2005: 10). Malaysia is seen as a potential source of illicit imports of mouldings and handles (JP Consulting 2005: 10).

Legislation relevant to importation of timber and timber products in Australia can be found in the *Customs Act 1901* (Cth) and in the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). The *Customs Act 1901* (Cth) sets out the general framework for imports into the country; it does not contain specific provisions for timber and timber products. The Customs (Prohibited Imports) Regulations 1956 (Cth) contain some specific rules applicable to certain types of imported goods. In relation to timber, section 4Q of the Regulations prohibits importation of 'round logs and timber products originating in Liberia' unless prior permission has been granted. This provision only relates to so-called 'conflict timber' from Liberia (Brack, Gray & Hayman 2002: para 2.19; Thomson & Kanaan n.d. 1–32); it does not extend to imports from other countries or to specific timber species.

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) contains detailed provisions for imports involving protected timber species. The Act sets out procedures for the domestic operation of the CITES system, including the requirements for imports of CITES specimens (sections 303CD–303CK, 303FA–303FI). The Act also implements the obligations under the World Heritage Convention and the Biodiversity Convention into domestic law and includes a range of provisions relating to National Heritage places.

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) contains specific offences relating to importation of protected species; under section 303CD it is an offence to import any of the species listed in the CITES annexes into Australia unless a permit has been issued for the importation (sections 303CD(2), 303CG, 303CB, 303GC), or the import is otherwise authorised (section 303CD(3)–(6)). The offence carries a penalty of 10 years imprisonment, 1,000 penalty units (A\$110,000) or both (section 303CD). An additional offence for importation of certain ‘regulated live specimen’ (which also includes plants, section 303EA) is set out in section 303EK of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). This offence applies to protected species that are listed in other statutory instruments and are not already covered in the CITES annexes (section 303EB(5)) (Lipman 2002: 52–53).

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) contains no specific offences that outlaw imports of timber and timber products that come from protected areas. The Act does contain general offences in sections 18A and 19A criminalising conduct that ‘results or will result in’ (section 18A(1)) or ‘is likely to have’ (section 18A(2)) ‘a significant impact on (i) a listed threatened species, or (ii) a listed threatened ecological community’. A further offence for actions causing (and likely to cause) ‘significant impact on the world heritage value of a declared World Heritage property’ can be found in section 15A of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). The Act contains no specific offences for forging import permits or for obtaining these permits by way of fraud or bribery. In these instances, liability for the general offences of forging Commonwealth documents and bribing Commonwealth officers under the Criminal Code (Cth) may arise.

In addition to statutory requirements under Australian law, some importers of timber and timber products have adopted industry policies and internal regulations to prevent importation, use and retail sale of products that may originate from illicit sources. A 2006 survey of Australia’s timber importing industry found that nearly three-quarters of the companies surveyed had some policy on illegal logging; 30 percent had a publicised policy, a further 30 percent had a written but unpublicised policy, 14 percent had an unwritten policy and 26 percent were found to have no policy regarding illegal timber imports (Timber Development Association of NSW 2006: 12). Furthermore, it was noted that most of these policies had been ‘instigated by a market force, namely the customer stipulating that they required demonstration that the supplied product is from a lawful source’ (Timber Development Association of NSW 2006: 14). Those importers found to have no policy

about illegal timber imports argued they had ‘no need to write or publicise a policy’ and instead preferred ‘to visit suppliers at their mills and develop business relationships and trust’ (Timber Development Association of NSW 2006: 14).

There is, to date, no accepted industry-wide policy and no uniform standard for importation of timber and timber products into Australia. The 2005 review of the Australian timber and timber product market found that the industry, including wholesalers, hardware stores and even industry associations such as the Australian Timber Importers Federation, lacked any policies and procedures to detect and restrict timber imports from illegal or suspicious sources (JP Consulting 2005: 13). The existing policies in some countries relating to exports also differ greatly and procurement of timber from overseas is treated inconsistently (Timber Development Association of NSW 2006: 16). However, more recent surveys found that most parts of the industry accept that there is a need for a consistent approach across the industry to protect legitimate operators and isolate those that import timber and timber products from illicit sources (Timber Development Association of NSW 2006: 16). Most importers in Australia recognise that ‘[t]here is evidence that the market is beginning to demand that timber be verified as originating from a lawful source and that environmental issues are being considered in specification and purchasing policies’ (Timber Development Association of NSW 2006: 29). The survey found that ‘older companies saw the drive for legal timber as basic business practice and necessary for the long-term perpetuation of business, whereas companies that have been around for a shorter period perceived that sustainability issues were more a market necessity’ (Timber Development Association of NSW 2006: 10).

Consumption

Australia is, after China and Japan, the third-biggest consumer of timber and timber products in the Asia–Pacific region. The ITTO projects that in 2007, Australia consumed nearly 28 million cubic metres of logs, 5 million cubic metres of sawn timber, 363,000 cubic metres of plywood and 31,000 cubic metres of veneer (ITTO 2007: 55). No figures are available that identify the levels of illegal or suspicious timber consumed in Australia. Earlier analysis in this study suggests that illegal timber is more frequently found in imported timber than in timber that has been produced in Australia.

The high level of consumption of timber and timber-based products reflects the high demand for timber in Australia. It is this demand, especially for cheap timber supplies, that fuels the trade in illegal timber and translates into higher levels of illegal logging abroad. However, consumption of illegal timber is not criminalised and largely not regulated in Australia. There are, at present, no offences criminalising possession or purchase of illegal timber. Only a very small segment of the market has an interest in particular high-value timber species, such as ramin. In some instances, liability for possessing a protected species or a prohibited import may arise for customers of these products.

People's Republic of China

Importation

To offset the gap created by growing demand and reduced domestic supply, China has to import most of its timber for domestic consumption and also for further export to third countries. Today, China is the world's biggest importer of roundwood and pulp, and is the second-biggest importer of other wood products (ITTO 2007: 5; Stark & Cheung 2006: 20; White et al. 2006: 4). Approximately 121 million cubic metres of timber was imported in 2004, four times the volume of 1993 (Stark & Cheung 2006: 17; Zhu, Taylor & Guoqiang 2004: 16). According to ITTO projections, in 2007 China imported about 33 million cubic metres of logs (up from 31 million cubic metres in 2006) and 6.5 million cubic metres of sawn timber (ITTO 2007: 5, 7, 54). Most imports into China are in the form of unprocessed roundwood, sawnwood, and pulp and paper products. Further processing is usually carried out in China. Accordingly, imports of plywood (393,000 cubic metres) and veneer (122,000 cubic metres in 2007) are very small in comparison (ITTO 2007: 54). In 2007, the ITTO noted that 'China's tropical plywood imports continue declining apace with the boom in its own plywood industry'; imports of tropical plywood dropped by 27.2 percent in 2005 and by a further 14.6 percent in 2006 (ITTO 2007: 12). China's main log suppliers, especially Russia and PNG, have very limited processing capacities and the Chinese Government is actively promoting development of domestic processing facilities for imported wood by reducing tariffs on imported unprocessed and semi-processed timber (Katsigris et al. 2004: 244; Stark & Cheung 2006: 21; see also section 'People's Republic of China: Policies and legislation', p. 77).

Among the main suppliers of timber to China are Russia, Indonesia, Malaysia and, increasingly, PNG. Russia, Vietnam and Myanmar have preferential bilateral trade and import agreements with China, thus facilitating cross-border trade and further reducing taxes and tariffs (Zhu, Taylor & Guoqiang 2004: 10). Other source countries for logs include Gabon and the Republic of Congo (ITTO 2007: 5). Paper products are mostly imported from the United States (about 26%) with smaller imports from Canada and Japan (Stark & Cheung 2006: 23).

