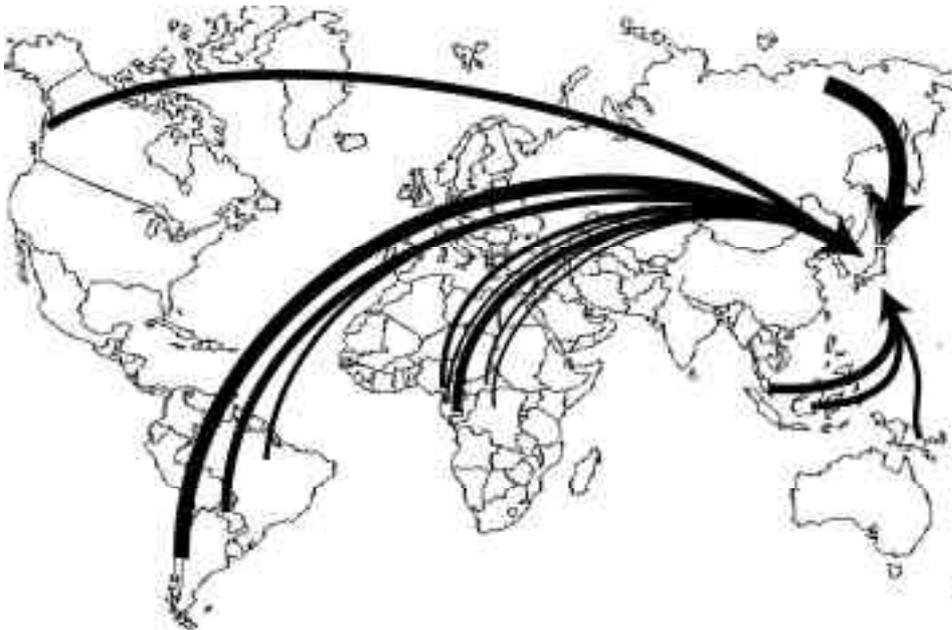


Chains of destruction leading from the world's remaining ancient forests to the Japanese market

Throughout the world ancient forests are in crisis. Some 80% of the world's original ancient forest cover is already gone; illegal and destructive logging poses the single greatest threat to what remains. The uncontrolled international trade in ancient forest products fuels this destruction. As part of its campaign to protect what is left of the world's ancient forests, Greenpeace is carrying out investigations into logging companies involved in illegal, destructive and abusive activities and is calling on consumers, trading partners and governments around the world to stop their role in driving this unscrupulous industry.



The Japanese government has so far failed to take any measures to regulate imports and continues to allow a huge influx of cheap, destructively logged timber.

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1. Executive summary

Throughout its period of high economic growth, Japan has been the largest consumer of timber in the international market. The impact of Japanese demand on the world's ancient forests has been enormous. As the evidence in this report shows, even with the recent economic recession and the decline in the domestic demand for timber, Japan still remains a dominant partner in ancient forest crimes, fuelling illegal and destructive logging and trade.

This research report reveals the many 'chains of destruction' in which Japan is involved. These chains lead from the world's last remaining ancient forests - in Asia Pacific, Asian Russia, the Amazon, Central Africa and South America –and end up in Japan, as the world's major importer of wood and wood products.

Some of the links identified by this report are specific, involving companies such as Concord Pacific, Rimbunan Hijau, Asia Pulp and Paper, Société Forestière Hazim, DLH Nordisk and Eidai do Brasil Madeiras, which are implicated in illegal and destructive logging and trade. Some involve trade in threatened species such as ramin, Korean pine and Brazilian mahogany.

Greenpeace estimates that around 40% or more of the total plywood supply in Japan is of illegal origin. Moreover, it appears highly likely that the Japanese public sector is implicated in forest crime through the use of timber from illegal and destructive sources in public projects. Illegal logging not only threatens the world's last remaining ancient forests, but impedes global efforts to achieve sustainable forest management. It also destabilizes the international wood market by undermining the market value of products.

Realizing these problems, world governments have established various international agreements and action programmes, most importantly the Convention on Biological Diversity (CBD), adopted at the Earth Summit in Rio in 1992. However, they have failed to translate words into actions, and ancient forest destruction still continues.

Despite its own recognition of responsibility and despite promises made at various international and national meetings, the Japanese government has so far failed to take any measures to regulate imports and continues to allow a huge influx of cheap, destructively logged timber.

Much of the ancient forest wood being imported into Japan ends up as disposable products – glossy magazines, karaoke books, photocopying paper, and plywood frames for concrete casting which are used once, then thrown away. For many of these products Japan's own plantation forestry could supply the demand, instead of the rare and often threatened species which are currently put to such wasteful use. Yet the government is failing to manage its domestic forestry properly, and thus neglecting this alternative, sustainably managed source.

The success of the 2001 international market campaign to save the Great Bear Rainforest in Canada has proved that companies who buy or consume timber can play a significant role in the fight against illegal and destructive logging, by excluding products from unsustainable sources. However, as this report and a March 2001 report by Greenpeace Japan on the Great Bear Rainforest make clear, the vastness and complexity of this issue necessitate the Japanese government's prompt intervention.

In April 2002, ten years after the Rio Earth Summit, the 'Ancient Forest Summit' will be held at The Hague. At this summit of world governments a ten-year plan for the planet's ancient forests will be decided – a plan which will determine the fate of these forests and of

"Forest resources directly contribute to the livelihoods of 90% of the 1.2 billion people living in extreme poverty and indirectly support the natural environment that nourishes agriculture and the food supplies of nearly half the population of the developing world. Forests are also central to growth in many developing countries through trade and industrial development. However, mismanagement of this resource has cost governments revenues that exceed World Bank lending to these countries. Illegal logging results in additional losses of at least US\$10 to 15 billion per year of forest resources from public lands. If captured by governments, these losses could support expenditures in education and health that would exceed current development assistance to these sectors."

World Bank, 2001¹

their biodiversity. Greenpeace is demanding that governments seize this opportunity to save the last remaining ancient forests, by:

- establishing **Moratoria** on industrial logging in intact ancient forests,
- implementing **Measures** to halt ancient forest degradation and loss, and
- providing **Money** – at least US\$1.5billion – to establish a global Ancient Forest Fund.