Russia is the single most important supplier of timber to China; approximately 65 percent of all log imports and 43 percent of other imported timber products enter China from Russia (Stark & Cheung 2006: 22). Malaysia is the second most important source of logs and timber products imported into China, constituting approximately 11 percent of all imports. However, it has been said that many Malaysian imports are declared incorrectly and frequently originate from Indonesia (Stark & Cheung 2006: 22; see also section 'Indonesia: Exports', p. 96). Currently, the third-biggest supplier of roundwood to China is PNG, supplying about five percent of China's log imports, although it is widely anticipated that log imports from PNG will exceed imports from Malaysia in the coming years (Stark & Cheung 2006: 22; see also section 'Papua New Guinea: Exports', p. 107).

Grave concerns have been expressed about the origin of much of the timber imported into China; it is said that much of the imported hardwood may be illegal because it was logged in natural forests, outside concession boundaries, or was logged in excess of existing licences (Zhu, Taylor & Guoqiang 2004: 22). It has been estimated that approximately one-third of roundwood imports into China may come from an illegal source and 32 percent of hardwood lumber imports are also considered suspicious. While plywood imports into China are smaller in volume, it was found that 55–56 percent of all plywood imports into China may be suspicious (Table 26).

Table 26: Suspicious wood imports by type of wood, China, 2002

	Total imports (‘000m³)	Suspicious volume, % of imports
Softwood		
Roundwood	16,800	31.5
Lumber	1,189	17.0
Plywood	155	55.0
Hardwood		
Roundwood	8,550	30.6
Lumber	4,210	32.0
Plywood	480	56.0

Source: Seneca Creek (2004: 15–16)

Russian imports are seen as particularly suspicious and are said to involve approximately 40 percent of illegally sourced timber (Stark & Cheung 2006: 29; see also section ‘Russia: Illegal logging’, p. 66). Indonesia is another source of many illegal logs imported into China. Indonesian roundwood is usually shipped illegally to Malaysia by large organised networks, re-tagged as Malaysian timber and shipped to third countries, especially China. Import records of China’s customs authority show great discrepancies between the quantities of timber imported from Indonesia and Malaysia and the quantities shown on export records in those countries. For example, in 2004, investigations found that 59 percent of log imports from Indonesia and Malaysia were of unidentified origin (Stark & Cheung 2006: 38, 40–41). The port of Zhanjiang, south of Shanghai, has been flagged as the main port of entry for illegal hardwood imports from South–East Asia (Stark & Cheung 2006: 43).

Given that so much of the imported timber comes from illegal sources, observers believe that the current levels and avenues of timber imports into China cannot be sustained for long; the forest areas and timber resources of China’s main supplying countries are shrinking. One result of this development could be that prices for timber and timber products may increase substantially (Zhu, Taylor & Guoqiang 2004: 22). Conversely, the expected growth of timber demand in China may result in timber being imported from new sources; New Zealand and Argentina have been identified as emerging suppliers, especially

of pulpwood (Zhu, Taylor & Guoqiang 2004: 29). It may also mean greater imports from illegal sources and through new illegal avenues, thus further contributing to illegal logging and deforestation in the region and beyond. The growing levels of imports from PNG and the Solomon Islands seem to confirm this trend.

Consumption

China has a massive and rapidly growing demand for timber and timber products. Attempts in the 1980s and 1990s to slow the domestic demand for timber and timber products by promoting and requiring use of non-wood substitutes failed (Zhu, Taylor & Guoqiang 2004: 7). It has been estimated that China's total domestic consumption increased from 138 million cubic metres in 2003 to 174 cubic metres in 2004 (Stark & Cheung 2006: 27; Zhu, Taylor & Guoqiang 2004: 15–16). The ITTO predicts that consumption of roundwood alone will increase to about 89 million cubic metres in 2007 in addition to 31.5 million cubic metres of sawnwood, 12.3 million cubic metres of plywood and 3 million cubic metres of veneer (ITTO 2007: 55). Much of the consumption involves high-value tropical timber. China is the world's largest consumer of tropical veneer and tropical plywood, the third-largest consumer of tropical sawnwood, and the fifth-largest consumer of tropical logs (ITTO 2007: 5, 7).

The ever-increasing consumption of timber and timber products in China is explained by its booming economy, which is growing at a rapid pace. Simultaneously, China's middle class is growing in number and wealth, creating an insatiable demand for all types of timber products. In particular, China's rapidly expanding residential housing sector needs large amounts of timber as a building material and for flooring, furniture and interior decoration. Most of the timber used in this sector involves high quality tropical hardwood from species such as merbau, jatoba and teak, and also plywood made from bintangor, meranti and okoume (Stark & Cheung 2006: 18). These species have been identified as particularly vulnerable to illegal logging and they usually originate from countries with high levels of suspicious timber exports. China also uses vast amounts of timber for infrastructure projects, as fuelwood, and in the production of pulpwood and paper (Zhu, Taylor & Guoqiang 2004: 2, 16, 17). It has been estimated that approximately one-third of the roundwood consumed in China comes from illegal sources (Table 27).

Table 27: Suspicious wood consumption by type of wood, China, 2002

	Total consumption (^{'000m³})	Suspicious volume, % of consumption
Softwood		
Roundwood	54,696	31.5
Hardwood		
Roundwood	28,059	30.6

Source: Seneca Creek (2004: 15–16)

With China's economy growing at a rapid pace, it is widely anticipated that demand for timber will continue to grow. A recent report suggested that wood consumption would rise to 171 million cubic metres of industrial timber by 2010 in addition to 69 million cubic metres of pulp and paper (Zhu, Taylor & Guoqiang 2004: 24). The growing demand is expected to place further pressure on supply countries as well as on China's domestic forest resources, which are only slowly recovering from decades of excessive exploitation (White et al. 2006: 8–9; see also section 'People's Republic of China: Timber resources', p. 75). Many see China's massive timber consumption as the single greatest threat to the forest resources in the Asia-Pacific and as one of the main reasons for the high levels of illegal logging in many countries in the region (Katsigris et al. 2004: 237; White et al. 2006: 14–15; Zhu, Taylor & Guoqiang 2004: 29).

Taiwan

Importation

Taiwan's market for timber and timber products relies almost exclusively on imports. About two-thirds of imports arrive in the form of low-value processed timber, but Taiwan is also one of the largest importers of tropical logs (ITTO 2007: 5; USDA Foreign Agricultural Service 2006: 5). In 2007, Taiwan is expected to import 1,637,000 cubic metres of sawnwood, 1,031,000 cubic metres of plywood, 73,000 cubic metres of veneer and 1,100,000 cubic metres of logs (ITTO 2007: 54). After Japan, the United States and Korea, Taiwan is the fourth-largest importer of tropical plywood in the world (ITTO 2007: 12).

The high levels of imports into Taiwan, especially in the form of processed timber, are explained by the low tariffs imposed on imports (USDA Foreign Agricultural Service 2006: 16–17) and the fact that many processing plants in the source countries, especially China, the Philippines, Vietnam and in Sabah, Malaysia, are owned by Taiwanese companies. The high levels of imports from these countries have also led to concerns about suspicious imports into Taiwan as the production process is not monitored by Taiwanese authorities (see also section 'Taiwan', p. 106).

Consumption

Taiwan is a major consumer of timber and timber products in the region. The ITTO estimates that in 2007, Taiwan will consume approximately 1.8 million cubic metres of plywood, 1.6 million cubic metres of sawnwood, 1.1 million cubic metres of logs and 106,000 cubic metres of veneer (ITTO 2007: 55). In recent years, driven by economic growth, domestic consumption of sawnwood and plywood has increased considerably; since 2001, consumption grew by about 10–20 percent annually (ITTO 2007: 55; USDA Foreign Agricultural Service 2006: 4). Consumer spending on timber furniture has also

increased greatly in recent years (USDA Foreign Agricultural Service 2006: 14). Meanwhile, consumption of tropical veneer has declined sharply during the same period (ITTO 2007: 10).

With most of the timber products consumed in Taiwan coming from abroad, there is some concern that the high levels of consumption fuel the demand for cheap and often illegal timber. It has been observed that retail sales in Taiwan are largely determined by price and that the government is presently not promoting certification or labelling of timber from legal and sustainable sources (USDA Foreign Agricultural Service 2006: 10).

Japan

Importation

Japan is one of the main destinations for timber and timber products in the Asia-Pacific and is, after China, also the greatest consumer in the region. Approximately one-third of the timber consumed in Japan is imported, including imports of about 8 million cubic metres of logs, 7.5 million cubic metres of sawn timber, 4.6 million cubic metres of plywood and 287,000 cubic metres of veneer (ITTO 2007: 54). Japan is the third-largest tropical log importer in the world, after China and India (ITTO 2007: 5).

Japan relies heavily on log imports from Russia and from tropical countries such as Malaysia, Indonesia and PNG. Much of these imports, especially plywood, involve tropical timber species such as meranti and keruing. Japan is the world's largest importer of tropical plywood, and until 2005, Japan was also the world's greatest consumer of tropical plywood (ITTO 2007: 5, 11, 12). Consequently, in the late 1990s and early 2000s, observers were expressing great concern about the high levels of suspicious timber being imported into Japan (Dauvergne 1997: 1–182; FFPRI 2005: 17–18; Greenpeace 2002b: 21–22; Seneca Creek 2004: 144). The American Forest & Paper Association estimated that about 17 percent of all timber imported into Japan had been logged illegally (FFPRI 2005: 3; GlobalTimber 2006: 12). In its 2004 report, Seneca Creek suggested that up to 38 percent of all hardwood plywood imports and 32 percent of hardwood lumber imports might be illegal (Seneca Creek 2004: 144–145) (Table 28). In 2002 Greenpeace estimated that at least 41.5 percent of domestic plywood supplies in Japan were from illegally logged timber (FFPRI 2005: 9; Greenpeace 2002b: 1).

Table 28: Suspicious wood import and domestic consumption by type of wood, Japan, 2002

	Total imports (‘000m ³)	Suspicious volume, % of imports	Total consumption (‘000m ³)
Softwood			
Roundwood	10, 270	6.5	23,578
Lumber	7,722	4.0	–
Plywood	308	10.0	–
Hardwood			
Roundwood	2,400	5.5	8,798
Lumber	862	32.0	–
Plywood	4,803	38.0	–

Source: Seneca Creek (2004: 15–16)

In response to these concerns, Japan introduced a range of measures to detect illegal imports and reduce imports from suspicious sources. Specifically, Japan is gradually increasing domestic timber production and also shifting importation to more secure sources or other types of timber. In particular, there has been a shift away from tropical hardwood imports from countries like PNG towards greater use of softwood of domestic origin and from Russia. As a result, timber imports, especially in the form of logs, have dropped considerably since 2004 (ITTO 2007: 54). Japan has also introduced comprehensive procedures to detect importation of protected species and implement the ramin CITES listing (FFPRI 2005: 14; Seneca Creek 2004:146; EIA & Telapak 2004: 5). Furthermore, sawnwood imports are increasingly coming from North America, Europe and New Zealand where the levels of illegal logging are very low (FFPRI 2005: 17).

Consumption

After China, Japan is the second-largest consumer of timber in the region. The ITTO estimates that timber consumption in 2007 involves approximately 25 million cubic metres of logs, 19 million cubic metres of sawnwood, 8 million cubic metres of plywood and 141,000 cubic metres of veneer (ITTO 2007: 55). The changing levels and patterns of timber imports into Japan have also had an impact on domestic consumption. In particular, there has been a dramatic decline in consumption of tropical plywood since 2004. It is said that demand by the construction industry for these materials has fallen (due to limited economic growth), but also that tropical plywood is increasingly replaced by plywood from coniferous timber species (ITTO 2007: 11, 12, 40). This trend may gradually reduce the amount of illegal timber being sold and consumed in Japan. However, concerns remain over the high level of softwood consumed in Japan, which frequently involves Russian roundwood of suspicious origin (Greenpeace 2002b: 16).

Other major importing countries

Thailand

Thailand's role in the trade of timber and timber products has shifted over the past two decades from being a source country to being a major destination country. Today, Thailand is a net importer of primary wood products and an important destination for many timber imports in the Asia–Pacific region, especially for tropical logs from Malaysia and Myanmar (ITTO 2006: 189; ITTO 2007: 6). Most imports comprise sawnwood, approximately 2,243,000 cubic metres in 2007 (ITTO 2007: 76). Most of the sawnwood consists of tropical species from Malaysia, which are used in Thailand's rapidly growing furniture and secondary processing industries (ITTO 2007: 7). Imports of roundwood (751,000 cubic metres) and plywood (143,000 cubic metres) are considerably smaller (ITTO 2007: 76).

There is little information about suspicious volumes of timber imported into Thailand, but concerns have been expressed over logs entering from Laos and Myanmar. Some reports suggest that these logs may have been felled illegally in Myanmar or may have been logged illegally in Thailand then 'laundered' through Myanmar by falsely declaring them as Burmese logs (EIA & Telapak 2002: 9–10).

Patterns of consumption of timber and timber products in Thailand have undergone a remarkable shift over the past few years. Consumption of logs has decreased by one-third since 2002 to about 6 million cubic metres in 2007. During the same period, consumption of sawnwood has grown considerably to almost 5 million cubic metres in 2007; Thailand is the world's third-largest consumer of tropical sawnwood, after Brazil and India (ITTO 2007: 7). Consumption of plywood and veneer currently stands at 333,000 cubic metres and 217,000 cubic metres respectively (ITTO 2007: 77).

Republic of Korea

The Republic of Korea (South Korea) is a major importer and principal timber consumer in the region. After Japan and the United States, Korea is the world's third-largest importer of tropical plywood (ITTO 2007: 12). The Republic of Korea is also the third-largest importer of tropical veneer in the world, although the levels of imports have fallen considerably in recent years (ITTO 2007: 9–10). In 2007, the Republic of Korea imported almost 7 million cubic metres of logs (all timber), 1.1 million cubic metres of plywood, 882,000 cubic metres of sawnwood and 85,000 cubic metres of veneer (ITTO 2007: 56).

Information about suspicious volumes and other aspects of the illegal timber trade in the Republic of Korea is extremely limited and often anecdotal. Like many consumer countries in the region, a considerable proportion of timber imports into Korea come from countries with high levels of illegal logging, such as Indonesia and Russia, or involve secondary products

from countries where wood processing frequently involves illegal timber, such as China (Zhu, Taylor & Guoqiang 2004: 18–19). The ITTO projects that in 2007 Korea will consume almost 10 million cubic metres of logs, 3.3 million cubic metres of sawn timber, 1.6 million cubic metres of plywood and 0.5 million cubic metres of veneer (ITTO 2007: 57).

Other major consumer countries

Indonesia

The ban imposed on log exports from Indonesia has resulted in greater domestic consumption of logs; according to ITTO statistics, nearly all logs produced in Indonesia are also consumed in the country, almost 28 million cubic metres in 2007 (ITTO 2007: 5, 77), making Indonesia one of the greatest log consumers in the region, especially of tropical timber. Much of the domestic use of logs is for production of sawnwood and, in particular, for plywood which is then exported to other countries (ITTO 2007: 77; Speechly 2003: 219–220).

Illegal timber is said to be particularly common among imported hardwood logs. In its 2004 report, Seneca Creek estimated that over 50 percent (over 1 million cubic metres) of hardwood logs imported into Indonesia are suspicious. Approximately the same volume of hardwood lumber, or 10 percent of all imports, is considered suspicious (Table 29).