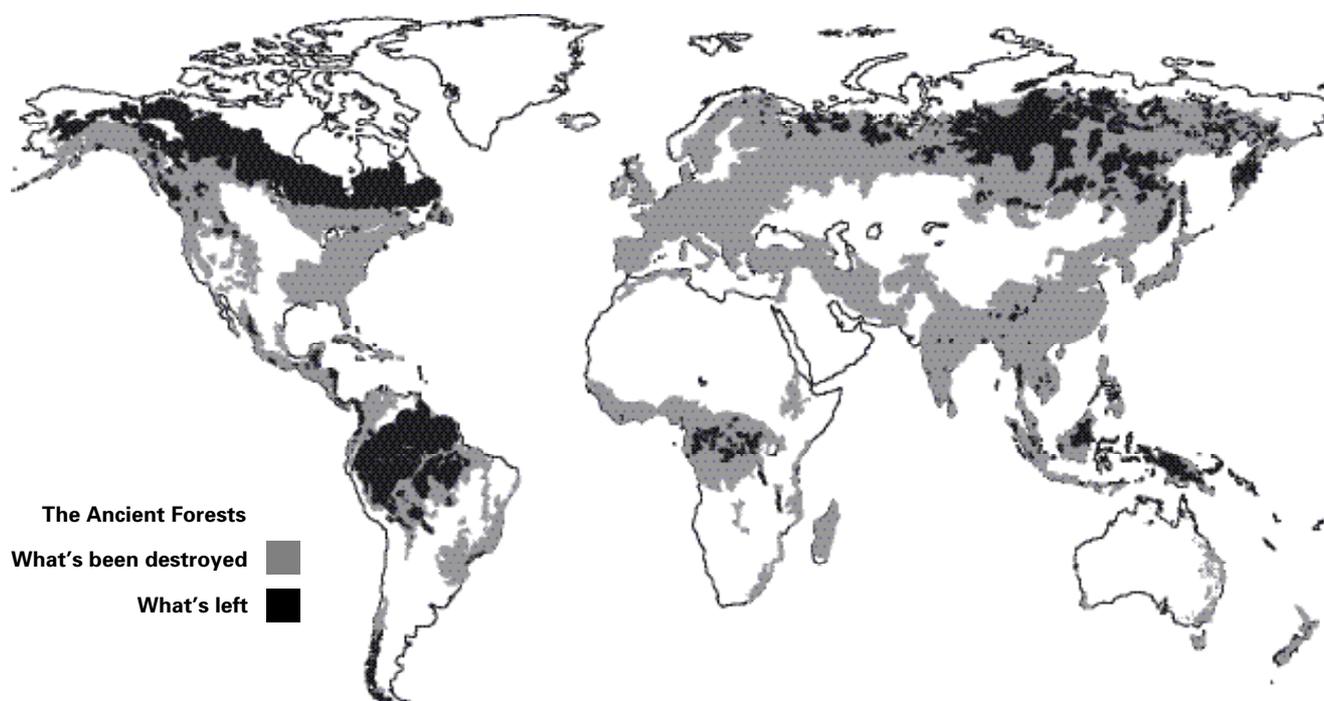
The Japanese government should take the initiative now and live up to its promises to stop the destruction, clean up the timber trade and fund the protection of ancient forests. Japanese companies and consumers can exert pressure on the government to take these steps. At the same time, companies can themselves play a vital role in protecting ancient forests by switching to the use of alternative wood and wood products, such as those certified to Forest Stewardship Council standards or sourced from domestic plantations.

"Short of a miraculous transformation in the attitude of people and governments, the Earth's remaining closed-canopy forests and their associated biodiversity are destined to disappear in the coming decades."

Dr. Klaus Toepfer, Executive Director, United Nations Environmental Program, 2001²



Cameroon's logging industry is dominated by illegalities – to the cost of the forest



2. Introduction

The huge demand for wood from Japan and other consuming countries has led to a situation in which ancient forests⁴ throughout the world are in crisis⁵. Some 80% of the world's original ancient forests have already been degraded or destroyed.⁶ Recently, demand from consumer nations has fuelled an upsurge in illegal logging and in the trade in forest products across the globe.⁷

Japan has long been the major player in the international wood market. In the 1990s, Japan consumed on average around 83 million m³ of wood each year.⁸ In 2000, it was still the top importer of roundwood, plywood and chips – importing 13.4%, 25.5% and 68.9% of total global imports respectively – and the second biggest importer of sawnwood, with 7.7% of the total global import.⁹

In March 2001, Greenpeace Japan published a report entitled Chain of Destruction: from Canada's Ancient Temperate Rainforest to the Japanese Market. This case study focused on only one company conducting destructive logging – yet it identified 229 Japanese companies which were implicated, directly or indirectly, in the destruction of Canada's ancient forests through the purchase of wood products from this region.

In the present report, Greenpeace reveals a more comprehensive picture of the role played by Japan in the global trade in illegally and destructively produced timber. We investigate the chains of custody originating in five ancient forest regions: Asia Pacific, Asian Russia, the Amazon, Central Africa and South America.¹⁰ Within each region, we focus our research on countries and forests where there are major threats, where sufficient information is available and where Japanese demand for wood is inflicting a significant negative impact. The logging operations in the regions highlighted in this report are extremely destructive. In many countries, a significant proportion is illegal, with corruption and the violation of indigenous peoples' rights widespread.

"Illegal logging and illegal trade in timber damage the timber industry by destabilizing the market and damaging the resource... Curbing these problems will help promote sustainable forest management."

ITTO's Trade Advisory Group, 2001³

Due to the nature of illegal logging and the lack of transparency within the industry, it is very difficult to identify every chain of destruction; consequently the examples discussed in this report are just the tip of the iceberg. However, the evidence presented here is sufficient to reveal the Japanese government's failure to take concrete measures to fulfil its promises – made at numerous international meetings – to protect the world's ancient forests, to promote sustainable forest management and to combat illegal logging.

Greenpeace believes that, given Japan's crucial role in the market for ancient forest products, the Japanese government, Japanese companies and consumers all have a special responsibility to work to protect ancient forests from destruction. In this report, we outline the opportunities for positive action that these groups can take.

Given Japan's crucial role in the market for ancient forest products, the Japanese government, Japanese companies and consumers all have a special responsibility to work to protect ancient forests from destruction.



Concord Pacific logs in a Papua New Guinea harbour destined for export to either Japan or China – Concord Pacific's Kiunga-Aiambak 'road development' project is a blatant example of how governments are failing to protect ancient forests by cleaning up the timber trade.

3. A last chance to save the ancient forests

In the last decade, the world's governments have negotiated various international agreements aimed at protecting the remaining ancient forests and promoting sustainable forest management. However, despite all the promises, no significant practical action has been taken to save the ancient forests. Governments have failed to prevent deforestation, to control the logging industries and illegal logging, or to implement ecologically responsible procurement policies.

If these failures continue, the last chance to protect the world's ancient forests will be gone for good. This chapter shows what world governments, and in particular the Japanese government, have done so far to 'save' the ancient forests.

3.1. Since the Rio Earth Summit in 1992

"In spite of the noble intentions expressed repeatedly and variously, actual achievements have been disappointing, evidenced by the current situation in the forestry sector: illegal logging and encroachments; continuing and increasing deforestation and land degradation; loss of bio-diversity; increasing occurrence of forest fires; denuded watersheds; truncated parks and protected areas; failed forest plantations; unprofitable investments; indifference of concessionaires to SFM [Sustainable Forest Management]." *ITTO report, 2001*¹²

The 1992 Earth Summit in Rio presented a unique opportunity to call the world's attention to global environmental and conservation issues and to prompt governments to start tackling them. At the Summit, the Convention on Biological Diversity (CBD) was adopted, aiming at: "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources".¹³ The CBD was signed by 182 countries, including Japan.