Table 29: Suspicious wood import and domestic consumption by type of wood, Indonesia, 2002

	Total imports (’000m ³)	Suspicious volume, % of imports	Total consumption (’000m ³)
Softwood			
Roundwood	24	0.0	228
Lumber	107	5.0	n.a.
Hardwood			
Roundwood	2,000	55.7	52,200
Lumber	9,701	10.0	n.a.
Plywood	3	n.a.	n.a.

Note: n.a. = not applicable

Source: Seneca Creek (2004: 15–16)

Malaysia

Similar to neighbouring Indonesia, Malaysia is also a principal consumer of its own forest resources. In particular, 24.4 million cubic metres (about 80%) of its annual log production is consumed domestically for further use in wood processing, making Malaysia the world’s second-largest consumer of tropical roundwood (ITTO 2007: 5, 77). Accordingly, imports of

roundwood and timber products into Malaysia are limited, with the exception of sawnwood. According to ITTO estimates, 1.3 million cubic metres of sawnwood were imported into Malaysia in 2007 for further processing (ITTO 2007: 76). Malaysia is the world's third-largest importer and the fifth-largest consumer of tropical sawnwood (ITTO 2007: 7). Domestic consumption of veneer and plywood is small; most of these timber products are exported to other countries (ITTO 2007: 77; see also section 'Malaysia: Exports', p. 99); however, Malaysia is also the world's second-largest consumer of tropical veneer (ITTO 2007: 9).

The official figures do not reflect concerns over illegal imports into Malaysia, especially from Indonesia and, in smaller volumes, from PNG. It has been estimated that about 12.4 percent of all imported hardwood logs, and five percent of all lumber imports are suspicious (Table 30). Despite a ban imposed on imports of tropical logs from Indonesia, there is ample evidence that illegal logs continue to be imported into Malaysia where they are used in domestic production or where they are sometimes re-branded to disguise the true source (see also section 'Malaysia: Exports', p. 99). According to some estimates, about 1.8 million cubic metres of logs are imported illegally into Malaysia annually from Indonesia, especially into Sarawak and Peninsular Malaysia (Seneca Creek 2004: 84–86). Moreover, there are also widespread allegations about illegal logging in Malaysia (see section 'Malaysia: Illegal logging', p. 58). This has led to suggestions that 'in 2001, 40 percent of Malaysia's consumption and export of timber (13,395,000 cubic metres equivalent) was estimated to have been acquired illegally' (Seneca Creek 2004: 84). Of particular concern has been the importation of protected species, such as ramin, into Malaysia. While there has been a small number of prosecutions of CITES violations involving logs of protected timber species, Malaysia does not equally monitor the importation of processed timber (Seneca Creek 2004: 85–86).

Table 30: Suspicious wood import and domestic consumption by type of wood, Malaysia, 2002

	Total imports (^{'000m³})	Suspicious volume, % of imports	Total consumption (^{'000m³})
Softwood			
Roundwood	12	0.0	18
Lumber	12	5.0	n.a.
Hardwood			
Roundwood	2,530	12.4	18,240
Lumber	926	5.0	n.a.
Plywood	5	5.0	n.a.

Note: n.a. = not applicable

Source: Seneca Creek (2004: 15–16)

New Zealand

New Zealand is a major consumer of timber and timber products in the region, but the country is largely self-sufficient; domestic consumption is almost exclusively satisfied by domestic production and New Zealand is a net exporter of timber and timber products. Imports into New Zealand are small in comparison and most timber imports into New Zealand arrive in the form of sawnwood; approximately 67,000 cubic metres in 2007 (ITTO 2007: 56). The ITTO projects that in 2007, New Zealand is consuming 16 million cubic metres of logs, 2.7 million cubic metres of sawn timber, 537,000 cubic metres of veneer and 324,000 cubic metres of plywood (ITTO 2007: 57). As domestic consumption largely involves domestic timber and timber products, there are no reports about suspicious volumes of timber consumption in New Zealand.

Observations

The demand for and consumption of timber and timber products is one of the most integral aspects of the illicit trade. The demand for cheap timber and for rare, tropical species is the single most important reason for widespread illegal logging and trafficking in the region. The Asia–Pacific region has some of the greatest consumers and importers of timber and timber products, and it is noteworthy that many countries are simultaneously major producers and consumers, thus playing a multi-fold role in the trade.

Any strategy aimed at eliminating the illegal trade in timber and timber products must address the demand for illegal logs and timber products. However, this chapter has shown that most consuming countries in the region have little, if any, mechanisms in place to ban consumption of illegal timber and timber products, and prohibit the import of illegally sourced timber. While some mechanisms exist to control the trade in species protected under CITES, these measures address only a small aspect of the trade and not the wider issues. But even where control mechanisms are in place, importation requirements are often circumvented by using false documentation, concealing imports, bribing customs and law enforcement officials, or otherwise importing illegal timber clandestinely. The size and geographical features of many countries in the region, such as long archipelagic coastlines, mountainous border areas and the like, also make it difficult for many countries to comprehensively monitor all cross-border trade.

While greater border control may increase detection of illegal imports, these measures come at a cost and are never able to fully suppress the trade in illegal timber. In fact, it may push some of the trade further underground and encourage more sophisticated ways of clandestine importations. In the medium and long term it is more effective to reduce the demand for illegal timber and timber products. This is considerably cheaper than most

other control measures and can be done in two ways: first, by encouraging use of legally produced material, and second, by encouraging use of alternative products not based on timber.

The principal problem for legal supplies is that they are considerably more expensive than timber from illegal sources. For most consumers and for many retailers, the decision to purchase or sell certain timber products is largely determined by the price and not by the legitimacy or illegitimacy of the source and the way in which the product has been traded. Many, if not most, consumers will choose a cheaper product over a more expensive one because they are unaware of or indifferent to the source of the product. Large discount retailers, who market the low price of their products rather than their quality and legitimacy, further encourage this type of behaviour. One characteristic of the illegal trade in timber and timber products is that many, if not most, consumers lack any understanding of the problem and its magnitude. One observer has remarked that:

The ultimate consumers of forest products ... have little or no understanding of the impact their purchasing has on forests and people in supplying countries Few realise ... that the cheap prices they pay are directly linked to the exploitation of some of the poorest people on Earth and the destruction of their forests (White et al. 2006: 22).

There is often equal unawareness of the problem among retailers and a recent study found that many retailers responded defensively to enquiries made (JP Consulting 2005: 13). Consequently, one of the great challenges for authorities in consumer countries is to create awareness about the patterns of the illegal timber trade and to create incentives for retailers and consumers to purchase timber that has been obtained and traded legally. Suggestions about how to accomplish this goal are discussed further in chapter 'Conclusion'.

Alternatively, it may be possible to reduce the illegal timber trade by replacing the demand for timber with a demand for non-timber based products, a solution that would, however, face fierce resistance from the timber industry and may be politically unpopular. Such measures would also have a severe impact on the economies of supply countries, which are often developing nations and are heavily dependent on timber production and exports.

The worldwide demand for timber and timber products, especially in this region, continues to grow while forest resources are rapidly declining. An immediate consequence of this imbalance is that prices for timber will rise. The ITTO recently confirmed that:

Prices for a majority of primary tropical timber products ended 2006 strengthened or at least equal to their levels at the end of 2005, as supply of raw materials worsened, global economies expanded and consumer confidence improved in many markets. ... Log prices for some Southeast Asian species rose to 10-year highs in 2006 due to further tightening in the supply of Asian logs, mainly arising from improved law enforcement and restrictions on log exports by some countries (ITTO 2007: vii).

The high demand for timber and timber products is the principal reason for widespread illegal and destructive logging that causes depletion of forest resources in supplying countries. The remaining forest resources cannot provide a secure and sustainable source for timber in the medium and long term unless sustainable forest management is introduced more widely and alternative products find greater use (Stark & Cheung 2006: 28).

Conclusion

Depletion of tropical rain forests is one of the greatest crises facing the world today. Deforestation results in massive soil erosion, widespread flooding, climatic changes, disruption to agriculture, loss of wildlife and displacement of native peoples. Forests are disappearing faster in South–East Asia than anywhere else in the world (Wolf 1996: 429).

Illegal logging and the illegal trade in timber are the principal causes of unsustainable deforestation in the Asia–Pacific region. This study has explored the characteristics and levels of the illicit trade in timber and timber products in the region. It has been shown that illegal activity associated with the timber trade is widespread and that the levels of illegal logging, processing, and consumption of illicitly obtained timber are alarming. Despite the magnitude of this phenomenon and its environmental, economic and demographic consequences, few countries have coherent strategies to comprehensively prevent and suppress the illegal trade. Furthermore, there is, to date, no universal strategy under international law to systematically tackle this problem.

This study has shown that the current levels of this trade are not sustainable indefinitely and that rapid action is needed to address the causes and consequences of this phenomenon in source, transit and destination countries. Environmental degradation, corruption and crime, and poverty in many rural communities are destined to worsen unless the illegal trade in timber and timber products is more strategically regulated and controlled. Coherent policies and regulations are needed at local, domestic, regional and international levels to address the immediate and long-term problems associated with this phenomenon.

This chapter summarises some key observations and recommendations to more effectively prevent and suppress the illegal trade in timber and timber products in the Asia–Pacific region in the future. The following sections explore policy and legislation, and the commodity chain, as well as the need for further research.

Policy and legislation

This section examines regional and international cooperation, international law and domestic legislation.

Regional and international cooperation

Chapter ‘International frameworks’ demonstrated that a plethora of organisations and fora exist in the region and beyond with mandates to address some aspects of the illegal trade in timber and timber products in the Asia–Pacific region. While these institutions have produced many reports, they have yet to generate any coherent strategies and enforceable mechanisms to systematically address the causes and consequences of this illicit trade.

'A unified approach to the management of the environment in the Asia–Pacific region' and specifically to the management of forest resources and wood-based products has not evolved (Mushkat 1989: 25).

The illicit trade in timber and timber products is characterised by transactions that cross national borders and it has been found that the organisations involved in this trade systematically abuse the discrepancies between the laws and enforcement mechanisms in the different countries of the region. Both the international trade and the ecosystems in the Asia–Pacific region are interconnected and know nothing about political boundaries. Even if one country is determined to take effective action against the illegal timber trade, on its own this would have little impact on the market and on other supplier/consumer countries. Bilateral agreements equally have limited impact on the wider problem. It is therefore incumbent on states to take coordinated action against the illicit trade in timber and timber products. The phenomenon is a transnational problem that warrants comprehensive strategies at regional and international levels. But the sensitivity over sovereignty issues prevents formulation of multilateral frameworks. Consequently, the most immediate step to reduce the illegal trade is to bring source, transit and destination countries together to resolve conflicting attitudes and work towards harmonised and feasible frameworks to address all elements and all stages of the illegal timber trade. Processes such as the Forum on Law Enforcement and Governance (FLEG: see section 'Regional conventions and organisations', pp. 36–44) are first steps in the right direction that need further support and greater enforceability. It is crucial that development of regional and international standards help give substance to the array of laws on paper (Crawford 1992: 45).

In addition to the diplomatic and policy levels, it is essential that relevant regional frameworks be supported by practical cross-border cooperation between law enforcement, customs and forestry officials. Intelligence sharing, joint training and investigations, and regular communication between agencies in the region are important ingredients of any strategy to more effectively suppress the illegal timber trade. International organisations, such as the World Customs Organization, Interpol and the ITTO, also have a role to play in this context.

International law

Analysis of international instruments addressing the illegal trade in timber and timber products has revealed a remarkable void of any enforceable treaties dealing specifically with the issues relating to this phenomenon. The existing conventions deal with some peripheral matters, but no single instrument criminalises or otherwise regulates illegal logging and the trade in and consumption of illegally obtained timber.

Section 'International law: CITES', pp. 11–23 has shown that the Convention on the International Trade in Endangered Species is the single most important international treaty

in this field and is seen by many 'as the most successful of all international treaties concerned with the protection of wildlife', including timber (Wolf 1996: 447). Although the application of CITES is limited to few tree species and only regulates some limited aspects of the international trade, the treaty's mechanisms, especially the import–export regime, may serve as a model for more comprehensive instruments designed specifically to prevent and suppress the illegal trade in timber and timber products (Chen 2006: 12–19, 33–34). Another observer has also remarked:

Unfortunately a number of governments still see CITES solely as an 'endangered species' convention and have made little use of the measures afforded by the convention to address one major wildlife trade sector, namely the timber trade where illegalities and corruption are common. CITES has shown that it can help export and import countries tackle the growing problem of illegal logging and illegal timber trade through verification of permits and the chain-of-custody process that is implicit in CITES provisions (Aikman 2003: 308).

The recent proposal by the Indonesian Government to develop specific international frameworks to address the illegal timber trade is worthy of further study and greater support (see section 'An international convention against timber trafficking', pp. 30–33). The proposal marks an important step towards resolving the 'polarisation and sensitivity over sovereignty issues [which] still inhibit [the] conclusion of a comprehensive global convention despite the accelerating destruction of tropical forests' (Birnie & Boyle 2002: 633). It is still too early to anticipate the outcomes of any global consultations on this issue. In the short and medium term, it is desirable to mandate the United Nations Office on Drugs and Crime with analysis of the criminal aspects of the global timber trade and thereby initiate a worldwide process with a view to developing international strategies and standards to prevent and suppress this practice.

It is further important that any new international mechanisms in this field achieve outcomes that go beyond adding more paper to the existing array of international environmental and trade laws. New international treaties must be accompanied by coherent implementation and enforcement strategies to generate visible and tangible results. At the same time, it is necessary to avoid any further complication and bureaucratisation that may hamper enforcement efforts and shift the illicit trade further 'underground'.

Domestic legislation

Chapters 'Sources of illegal timber', 'Transit points for illegal timber' and 'Destinations for illegal timber' have highlighted some of the discrepancies between national laws in the region. It has been shown that the spectrum of laws addressing the issues relating to the illegal trade in timber and timber products ranges from comprehensive regimes in some

countries to jurisdictions whose regulation is fragmentary. In particular, there are enormous inconsistencies and many loopholes in the criminalisation of activities associated with the illegal timber trade.

One important observation in the analysis of relevant laws in the region is the lack of any consistent, established and universal definition of relevant terms, specifically of the term 'illegal logging'. It has been shown that conceptualisations of the term vary and that in some countries it is simply not clear what conduct is illegal and what is legal. In 2002, Brack, Gray and Hayman (2002: para 2.15) observed that:

The definition of what is legal and what is not may depend on administrative fiat, or may be easily changed by local or national governments seeking to maximise revenue. Many undesirable and environmentally unsustainable practices in the forestry sector ... may in fact be legal, under existing laws

Finding a universal definition for illegal logging and other relevant terms is not trivial or merely academic. Consistent definitions would:

- help measure the extent of the problem and determine whether countermeasures are working
- bring clarity to public policy and public debate by identifying the criteria used to launch investigations; use intrusive powers; and justify arrests, seizures and prosecutions
- help government agencies – including forestry officials, customs and police officers, prosecutors and others on the front line – set the rules around practical measures, such as information sharing, seizures and the like
- set a baseline for international cooperation and mutual assistance.

Currently, only a small proportion of the illegal timber trade is subject to legal control by way of regulation or criminalisation. It is essential that loopholes in existing laws be identified and closed, and that the countries in the region work together to develop harmonised domestic laws across the Asia–Pacific region. The consumer countries of timber and timber products – usually industrialised, developed nations – have a particularly important role to play as their demand for cheap, illegal timber is responsible for a disproportionately large share of the environmental harm in source countries, which are frequently developing nations. In 2005, Michalowski and Bitten (2005: 140)

By virtue of their economic and political power, however, highly developed countries ... enjoy substantial leverage in framing the international treaties that govern environmental harms. In addition, powerful transnational corporations and the governments of their home countries are frequently able to influence the formation of domestic environmental law in developing countries where these corporations will operate.