The CBD recognizes that: "Forest biodiversity may be the most rich of all terrestrial systems... holding the vast majority of the world's terrestrial species."¹⁴ Ancient forests are the natural habitat of 50% to 90% of the world's terrestrial diversity of plant and animal species,¹⁵ and so the conservation of these forests is a critical issue for the CBD. With some 80% of the world's ancient forests already degraded or destroyed¹⁶ and the rest still under threat, there is an urgent need to protect the ecological integrity of the remaining ancient forests for this and future generations.

"There is an urgency to take decisive action now. For each year of accepting business as usual, further deforestation and increasing demands on forest goods and services will take humanity further away from the goal of sustainable forest management ... At the global level, in terms of biological diversity and human-induced climate change, business as usual can often only be characterized as short-sighted." *Intergovernmental Forum on Forests Fourth Session, 2000*¹¹



Liberia's threatened forests are the last stronghold of the forest elephant in West Africa

The greatest threat to the remaining ancient forests is commercial logging.¹⁷ The growing problem of illegal and destructive logging of forests around the world has become widely recognized over the course of a series of international meetings during the last few years, as outlined below.

May 1998: the G8 meeting in Birmingham

The G8 demonstrated awareness of the need to combat the illegal production of and trade in wood and wood products.¹⁸

July 2000: the Okinawa Summit

Greenpeace highlighted the absence of action by G8 countries by exposing the illegal timber trade from Russia, Brazil and other countries.¹⁹ As a result, the communiqué of the Okinawa Summit included the wording: "We will also examine how best we can combat illegal logging, including export and procurement practices."²⁰

September 2001: the East Asia Ministerial Conference on Forest Law Enforcement and Governance

The ministerial declaration signed at the East Asia Ministerial Conference on Forest Law Enforcement and Governance, held in Bali, Indonesia in September 2001, while not legally binding, acknowledges the scale and urgency of the problems of illegal logging and trade, and of corruption and failed law enforcement. It commits countries to combat illegal logging, the associated illegal trade and other forest crimes, and to explore ways of eliminating the export and import of illegally felled timber.²¹ Japan was among the signatories to this declaration.

October 2001: the 31st session of the International Tropical Timber Council (ITTC)

Speaking at the opening of the 31st session of the International Tropical Timber Council (ITTC, the organization's Executive Director, Dr Sobral, proposed that "the Council consider authorizing and financing case studies on illegal logging and the illegal timber trade; an international seminar could then be held to report the findings of the case studies. If sufficient common elements in the problems and recommended solutions were found, guidelines on preventing illegal logging and illegal trade could be developed."²²

Despite all the agreements following the Rio Earth Summit, most of the 182 countries that committed to the legally binding CBD, including Japan, have done little to live up to their commitments. In April 2002, the world's governments will meet at the Ancient Forest Summit (Convention of Biological Diversity Sixth Conference of Parties – CBD COP6) in the Hague. At this summit, world governments will decide a ten-year plan for the planet's remaining ancient forests – a plan which will determine the fate of these forests and the plants, animals and people they support.

3.2. What Has the Japanese Government Done So Far?

In Japan, two-thirds of the land area is forested and 41% of all forests are softwood plantations. The total forest resource stock was estimated at 3,800 million m³ in 1999 (of which plantation contributed 57%), and it is growing at the rate of about 80 million m³ per annum.²⁴ Total wood demand was 97.8 million m³ in 1999,²⁵ so in theory domestic forestry could meet a fair share of the domestic demand for wood and wood products.

However, today both the supply of and the demand for domestic wood are very low, largely because of availability of cheap imported wood from foreign resources. Japan's self-sufficiency in wood has decreased from 90% about 40 years ago to 19.2% in 1999.²⁶ Today, Japan is one of the main wood-importing countries in the world and its imports, whether obtained illegally, destructively or sustainably, are shipped indiscriminately from around the

The greatest threat to the remaining ancient forests is commercial logging.

"Our country imports about 80% of its national wood demand, and it is said that the majority of it possibly comes from illegal logging...I think the importing countries should also take tight measures." T. Matsuoka, Liberal Democratic Party, 2001²³

globe. The lack of restricting regulations and investigation in Japan has allowed the importation of illegally extracted ancient forest timber, as we shall see in Chapters 4 and 5.

The Japanese government itself admits the country's responsibility. In February 2001, Mr Matsuoka, the Senior Vice-Minister of Agriculture, Forestry and Fisheries, stated that Japan would restrict the importing of illegally logged wood from areas such as Southeast Asia.²⁷ In June 2001, the first meeting of the "committee to establish measures to save the world's environment from global illegal logging and imports", established by the Liberal Democratic Party, discussed importing countries' responsibilities towards illegal logging and trade. The committee leader, Mr. Matsuoka, commented: "Our country imports about 80% of its national wood demand, and it is said that the majority of this possibly comes from illegal logging ... I think importing countries should also take tight measures."²⁸

However, despite all these promises and its commitments to the CBD and other agreements already discussed, the Japanese government has not yet taken any real measures. It has not attempted to regulate imports, to promote the use of domestic timber, or to control the vicious circle of increasing imports of cheaper timber and decreasing self-sufficiency.

Indeed, it is the corporate sector which has recently shown the most positive commitment and involvement in this issue - with successful results. At the end of 2000, Greenpeace conducted research into the Japanese market to identify customers of a Canadian logging company, Interfor, which had been linked to the destruction of the Great Bear Rainforest in Canada. The research identified 229 Japanese companies which had directly or indirectly purchased wood and wood products from Interfor.²⁹ After releasing the report in March 2001, along with an email-based action against some of the companies, around 70 of them pledged to cancel their contracts with Interfor, realizing that they were fuelling ancient forest destruction by buying its products.

Together with campaigns by Greenpeace in other regions where Interfor has a market - Europe, the USA, China, etc. - this approach led in April 2001 to a successful outcome which should ensure the protection of the Great Bear Rainforest (see BOX 9, Chapter 6.1). This example shows how influential the Japanese market can be in stopping ancient forest destruction, and highlights the importance of international collaboration in bringing about change. If Greenpeace, a small organization, can lead such a movement, why should the Japanese and other governments not be able to do likewise?

After the release of the Greenpeace report, around 70 Japanese companies pledged to cancel their contracts with Interfor.

4. Destruction of the world's last ancient forests

As this chapter will show, logging can be a highly destructive process, and illegal logging and trade in wood and wood products are rampant throughout the five regions considered. Some countries which are among the biggest exporters of wood products in the world at the same time suffer high illegal logging rates: in Cameroon, for example, the figure is well over 50%;³¹ in Indonesia, as much as 73%;³² in Asian Russia, at least 20%;³³ and in the Brazilian Amazon, 80%.³⁴ This situation severely undermines the global effort towards sustainable forestry and threatens the stability of the international timber market.

Japan is the major consumer of wood from these countries and regions (see Figure 2). Some of the chains of destruction identified by Greenpeace's own investigations link the Japanese market with companies implicated in the illegal and destructive logging of ancient forests, or with the use of species threatened due to high international demand. The names of these companies and species appear in bold in this chapter, and they are profiled in boxes in Chapter 5, which more closely examines the chains of destruction culminating in five types of forest product in Japan.

4.1. The Paradise Forests of Asia Pacific

Japanese products sourced from illegal or destructive logging in this region: plywood, interior lumber and furniture, paper, exterior wood, other products

This region includes the predominant evergreen rainforests of Southeast Asia and Australasia, together with monsoon and deciduous forests in the drier and more mountainous parts of Indonesia, New Guinea and the nearby archipelagos.

Widespread illegal logging and trade is not only a country-specific problem; it is prevalent throughout the Asia Pacific region due to the smuggling of illegally logged timber between countries. Indonesia and Malaysia, two internationally important exporters of forest products, are associated with illegal logging rates as high as 73%³⁷ and 35%³⁸ respectively.

Numerous reports have revealed high levels of illegality in many other Southeast Asian countries, for example Cambodia, Laos, Vietnam and the Philippines.³⁹ Illegally harvested logs are smuggled into Malaysia, Thailand and Singapore from neighbouring countries to produce wood products which are then re-exported to final markets, including Japan.⁴⁰ The species smuggled are those which are highly valued in the international market, such as ramin and teak,⁴¹ both of which are commonly used for interior applications and furniture in Japan (see BOX 3, Chapter 5.2).

Indonesia

In Indonesia, pulp, paper and plywood industries have been run at a massive overcapacity and have contributed significantly to the loss of ancient forests and the increase of illegal logging. Only 8% of the timber consumed by the paper and pulp industry between 1988 and 1999 was harvested from plantations and as much as 40% of the timber consumed between 1995 and 1999 was estimated to have come from illegal sources.⁴² It is expected that the country's pulp mills will continue to depend upon the clearing of rainforests at least until 2007 and possibly much longer.⁴³ Asia Pulp and Paper Co. Ltd. serves as a significant link between Japan and ancient forest destruction in Indonesia (see BOX 7, Chapter 5.3).

The ITTO's mission report⁴⁴ concluded that the demand for logs to feed Indonesian plywood mills is now more than double the annual allowable cut from the country's ancient forests, and that the strong demand for illegal timber, unless corrected, will ultimately "lead to

"In many countries, illegal operations proliferate and governments are unable to control their own bureaucracies or to enforce adherence to the 'rules of the game' by commercial corporations and civil society entities. In extreme circumstances, private corporations or powerful groups are able to sway government and to 'purchase' decrees, legislation and regulations for their own benefit." *Food and Agriculture Organization report, 2001*³⁰

"Illegal logging is now recognized as one of the most critical problems of forestry and forest industry in Indonesia." *ITTO report, 2001*³⁵

"Combating internal illegal logging and controlling illegal trade has to go together" *H.E. DR. Muhammad Prakosa, Indonesian Forestry Minister, 2001*³⁶

destruction of the forests and the collapse of the industries". In 1999, one of the directors of APKINDO was reported to have said that "Indonesia's plywood industry is already a sunset industry", implying a difficulty in ensuring the log supply.⁴⁵

Japan has been the major contributor to the depletion of forest resources in Indonesia, being the main importer not only of Indonesian plywood, but also of Indonesian logs for domestic plywood production (e.g. species of lauan, meranti and kapur, see BOX 1, Chapter 5.1). For example, in 2000 Japan imported 35.8% and 15.6%, respectively, of total Indonesian plywood and log exports (see Chapter 5.1).⁴⁶

Papua New Guinea

In Papua New Guinea, the government has consistently failed to enforce existing forest legislation and has repeatedly broken its own national forestry laws, in order to allow powerful so-called 'robber barons' such as Concord Pacific and Rimbunan Hijau access to areas of ancient forest (see BOX 2, Chapter 5.1).⁴⁷ Papua New Guinea has already lost 60% of its frontier forests, and 84% of what remains is threatened.⁴⁸ Japan has long played a significant and direct role in the plundering of these forests – several Japanese companies have operated in Papua New Guinea to obtain logs for Japanese industry.⁴⁹ In 2000, Japan imported 36.1% of Papua New Guinea's total log exports.⁵⁰

In November 2001, the Papua New Guinea government lifted a two-year moratorium on all new logging concessions, despite the damning findings of an independent review. The Papua New Guinea Forestry Review Team, funded by the World Bank and AusAid, had assessed proposed logging concessions and their compliance with Papua New Guinea's laws. They found that one-third of the proposed projects were illegal and almost all were unfit to go ahead in their current form.⁵¹ Out of the concessions found to be illegal, four have nonetheless been given the green light for logging within the largest intact forest areas. Rimbunan Hijau is highly likely to secure significant concessions in these areas.



Logs taken from spurring tracks one kilometre or more from a 'road development' project in Papua New Guinea's forest – the project was a ploy for a Malaysian-owned logging company to gain access to valuable timber stocks

The strong demand for illegal timber, unless corrected, will ultimately "lead to destruction of the forests and the collapse of the industries".

4.2. The Snow Forests of Asian Russia

Japanese products sourced from illegal or destructive logging in this region: plywood, interior lumber and furniture, paper, other products

The snow forests of Asian Russia comprise areas of intact ancient forests stretching from the arctic zone in northeastern Sakha to the subtropical region in the south. Forest covers 45% of the territory, and ranges in type from shrublike tundra forest in the north to rich mixed forests in the south.

Uncontrolled and unsustainable logging poses a serious threat to Russia's snow forests. Currently, almost all the timber coming from Russia derives from natural forests, some of which fall into the category of ancient forest.⁵³ Around 90% of commercially logged timber is thought to come from clearcutting, which is extremely damaging to the environment, ecology and the forest resource itself.⁵⁴ Logging in Russia is also highly wasteful – only between 40% and 60% of the logs felled are actually used, while the rest are left on site or otherwise wasted.⁵⁵

When forests are logged in this area, the clearcut sites are often not reforested. They will either undergo natural regeneration of secondary deciduous forests, with less economically viable species, or become virtual deserts because of the extreme cold and thin soil layers in areas of permafrost. Even if new forests are planted with valuable tree species, in the absence of necessary care and thinning they will be replaced by secondary forests. Thus the region's forest resource is deteriorating rapidly both in terms of quantity and quality.⁵⁶

Even a rough estimate confirms that at least 20% of timber logged in Asian Russia violates current legislation,⁵⁷ but in reality, Greenpeace Russia suspects that almost all wood trade operations with Russia deal with illegality to some extent, at some stage in the logging or trading process. The share of illegal timber logged without any permission is highest for oak, ash, walnut and Korean pine (see Chapter 5.2 and BOX 3). Other tree species are more often affected by violations such as logging with illegal or incorrect permits, logging outside permitted areas, overcutting and destroying populations of endangered species while logging for other timber species. Some trade in wood can be considered illegal as well, for example as a result of transfer pricing, undergrading of logs and incorrect classification of species.⁵⁸

Vitaliy Artyukhov, Russia's Minister of Nature, said in November 2001 that illegal logging in the whole of Russia had risen by 80% in the previous five years.⁵⁹ He added that in the previous year alone, the federal budget had suffered a loss of R480m from the blossoming illegal timber business.⁶⁰ However, this figure represents only a fraction of actual losses, because of the very incomplete nature of State statistics and the poor quality of work carried out by Russian control bodies.