The key consumer countries in the region, such as China, Japan, South Korea and Australia, must help source countries develop appropriate legislative frameworks and policies for sustainable forest management. It is desirable to criminalise the illegal trade in timber and timber products more consistently and more comprehensively throughout the region. Moreover, it would be useful to conduct further studies on the correlation between criminal offences and penalties and enforcement efforts to gain a better understanding of the trends in this illegal trade and of the efficiency of existing mechanisms.

Commodity chain

To prevent and suppress the illicit trade in timber and timber products more effectively, action must be taken at every stage of the commodity chain, including the source countries, manufacturing and transit points, and in the destination countries. It is crucial to identify all steps involved in this trade from logging to consumption and identify the points at which criminality may arise. Furthermore, it is equally important to address issues such as weak governance, corruption and bribery, inadequate laws and policies, and control and law enforcement all along the commodity chain (White et al. 2006: 22).

Moves to further combat illegal logging will not reduce the demand for cheap illegal timber and for rare, protected species. The '[s]upply-side approaches to addressing illegal logging that focus on actions in the forest can seldom be effective without corresponding demand-side action' (Speechly 2003: 222). Conversely, reducing the demand alone does not address the conditions that enable illegal logging and rapid deforestation in source countries. Consequently, the supply, trafficking, and consumption of illegal timber and timber products need to be addressed simultaneously.

Reducing the demand for illegal timber must go hand-in-hand with reducing its supply and controlling the trade that moves the illegal material from sources of supply to sources of demand (Brack 2003: 195). In this context, many countries play more than one role along the commodity chain in that they are simultaneously source and consumer countries, or processing and consumer nations. The analysis in chapters 'Sources of illegal timber', 'Transit points for illegal timber' and 'Destinations for illegal timber' has shown that China, for instance, is a major manufacturer of wood products and simultaneously exports and consumes great quantities of timber products. As well, Indonesia and Malaysia are major suppliers of roundwood for many countries in the region and, at the same time, consume large volumes of roundwood domestically.

Source countries

Strategies aimed at reducing the supply of illegal timber need to focus simultaneously on illegal logging and on the underlying political, socioeconomic and environmental conditions that enable and facilitate the illegal activities. In addition, source countries need to proactively identify those species that warrant protection and, in cooperation with other nations, compile more comprehensive databases of endangered trees, protected habitats and the like.

This study has shown that prohibition of logging, protection of forest areas and unilateral export bans alone cannot fully prevent illegal logging in the source countries. At best, these mechanisms displace the problem, or they contribute to more clandestine activities and lead to corruption and bribery of government officials, especially in the enforcement and forestry sectors. In 2001 the Asia–Pacific Forestry Commission noted: ‘One country taking actions to protect and conserve its natural forest resources can easily “export” harvesting problems to another supplier country’ (Asia–Pacific Forestry Commission 2001: 18). Moreover, the people actually felling the trees are usually not the core organisers of this illicit trade and are often doing so because they have no other viable means of income and live in areas where no other employment opportunities exist. In the case of illegal logging in the Russian Far East, it has been found that some workers work ‘for a pittance for criminal gangs in slavery-like conditions’ (Vandergert & Newell 2003: 305).

It is thus perhaps more important, especially in the medium and long term, to address the underlying administrative, legal, political and institutional factors. Obviously, these problems are difficult to resolve, but without fundamental improvements at all levels of government, illegal logging will continue and governments will forego important revenue and investment. One of the most immediate measures needs to include a separation of the forest sector from politics, in particular so that politicians cannot hold felling licences or operate timber-processing plants, and that the military and other agencies cannot be used to engage in logging activities. These steps need to go hand-in-hand with creation of independent certification schemes for legal timber to more clearly separate the legal trade from the illicit market.

It is desirable to avoid over-regulation, and to simplify bureaucratic and tariff systems to ensure licit activities do not become uneconomic or overly expensive and complicated. Greater transparency is needed in many countries to improve the concession system and reduce the vulnerability of relevant officers to corruption, and to protect them from threats and intimidation. Investor behaviour also needs to be considered to ensure investment is directed towards environmentally sustainable projects and not simply towards the most lucrative enterprises.

Furthermore, it is important to balance the needs of local communities and their land and resource rights with environmental and economic considerations. Close consultation with native landowners and other local communities is essential and must be embedded in

strategies at provincial and national levels. This may also facilitate creation of community-owned enterprises, prevent small-scale illegal activity and, where necessary, help local people find alternative employment and resettlement.

Manufacturing and transit points

The analysis in chapter 'Transit points for illegal timber' has shown that the manufacturing and trafficking of timber products is often used to disguise the origin and illegitimacy of the timber. Once illegal logs are milled or otherwise processed, they usually become indistinguishable from legal material. Therefore, it is important to monitor the material and processes used in timber production more closely, identify suspicious and illegal goods, and shut out those products from domestic and international markets.

There are a number of points along the manufacturing and exportation chain at which control and enforcement can be directed. The most simple but also the most important mechanism is development of a documentation trail that links raw materials with finished products to certify the legitimacy of the processes and materials used. Brack, Gray & Hayman (2002: 24) noted 'Comprehensive chain-of-custody monitoring of every stage of the chain of production, processing, export and import is necessary to guarantee legality'. It is further desirable to store this information electronically to make it more secure and to facilitate exchange of information between agencies and between countries. In comparison, the paper trail involved in the CITES export-import certification has been criticised, as the

documents themselves effectively acquire a value, opening up possibilities for fraud, theft and corruption in issuing them. Falsification of CITES permits is a common problem, particularly for high value products Theft and sale of blank documents similarly undermines the systems (Brack, Gray & Hayman 2002: para 3.3).

Development of electronic certification systems needs to be accompanied by specialised monitoring and enforcement units that analyse the data, identify irregularities, and investigate and enforce illegal activities. These units may be established as government agencies (as has been done in Malaysia) or by use of private industrial surveillance companies (as is the practice in Indonesia and PNG). The information and data generated within one country should be made available to other countries so that import and export countries, and source and destination countries, can cross-check their information, check it against actual shipments and thus more easily identify irregularities.

Greater control and enforcement of timber sales, export and processing must be accompanied by additional measures to prevent corruption of relevant officers in government agencies and the private sector. Unnecessary bureaucratisation and excessive tariffs should be avoided to encourage legitimate trade and ensure that legal products are

competitively priced. As with logging operations, investment into wood processing facilities should be directed at certified manufacturing plants to further isolate suspicious and illegal milling and manufacturing operations.

A further issue associated with the illicit trade in timber and timber products is the laundering of funds that derive from criminal activities. This study has repeatedly shown that the supply, production and sale of illegal timber are extremely lucrative, generating billions of dollars of revenue per year. Consequently, it is necessary to further investigate the money trail and institute proper mechanisms to freeze and seize assets associated with the illegal timber trade (Setiono & Husein 2005: 1–22).

Destination countries

For destination countries, importation and consumption of illegal timber and timber products are of central concern; chapter 'Destinations for illegal timber' has shown that some destination countries are encouraging use of legal timber products from sustainable sources while banning importation and sale of suspicious products. Japan and Australia, for example, are implementing policies to discourage imports of illegally sourced timber, while at the same time promoting use of material from sustainable sources (Australian Government DAFF 2006: 9; White et al. 2006: 22).

Importation

In trying to regulate importation of illegal timber, one of the greatest challenges is to separate legal from illegal shipments and to identify timber and timber products from suspicious sources. This is confounded by legal and illegal products often being indistinguishable, and marks and documents often being forged or non-existent. Use of advanced identification technology, such as DNA testing, would help verify the origin and type of timber, especially of roundwood.

Sophisticated technology, and greater control and enforcement, are often not feasible for developing countries due to their cost. Moreover, given the magnitude of regional trade in the Asia–Pacific region, it may never be possible to have complete control of all imports. One observer noted that:

[i]t is impossible for customs authorities to carry out routine checks of every shipment, and it would waste an enormous amount of resources even if it were possible. ... There is also the problem of a lack of customs resources; when set against high-profile contraband such as tobacco, narcotics and arms, and with the current focus on anti-terrorist activities, action against illegal timber is likely to receive a low priority unless extra resources are specifically made available (Brack, Gray & Hayman 2002: para 4.19).

Systematic risk management and intelligence collection may help make border controls more efficient, but greater control in one location may simply transfer the problem elsewhere. The borders of most countries in the region are porous and their geography makes them impossible to patrol, thus customs and import controls can only be one of many steps destination countries need to take.

The analysis in chapter 'Destinations for illegal timber' has also shown that importers are frequently unaware of or ignorant about the sources of their supplies. Smaller businesses, especially, often have no way of checking the true source of their imports, while others have shown little interest in verifying the legitimacy of their stock (JP Consulting 2005: 13). Consequently, it is essential that government agencies work closely with importers, wholesalers and retailers to establish partnerships and information exchange, raise awareness about the patterns of the illegal timber trade, and promote use of legal timber from sustainable sources.

These measures need to be accompanied by technical cooperation and assistance, law enforcement cooperation and joint training involving source, transit and destination countries.

As with all stages of this trade, it is important to continue certification and chain-of-custody information up to final retail sale to identify legal products and inform importers, wholesalers and consumers in their purchasing decisions. This should be accompanied by consistent sanctioning of goods from illegal or otherwise suspicious sources. Some observers have suggested expanding sanctions to all 'goods that cannot be identified as legal, closing markets to all imports lacking evidence of legal production (including those of "unknown legality")' (Brack, Gray & Hayman 2002: para 4.1). Furthermore, Brack and colleagues have suggested introducing legislation similar to the Lacey Act of the United States (16 USC § 3372) that enables destination countries to criminalise the trade in endangered species obtained in contravention of the laws of another country (Brack, Gray & Hayman 2002: paras 4.23–4.25).

However unilateral prohibition of suspicious imports is no solution to the problems associated with the illegal timber trade and source countries, which are often developing nations, may view them as protectionist and discriminatory (Wolf 1996: 437). Destination countries must cooperate with source countries in developing adequate trade agreements, and thus reconcile conflicting views and interests. Bilateral memoranda of understanding between Indonesia and consumer countries, such as Japan and the United Kingdom, may serve as models for other nations (see section 'Indonesia: Policies and legislation', pp. 54–57).

Consumption

As seen in chapter 'Destinations for illegal timber', demand and consumption are the single most important causes of the illegal trade in timber and timber products. The seemingly

insatiable demand for cheap timber products or for exotic tree species is a direct cause of the rapid deforestation and high levels of illegal logging in source countries. Unless the demand can be radically reduced and diverted to legal supplies and alternative materials, there can be no end to this illegal trade.

While the problems associated with the illegal timber trade are widespread across the region, relatively few countries account for the majority of production and consumption of resulting products. Therefore, changes in behaviour in a small number of countries could have a significant impact in reducing the phenomenon (Speechly 2003: 219).

Many consumers are unaware of or oblivious to the origin of the materials used in the production processes of the products they buy. Raising awareness among consumers about the magnitude of the illegal trade and the impact of consumer behaviour is crucial to reducing this phenomenon.

Furthermore, prosecutions of people deliberately or recklessly importing or purchasing endangered species or other prohibited timber products are currently the exception rather than the rule. More systematic investigation and criminalisation of relevant activities in destination countries would help suppress the trade more effectively and would deter others from purchasing goods from suspect sources.

Research

One of the most immediate observations about the illegal trade in timber and timber products in the Asia–Pacific region is the absence of systematic scholarly research on the topic. It is difficult, if not impossible, to analyse the patterns and magnitude of the illicit trade without further study of the core issues and the surrounding circumstances. The absence of complete datasets, and greater knowledge about the organisational and operational characteristics of the trade, hamper efforts to effectively formulate comprehensive policies and laws to prevent and suppress the illegal timber trade.

This study of open-source material from a range of countries in the region needs to be followed by further analyses of the root causes of the trade, its economic dimensions and relevant domestic legal frameworks. Field research in source countries; collaboration with forestry, customs and law enforcement agencies; and enquiries into the profits generated by the trade are necessary to enhance understanding of the illegal trade in timber and timber products. Academic research needs to be combined with intelligence from government agencies. Environmental and policy considerations need to be negotiated with the business interests of the private sector while recognising the rights of local communities in source countries.

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Glossary

Acronyms

APEC	Asia–Pacific Economic Cooperation Forum
ASEAN	Association of South East Asian Nations
ASEP	ASEAN Environment Programme
ATS	Australian Treaties Series
A\$	Australian dollars
Cth	Commonwealth of Australia
DAFF	Department of Agriculture, Fisheries and Forestry
EIA	Environmental Investigation Agency
FAO	Food and Agriculture Organization of the United Nations
FLEG	Forest Law Enforcement and Governance
IFF	Intergovernmental Forum on Forests
IPF	Intergovernmental Panel on Forests
ILM	International Legal Materials
IUCN	International Union for Conservation of Nature and Natural Resources
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
NGO	non-governmental organisation
NSW	New South Wales
NZ	New Zealand
PNG	Papua New Guinea
SPREP	South Pacific Regional Environment Programme
THB	Thai baht
UNEP	United Nation Environment Programme
UNODC	United Nations Office on Drugs and Crime
UNTS	United Nations Treaty Series
US\$	United States dollars

Tree species

This part of the glossary identifies some of the main tree species that are frequently harvested and traded illegally (Source: Timber Development Association 2007).

Bintangor (<i>Calophyllum</i> spp.)	This genus is widely distributed throughout South–East Asia and is used for flooring, furniture, light construction, boatbuilding and cabinetwork. Other common names include bintangur (Indonesia), penaga (Malaysia), bintangor (Malaysia), calophyllum (Papua New Guinea), bansanghal (Philippines), koila (Solomon Islands), poon (Thailand) and cong (Vietnam).
Daeng (<i>Xylocarpus</i> spp.)	Daeng is a perennial non-climbing tree native to Cambodia, India, Laos, Myanmar, Thailand, Vietnam and Thailand. It is used as a timber source but also for domestic and medical purposes.