In this region, too, Japan is the main contributor to ancient forest destruction. Wood comes from Russia to Japan from the Russian Far East and Eastern Siberia, where most of Russia's remaining 'frontier forests' are located.⁶¹ In 1998 and 1999, 68.1% and 53.3% respectively of the total (reported) timber exports from these areas were destined for Japan.⁶² Due to low domestic demand, the Russian Far East timber industry is almost entirely export-driven, mostly supplying three countries: Japan, China and South Korea. Japan also imports some chips (64,150 tonnes in 2000⁶³) from Russia, which are all from natural forests (see Chapter 5.3).

In 2000, Russia was the biggest supplier of logs to Japan, providing 35.1% of its total log imports.⁶⁴ In Japan, 62.2% of Russian logs were processed into sawnwood and 32.8% into plywood, both mainly for housing construction⁶⁵ (see Chapters 5.1 & 5.5). In 2000,

"The struggle against illegal logging is a key priority of improving the national system of forest management in Russia... a key motive for illegal logging rests with the growing global demand for timber and paper products, therefore effective measures to prevent, detect, and deter forest offences would be feasible in the framework of close international co-operation."

*Y.A. Kukuyev, First Deputy Minister of Natural Resources of the Russian Federation, Chief of the National Forest Service of Russia, 2001*⁵²

Illegal logging in the whole of Russia has risen by 80% in the last five years.

39,670m³ of Korean pine logs were imported:⁶⁶ these are used to produce furniture and interior lumber (see BOX 3, Chapter 5.2).

4.3. The Amazon Rainforest

Japanese products sourced from illegal or destructive logging in this region: plywood, interior lumber and furniture, paper, exterior wood, other products

The Amazon rainforest is the largest remaining tropical rainforest in the world. It ranges across nine countries: Brazil, Guyana, Venezuela, Colombia, Surinam, French Guiana, Ecuador, Peru and Bolivia. However, the majority of the Amazon falls within the borders of Brazil.

In the Brazilian Amazon an area of 589,000km², 1.5 times larger than Japan's total area, has been destroyed in the last thirty years.⁶⁸ According to Brazil's National Institute for Space Research (INPE), the deforestation rate in August 1999 - August 2000 was the highest for any year since 1995.⁶⁹

Illegal and predatory logging plays a central role in the destruction of the Brazilian Amazon. The government now estimates that 80% of logs cut in the Brazilian Amazon are illegal in origin.⁷⁰ Due to the weakness of the federal environmental agency, IBAMA, most illegal activities occur unnoticed.

The Brazilian Amazon, which supplied some 12% of domestic log production in 1970, today supplies some 90% of the country's total tropical timber production.⁷¹ With the depletion of Southeast Asian and Central African forests, the Amazon has started to be targeted by transnational corporations as a key source of tropical timber for coming decades.⁷²

Greenpeace has been playing a vital role here since 1999 as the only organization currently investigating illegal logging in the region. It has already exposed several cases involving trade with major consumer countries, for instance the case of **Eidai do Brasil** and Japan (see BOX 6, Chapter 5.2).⁷³

Some illegal operations in the Brazilian Amazon have been driven by the international market's demand for a few highly valued timber species, such as **Brazilian mahogany** (see Chapter 5.2 and BOX 3).⁷⁴ The selective and highly illegal logging of mahogany is a direct cause of ancient forest loss as a whole. By leaving behind a network of roads and trails, it opens the door to illegal logging of other species, and to widespread exploitation of the Brazilian Amazon through activities such as agriculture and ranching. Following months of investigations, in 2001 Greenpeace confirmed chains of custody from illegal mahogany logging in the Brazilian Amazon to famous furniture makers in the USA and the UK, via trading company **DLH Nordisk**.⁷⁵ The chain then led to furniture retailers in Japan (see Chapter 5.2, BOX 4).

"In fact, timber extraction in the Amazon is predominantly (97%) done without management due to poor enforcement, low technological availability, and high economic returns." *The World Bank report, 2000*⁶⁷



IBAMA seized some 21,000m³ of illegal mahogany during Operation Mahogany between October and December 2001

Greenpeace also confirmed that Japan imports logs from Guyana,⁷⁶ another Amazonian country. Of the total import from Guyana in 2000, 60% was found to have been consumed by just one plywood manufacturer in Japan.

4.4. The African Forests of Great Apes

Japanese products sourced from illegal or destructive logging in this region: plywood, interior lumber and furniture, exterior wood, other products

The spectacular lowland rainforest of Central Africa stretches across the regions of Cameroon, the Central African Republic, Congo Brazzaville, the Democratic Republic of Congo, Equatorial Guinea and Gabon. This is the most species-rich region in Africa and is home to three of our closest animal relatives: the gorilla, the chimpanzee and the bonobo.

Throughout their range in Africa great ape populations have fallen dramatically, and now the bushmeat trade and habitat loss or degradation are major threats to those remaining. In Central African countries, rapidly expanding commercial logging exacerbates the situation by opening new roads into undisturbed primary forests, sometimes illegally, exposing apes and other wildlife to increased pressure from hunting.⁷⁸ In many cases, the initial opening of the forest is carried out to get access to a small number of commercially valuable timber species. Many of these are now listed in the IUCN (The World Conservation Union) Red List of Threatened Species as being threatened with extinction (see Chapters 5.1, 5.2 and 5.5).

Gabon and Cameroon are the two largest exporters of forest products in Africa. In both countries, logging industries are largely dominated by foreign (notably European, Lebanese and Malaysian) interests.⁷⁹ The region's main deforestation risk at present is in south and southeast Cameroon.⁸⁰ Over 50% of logs and timber produced in Cameroon are illegal in some way.⁸¹ Of all the forest product companies logging and/or trading illegally in Cameroon, one of the largest – and certainly one of the most notorious – is the Lebanese-owned **Société Forestière Hazim (SFH)**.⁸² This company, along with two others also involved in illegalities (**SEBC and Rougier**), was identified as having trade links to Japan (see BOX 5, Chapter 5.2).

"The clock is standing at one minute to midnight for the great apes. Some estimates expect that in as little as five to 10 years they will be extinct across most of their range." *Dr. Klaus Toepfer, Executive Director, UNEP, 2000*⁷⁷



July 2001: new logging road in East Cameroon

In Gabon, the logging is mostly export-driven and highly selective. More than 90% of the log production is exported. Between 1987 and 1996, 71% of the export volume was accounted for by just one species, **okoumé** (*Aucoumea klaineana*). Okoumé is used to produce plywood in the countries such as Japan which import it⁸³ (see BOX 1, Chapter 5.1).