Deglupta (<i>Eucalyptus deglupta</i>)	<i>Eucalyptus deglupta</i> is native to the Philippines, Papua New Guinea, Fiji and Indonesia. It is a popular plantation species used for general construction, pulp and paper products and posts. Other common names include bagras (Philippines), mindanao gum (Australia), and komo or kamarere (Papua New Guinea).
Gmelina (<i>Gmelina arborea</i>)	Gmelina is found in Vietnam, China, Indonesia, Thailand, the Solomon Islands and the Philippines. It was widely introduced as a forestry tree or for ornament and shade and is used for general carpentry, furniture, plywood, pulp and paper products, particleboard, matches, carvings and clogs. Other common names include yemane (Fiji), Malay bush-beech, white beech and white teak.
Kapur (<i>Dryobalan-ops</i> spp.)	Other common names include keladan and paige (Malaysia). Found mainly in Indonesia and Malaysia, kapur has a red-brown wood that is used as general construction timber, as well as for internal and external finishing materials, particularly exposed beams, door and window joinery, staircase material and furniture. It is particularly sought after in Australia for external joinery and decking.
Kasai (<i>Pometia pinnata</i>)	Kasai is found from Sri Lanka throughout South–East Asia towards Taiwan, Fiji, Papua New Guinea and Samoa. It is a general-purpose timber used for furniture, panelling, joinery, veneer and moulding. Other common names include matoa (Indonesia), kasai, sibu, taun (Malaysia), agupanga, malungai, tungau (Philippines), taun (Solomon Islands) and truong (Vietnam).
Kauri (<i>Agathis vitiensis</i>)	Other common names include dakua makadre (Fiji), kauri pine (New Zealand), bindang (Sarawak), menghilan (Sabah), damar minyak (Malaya), tolong (Brunei) and almaciga (Philippines). Kauri is found throughout Malaysia, Indonesia, Philippines, and extending to New Guinea, New Zealand and Fiji. The timber is largely used for millwork, boatbuilding, furniture, veneers, and pencil slats. Trees are tapped for their copal, and used in varnishes and lacquers.
Keruing (<i>Dipterocarpus</i> spp.)	Other common names include dau (Cambodia and Vietnam), Keroeing (Indonesia), main hang, mai sat (Laos), keruing bajak, keruing beras (Peninsular Malaysia), kanyin, yang (Myanmar), apitong (Philippines) and yang (Thailand). Keruing is found in regions of Indonesia, Malaysia and Cambodia. Its main uses include transport decking, plywood, building and strength applications in furniture.
Kwila (<i>Intsia bijuga</i>)	Kwila is native to South–East Asia from the Malaysian mainland through the islands to New Guinea and as east to Fiji and the Solomon Islands with small amounts found in northern Australia. The dense, highly termite-resistant timber is used throughout Asia for furniture, panelling, boatbuilding and veneers. Large amounts are imported into Australia for flooring, joinery and decking.
Mayapis (<i>Shorea squamata</i>)	Mayapis is found in the Philippines, and is used in interior joinery and panelling, furniture, veneer, shipbuilding and moulding. It is commercialised as white lauan (when pale) and red lauan (when dark).
Mengkulang (<i>Tarrietia javanica</i>)	Found through Indonesia, Malaysia and other western Pacific islands, mengkulang is typically used for flooring, veneer, furniture, panelling, joinery and cabinetwork. Its other common names include don chem (Cambodia), palapi, teraling (Indonesia), mai hao, mai po hao (Laos), kembang, mengkulang (Malaysia), kanzo (Myanmar), lumbayau (Philippines), chumprak (Thailand) and huynh (Vietnam).

Meranti (<i>Shorea spp.</i>)	This species is mainly found in Indonesia and Malaysia, and is primarily used for cladding, exterior and interior joinery, plywood and furniture.
Merbau (<i>Intsia spp.</i>)	Merbau is native to Malaysia, Indonesia, Papua New Guinea and some Pacific Island nations. It is generally used in internal and external joinery, flooring and heavy structural use.
Mersawa (<i>Anisoptera spp.</i>)	Other common names include phdiek (Cambodia), pengiran (Papua New Guinea), kaunghmu (Myanmar), palosapis (Philippines) and krabak (Thailand). Mersawa is found in Indonesia, Malaysia, Cambodia and Papua New Guinea. It is used for light construction, furniture, plywood, veneer and marine construction.
Merawan (<i>Hopea spp.</i>)	Other common names include merawan (Peninsular Malaysia), luis (Sarawak), mang (Sarawak), selangan (Sabah and Sarawak) and koki (Cambodia). Merawan is found throughout Malaysia, Thailand and Cambodia. It is suitable for general construction, boatbuilding, furniture, flooring, joinery, decking, plywood and mouldings. The heavier species are also commonly used for heavy construction.
Ramin (<i>Gonystylus spp.</i>)	A tropical hardwood native to Indonesia and Malaysia. Cultivation of ramin is difficult and the species has never been grown successfully in plantations. It is usually traded in semi-finished parts and products, rather than in raw form, and is commonly used for furniture, wooden blinds, picture frames, high-grade fine detail moulding, dowelling, carving and other decorative items. It is a particularly prized type of timber because of its appearance and colour, fine grain, and easy working properties. Ramin is listed in the World List of Threatened Species and in Appendix III of CITES. The high value of ramin wood makes the tree an attractive target for loggers.
Red balau (<i>Shorea vulgaris</i>)	Other common names include damar tampih (Kalimantan), beraja (Sumatra), choâ(r) ching (Cambodia), chik ding (Laos), balau (Peninsular Malaysia), selangan batu merah (Sabah), guiijo (Philippines), phayom (Thailand) and chiay (Vietnam). Red balau is found in Cambodia, West Malaysia, Borneo, Indonesia and the Philippines, and is used for heavy construction work, bridges, sleepers, boats and wharfs.
Teak (<i>Tectona grandis</i>)	Teak is native throughout Myanmar and the Indian peninsular, in Thailand and Indonesia. It has also been introduced into Malaysia and the Philippines. It is commonly used for sports goods, exterior and interior joinery, furniture, ship building, decking, doors, panelling and veneer.
White albizia (<i>Albizia falcataria</i>)	White albizia is found mainly in Papua New Guinea and the Solomon Islands. It is highly useful for pulpwood, fibreboard and particleboard, and also used for veneer, furniture, matches and crates. Other common names include molucca albizia, Indonesia albizia, batai (Peninsular Malaysia), mara (Sri Lanka), falkata, moluccan sau (Philippines), kayu macis (Sarawak, Malaysia), djeungdjing, sengon, sengon laut (Indonesia), tamalini (W. Samoa) and vaivai (Fiji).
White seraya (<i>Parashorea plicata</i>)	Found in Malaysia and the Philippines, the timber is used for interior joinery, light construction, flooring, plywood, furniture and cabinetwork, general carpentry, plywood and ships' decking. Other common names include bagtikan (Philippines), light red lauan, white seraya and urat mata. White seraya usually refers to Malaysian Species and bagitkan to Philippine species.

Types of timber and timber products

This part of the glossary explains some terms commonly use to define types of timber and timber products (Stokes et al. 1989).

Fuelwood	Wood salvaged from mill waste, cull logs and branches; used to fuel fires in a boiler or furnace
Hardwood	Timber from deciduous broadleaved trees as distinguished from that of pines, conifers and firs. The term has no reference to the actual hardness of the wood.
Log	Length of tree suitable for processing into lumber, veneer or other timber products
Lumber or sawn timber	Partly prepared timber, usually sawn into rough planks or otherwise roughly prepared for further processing
Plywood	Boards consisting of two or more layers of timber glued (sometimes veneer), pressed or otherwise bonded together with the grain of adjacent layers crosswise to give it increased strength
Pulp	Fibrous material made through a mechanical or chemical process from woodchips, particles, pulpwood or recycled paper. Pulp is used in paper, cardboard, fibreboard and cellulose production.
Roundwood	Logs, bolts or other round sections cut from trees for industrial or consumer uses
Softwood	Generally, one of the botanical groups of trees that in most cases have needlelike or scalelike leaves, the conifers, and also the wood produced by such trees. The term has no reference to the actual softness of the wood.
Veneer	Thin sheets of sliced or sawn wood

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The illegal trade in timber and timber products leads to economic losses in many countries as well as environmental degradation. International policy exists to curtail some of the trade, but there are still clandestine operations by large organisations and criminal networks. This report examines the scale of the illegal timber trade in the Asia-Pacific region, encompassing the processes and current trends in logging, sourcing, trafficking, manufacturing, importing and consumption of illegal timber and timber products. Assessments of countries' timber resources, extent of illegal logging, policies and legislation, and enforcement initiatives show the efficacy of local, regional, national and international legislative frameworks and actions to suppress illegal trade.

The report highlights the need for cooperative policies and regulations between countries to resolve sovereignty issues, share information and develop standards. Issues addressing monitoring the transit of timber and timber products would identify weaknesses in governance, laws, policies and enforcement. Potential research that identifies the causes of the trade, economic dimensions and legal frameworks combined with government intelligence would inform policymaking.