Okoumé logging in Gabon has expanded rapidly, and if it continues at its current rate its sustainability is highly questionable. As recently as 1999, only a small number of the more than 200 logging companies had started (or planned to start) writing forest management plans to regulate their logging concessions, although this is demanded by law.⁸⁴ Furthermore, the practice of renting logging rights on a concession to a third party, widely agreed to be illegal, is becoming increasingly common and serves as a disincentive to sustainable forestry.⁸⁵

4.5. The Temperate Jungle of South America

Japanese product sourced from illegal or destructive logging in this region: paper

The largest tract of essentially undisturbed temperate forest in the world remains mostly in Southern Chile and partly in Argentina. It is dominated by southern beeches such as ulmo (*Eucryphia cordifolia*) and laurel.

Japan has been the major contributor to ancient forest destruction in Chile, which is strongly linked to the trade in wood chips. Over 50% of Chile's wood chip production is exported, of which over 99% comes to Japan for the paper and pulp industries.⁸⁷ According to statistics from Chile's Forestry Institute (INFOR), 27% of the total export in 2000 derived from native ancient forests.⁸⁸

The wood chip trade has accelerated the conversion of native forest into plantation, which has been the major cause of loss or degradation of significant parts of Chilean temperate jungle. Instead of planting the already deforested land which is available, timber companies prefer to clearcut native forest because they can make a profit by selling logs for wood chips. Small and intermediate landowners are also implicated in this process, sometimes by illegally logging the native forests.⁸⁹

A report by the Chilean Central Bank estimates that approximately 700,000ha of forest were cleared between 1984 and 1994. Moreover, it predicts that with current methods of exploitation, all native forests not set aside for protection will be lost within 20 to 30 years. Chile's Forestry Action Plan, a joint government and non-governmental report, states that just 5% of the exploitation in native forests is carried out with proper management and projects that, over the next decade, as much as 120,000ha may be destroyed each year.⁹⁰

“Wood chips are the primary product from Chilean native forests, and a principal cause of our native forest destruction. Japan’s paper and pulp industry is essentially the only buyer of Chile’s wood chips.” *Defensores Del Bosque Chileno, 1997*⁸⁶

Over 50% of Chile's wood chip production is exported, of which over 99% comes to Japan for the paper and pulp industries.

5. Chains of destruction – destroyed in ancient forests, sold in Japan

This chapter looks at the Japanese market for five types of wood product, which are the key products sourced from ancient forest destruction. Detailed case studies are provided to show how notorious companies in each of the five regions considered above have penetrated the Japanese market, and how some species are threatened by the Japanese demand.

One very important development, which we do not explore in this report, concerns China. China is now competing with Japan for the position of the biggest importer of wood from many of the regions discussed in this report (for example Asian Russia, Papua New Guinea and Central Africa). The wood is used to supply China's growing processing factories which produce sawnwood, plywood, laminated wood, joinery products and furniture.

With the increasing re-export of forest products, China is emerging as another significant link in the chain connecting the Japanese market with illegal and destructive logging in these regions. For example, in 2000 China emerged as the top furniture supplier to Japan, accounting for 20% of total Japanese imports.⁹²

5.1. Plywood

Ancient forest regions: Asia Pacific, Asian Russia, Amazon, Africa

Among the various forest products, plywood stands out for its extensive implication in illegal and destructive logging in four ancient forest regions. According to Greenpeace's research, tropical hardwood logs used by some Japanese plywood manufacturers come from the following countries: Indonesia, Papua New Guinea, Malaysia, the Solomon Islands, Cameroon, Gabon, the Republic of Congo, Equatorial Guinea and Guyana. Softwood logs come from Asian Russia.

The majority of hardwood logs imported by Japan are used for plywood production. During the year 2000, 84% of South Sea logs (including Southeast Asian countries of Indonesia, Malaysia, Papua New Guinea and Philippines) imported by Japan were consumed to produce plywood, accounting for 48.1% of the total logs consumed for this purpose.⁹³ Of the total demand for tropical (South Sea plus African) logs, 91.3% was expected to be used for plywood production in 2001.⁹⁴ Some of the species concerned are endangered due to intensive logging and are now listed in the IUCN Red List (see BOX 1).

BOX 1

Endangered species used for plywood production.

Many species of lauan (species of Shorea, Parashorea and Pentacme), meranti (species of Shorea and Hopea) and kapur (*Dryobalanops* spp.) from Asia Pacific are listed as endangered in the IUCN Red List. Preliminary knowledge of the ecology of African okoumé (*Aucoumea klaineana*) implies that the species might not tolerate repeated and frequent selective logging and it is now listed as vulnerable in the IUCN Red List.⁹⁵

According to Greenpeace's investigation, some of the Papua New Guinean logs used for plywood production in Japan have been logged by the Malaysian-owned Rimbunan Hijau and its subsidiaries, which have been plundering the Paradise Forests and people of Papua New Guinea (see BOX 2). In addition, it was confirmed that at least one Japanese plywood mill had bought veneer directly from Rimbunan Hijau. Japan also purchases logs from Concord Pacific, which has been conducting illegal logging in Papua New Guinea's Western Province (see BOX 2).

"In the context of global trade, these contractors are nothing more than intermediaries in a raw log production chain which is dominated by companies in consumer countries such as Japan and Korea... In sum, producer companies in PNG, even the seemingly all-powerful Rimbunan Hijau, enjoy nothing more than a subordinate position in a world raw log trade that is dominated by the appetites of consumers. Malaysian loggers in PNG function to cater to consumer appetites for timber which are largely Japanese. Having exhausted sources in the Philippines and Sabah in the 1960s and 1970s, these consumers found new supplies in Sarawak and PNG."

IIED and Papua New Guinea National Research Institute report, 1998⁹¹



Logs for plywood production in Tokyo harbour

BOX 2

Rimbunan Hijau

Having caused widespread forest degradation in Sarawak, Rimbunan Hijau Group has expanded its logging empire to Papua New Guinea, the Amazon, Africa and Russia. The group became the dominant player in Papua New Guinea through its control of a number of associate and subsidiary companies. The group's market share of timber felling in Papua New Guinea is disputed and estimates range between 40% and 80% of total log exports.⁹⁶

An Australian SBS Television Dateline documentary entitled Papua New Guinea: Wilderness Laid Waste by Corruption made allegations of "corruption and violence which underlie every aspect of logging operations in Papua New Guinea", focusing on the operations of Rimbunan Hijau. The allegations included logging without landowners' consent, gaining landowner 'consent' for logging at gunpoint, the rape of women working at logging camps, misappropriation of donor environmental aid money, and payments to police officers. It was also alleged that there had been corruption by top government officials in the granting of logging areas to stifle dissent.⁹⁷

Concord Pacific

Concord Pacific Ltd obtains logs entirely illegally, by clearing a huge area of forest along the Aiambak-Kiunga Road which it has built in Papua New Guinea's Western Province. The company disguises its large-scale logging operation with this so-called road-building project, on the basis of a Road Clearance Timber Authority which it was granted in 1994 with a complete disregard for forestry legislation. In issuing this Timber Authority, the then Forest Minister Tim Neville clearly exceeded his powers, yet it has subsequently been renewed by successive ministers, still in contravention of existing forestry laws.⁹⁸

The Papua New Guinea Forestry Review Team concluded that: "It is difficult to see the demand which would justify this type of road. Generally this project is seen as a thinly disguised method employed by a logging company to gain access to logs for export."⁹⁹ It recommended that: "If at all legally possible this project should be shut down and assets seized to reimburse landowners for loss of their standing crop."¹⁰⁰ In fact, the Papua New Guinea Forest Authority attempted to shut down the operation in late 1999, however the attempt failed in the courts. Concord Pacific's lawyer during this court case, Francis Damen, is now the attorney general of Papua New Guinea.¹⁰¹

In December 2001, the Center for Environmental Law and Community Rights Inc. (CELCOR) in Papua New Guinea lodged a complaint with the World Bank Inspection Panel, acting under instruction from over 300 landowners affected economically, socially, environmentally and culturally by the illegal logging along the road. They protested against the bad forest governance during the currency of the Bank's Governance Promotion Adjustment Loan to the Papua New Guinea government, and against the Bank's failure to adhere to its own policy and commitments on rainforest conservation.¹⁰²

"If at all legally possible this project should be shut down and assets seized to reimburse landowners for loss of their standing crop."
Papua New Guinea Forestry Review Team



Despite Concord Pacific's claimed objective of 'improving communications', the 'road' is already impassable in many areas; the World Bank independent review team stated in October 2001: "At no time since the purported issuance of the [logging permit] has any aspect of due process been observed."

Due to the difficulty of ensuring a stable supply of cheap South Sea hardwood, and partly due to the strong public protest against the production and consumption of hardwood concrete panel plywood since the beginning of the 1990s, the Japanese plywood industry has begun to switch to cheaper and supposedly 'renewable' softwood. However, this switch has simply spread the problem into Asian Russia.

At least 41.5% of the total plywood supply in Japan was of illegal origin.

The Japanese Plywood Manufacturers' Association is proud to report that the proportion of softwood in its total consumption of logs rose from 9% in 1993 to 45.8% in 2000. However, unsustainably and sometimes illegally sourced Russian logs, mostly Dahurian larch (*Larix gmelinii*), accounted for 76.4% of the total softwood used in that year.¹⁰³

The majority of plywood is used in the construction of houses, as disposable concrete moulds or as structural parts such as walls, floors and ceilings. Houses have an extremely short average lifespan of about 26 years in Japan.¹⁰⁴ This use therefore represents an enormous waste of ancient forest timber.

Japan has imported more and more plywood and the proportion of imports within the total hardwood plywood supply rose from 46% to 73% between 1993 and 2000.¹⁰⁵ Indonesia and Malaysia are the main suppliers, together accounting for 91% of total Japanese plywood imports (both hardwood and softwood) for 2000.¹⁰⁶

Greenpeace estimates that in 2000 at least 41.5% of the total plywood supply in Japan was of illegal origin. This calculation takes into account plywood imports from Indonesia and Malaysia, estimated domestic production volumes of hardwood and softwood plywood from Malaysian and Russian logs, and illegal logging rates in these countries (Indonesia 73%, Malaysia 35% and Asian Russia 20%). See Appendix 1 for more details.

5.2. Interior Lumber and Furniture

Ancient forest regions: **Asia Pacific, Asian Russia, Amazon, Africa**

Prized for the beauty of their wood, some species from Asia Pacific, Asian Russia, the Amazon and Africa are used as interior lumber (flooring, walls, doors, fixtures etc.) or in furniture, as solid wood or as sliced veneer to be laid over hardwood plywood. High international demand for these species has brought about severe and unsustainable selective exploitation, has prompted illegal and predatory logging, and has threatened many species with extinction (see BOX 3 for examples).

BOX 3

Ramin *Gonystylus* spp. (from Asia Pacific)

Fifteen species of the genus *Gonystylus* are listed as vulnerable in the IUCN Red List¹⁰⁷. Ramin trees are only found in Indonesia and Malaysia, but they are becoming increasingly rare in the latter country. In Indonesia, a huge amount of the remaining ramin has been illegally cut in protected areas, such as Tanjung Puting National Park in Central Kalimantan, where one of the world's last three viable populations of orangutans remains. The Environmental Investigation Agency (EIA) and Telapak Indonesia estimate that over 300,000m³ of illegally logged ramin was taken from the park each year in 1999 and 2000, then smuggled out to Malaysia or Singapore and exported 'legally' to the international market, including Japan.¹⁰⁸

Over 300,000m³ of illegally logged ramin was taken from the park each year in 1999 and 2000, then smuggled out to Malaysia or Singapore and exported 'legally' to the international market, including Japan.

In April 2001, the former Indonesian Minister of Forests issued a Ministerial Decree¹⁰⁹ placing a temporary moratorium on the cutting and grading of ramin. Later, ramin was listed in Appendix III of the Convention on International Trade in Endangered Species

(CITES) with a zero quota, except for stockpiles and a small quantity of timber certified to Forest Stewardship Council standards. However, the EIA and Telapak have documented ramin being smuggled into Malaysia since the CITES listing became effective on 6 August 2001.¹¹⁰

Korean pine *Pinus koraiensis* (from Asian Russia)

Korean pine was intensively logged in Asian Russia due to its high price in Japan. Since 1990, its 'final' logging has been prohibited in order to halt the decline of the species; however, there is no real control over its exploitation. In Russian legislation, logging is formally categorized into three types: 'final' logging is the main logging operation to remove trees for commercial purposes, 'intermediate' logging – such as thinning – aims to improve forest quality, and 'other' logging includes, for example, the removal of dead or highly infected forest and the clearing of forests for roads. The fact that only 'final' logging of Korean pine is prohibited, but not the other two types, serves as a loophole for the continued commercial logging of this species. In addition, illegal logging of Korean pine without any permit also occurs. Thus destructive selective logging continues because of the profitability of the export of this species to Japan.¹¹¹

Brazilian mahogany *Swietenia macrophylla* (from the Amazon)

This species has been intensively logged throughout its range. In the south of Brazil's Pará State, the largest remaining concentrations of mahogany are mainly found on or around Indian lands, which have been illegally exploited.¹¹² By the end of 1992, mahogany logging had extended into all 15 Indian lands in Pará State¹¹³ and it has continued since, sometimes on a massive scale. In July 2000, for example, just one investigation by a Greenpeace team exposed an estimated 20,000m3 of illegal mahogany logs from Kayapó land.¹¹⁴ Greenpeace discovered illegal operations in this location again in September 2001.¹¹⁵

Illegal mahogany has often been laundered through the fraudulent use of ATPF (Authorization for the Transport of Forest Products) documents at the initial stages of the supply chain, a widespread practice in Brazil.¹¹⁶ By the time it is shipped from the Amazon, the mahogany appears legal and its illegal origins are untraceable. Although the species is listed in Appendix III of CITES, the CITES certificate relies upon the ATPF documentation to indicate the origin of the mahogany. Thus CITES in effect legitimizes the illegal trade in Brazilian mahogany.

The mahogany business has also been linked to political corruption, money laundering, death threats and murder. Paulo Adario, Greenpeace's Amazon Campaign coordinator, received a death threat in October 2001, following Greenpeace's work the previous month exposing the extensive illegal logging of mahogany in lands belonging to the Kayapó Indians.¹¹⁷ Many incidents of violence have been documented, including the murders of Indians opposing the industry.¹¹⁸

Realizing the scale of the problem, in October 2001 the Brazilian government temporarily suspended all logging, transport and exports of mahogany, pending a full investigation into rampant illegalities in the industry.¹¹⁹ In early December following the investigation, the Brazilian government announced it would suspend all mahogany forest management plans in the Amazon and take measures to protect Indian lands and conservation areas. The Brazilian government excluded those mahogany management plans which are in the process of being independently certified as coming from well-managed forestry operations. In addition, the government made certification mandatory for all management plans which surround Indian lands and conservation areas.¹²⁰



The mahogany business has also been linked to political corruption, money laundering, death threats and murder.

Ramin used to be a popular species in Japan. A month after the CITES listing became active, ramin furniture, curtain rails, flooring, fixtures and mirror frames were still commonly found on the market and some manufacturers and traders were still unaware of the trade restriction. According to the Japanese Forest Products Journal,¹²¹ trading firms were considering switching their ramin source to Sarawak as one of their measures in response to the CITES listing. However, Malaysia should not be regarded as an 'alternative', because any ramin sold on the international market may be of illegal origin due to the smuggling between countries (see BOX 3). Concerned over the illegality of ramin at source, Lowes, the second largest home improvement company in the USA, stopped using it a year before the CITES listing.¹²²

Japan is also involved indirectly in the illegal and destructive logging of ancient forests through the purchase of finished forest products from intermediate countries. One example is furniture made of **Brazilian mahogany** (see BOX 3).

According to Greenpeace's investigation, 80% of mahogany exports from the state of Pará (which supplies the vast majority of Brazil's mahogany trade) is largely controlled by just two key players – Osmar Alves Ferreira and Moisés Carvalho Pereira, both of which are heavily involved in illegal chains of mahogany supply, some originating in Indian lands. Between February 2000 and August 2001,¹²³ these 'kingpins' sold Brazilian mahogany to **DLH Nordisk** (see BOX 4), which supplies the wood to many reputable US and UK furniture manufacturers, including Henredon Furniture Industries, Hickory Chair and Ethan Allen in the USA, and GT Rackstraw, Titchmarsh and Goodwin, Arthur Brett, and Charles Barr Furniture in the UK.¹²⁴

Greenpeace has confirmed that all of these manufacturers export mahogany furniture to Japan, and there is a strong possibility that Japanese consumers may unwittingly buy furniture made of illegally logged Brazilian mahogany. For example, the Ralph Lauren mahogany furniture line, also sold in Japan, uses more mahogany from Brazil (approximately 40%) than from anywhere else (the remainder is sourced from Bolivia and Peru).¹²⁵ Greenpeace has also confirmed that Rackstraw furniture, found at a shop in Tokyo, was made of Brazilian mahogany. Some mahogany furniture is made not of Brazilian mahogany, but of African mahogany (*Khaya* spp.), which comes from equally unsustainable sources – some species of African mahogany are listed in the IUCN Red List.

DLH Nordisk was also found to be trading Amazonian wood from one of the companies involved in illegal logging in the Amazon, **Madeiraira Santarém Ltda.** (see BOX 8, Chapter 5.4), to Japan, probably for interior or furniture purposes,¹²⁸ together with some Cameroonian logs. Most of the logs from Cameroon are first received at Nagoya port,¹²⁹ then distributed to manufacturers of interior fittings, furniture and plywood (see Chapter 5.1) and musical instruments (see Chapter 5.5) all over Japan. Some have been found to be imported from companies involved in illegal logging: **Société Forestière Hazim, Société d'Exploitation Forestière des Bois du Cameroun (SEBC)** and **Rougier** (see BOX 5).

BOX 4

DLH Nordisk

DLH Nordisk is one of the world's largest international timber traders and has been linked to forest crime in Central and West Africa and Brazil. For example, its trade links with Liberian logging companies implicated in arms trafficking were exposed by Greenpeace in July 2001.¹²⁶ It is also the largest trader of Brazilian mahogany in the international market, controlling up to 50% of the total trade.¹²⁷



Cameroonian government some of the largest logging companies in the region for illegal logging

BOX 5

Société Forestière Hazim

Société Forestière Hazim, a Lebanese logging company, is one of Cameroon's largest timber exporters. In 1998-1999, it held some 4% of the total concession area, making it the fifth largest concession holder in Cameroon,¹³⁰ but it also logs other concessions as a subcontractor.

Over the years, Hazim has developed a serious reputation for violating all kinds of forestry laws. In many areas its logging operations have created social conflict and environmental havoc. In consequence of Hazim's illegal activities the Cameroonian government has lost revenues well in excess of US\$8 million.¹³¹ As a result, in 2000 the company was excluded from participating in a public auction process, to prevent it from obtaining a new concession.¹³² However, it has still managed to control new forest concessions as a subcontractor.

Hazim is a striking example of the scale of illegal logging in Cameroon – unfortunately, however, it is only one of many examples. Between July 1999 and July 2000, numerous government reports made it clear that illegal logging is widespread in Cameroon and that numerous other companies are deeply involved in it.¹³³ One of them, **SEBC (Société d'Exploitation Forestière des Bois du Cameroun)**, part of the Vicwood-Thany Group) was found, along with Hazim, to be exporting logs to Japan. Additional Greenpeace research indicates that the French logging company **Rougier** is also involved in illegal logging activities¹³⁴ and sells logs to Japan.

Some Japanese manufacturers of interior lumber and furniture have processing factories in countries where rates of illegal logging are high (e.g. Asia Pacific countries or Brazil), and import the products to Japan. Among them, **Eidai do Brasil Madeiras SA**, owned by Eidai Co. Ltd. of Osaka, has attracted special attention for its extensive involvement in illegal activities and its role as the most significant link between illegal and destructive logging in the Amazon and the Japanese market. Between 16 February 2000 and 15 February 2001, it traded 67% of the total wood export volume from the Brazilian port of Belém to Japan (see BOX 6).¹³⁵

BOX 6

Eidai do Brasil Madeiras SA

On 11 July 2000, Eidai do Brasil received a record fine of about US\$1.88 million (3.4 million Brazilian Reals, equivalent to 200 million yen at the time) from Brazil's environmental agency IBAMA, for utilizing timber obtained illegally. Eidai was found to have been in violation of Brazilian forestry laws 108 times in total, in the 11 years up to 2000. On 12 July, after a number of Greenpeace actions against Eidai plywood imports at Kobe port, Japan, Eidai's Administrative Director made a commitment that the company would "no longer buy illegal logging".¹³⁶

It remains to be seen how the company will implement this public commitment. Eidai has appealed twice to the court to overturn the R3.4 million fine and has lost on both occasions. It is now appealing to the federal court, its final legal recourse against the fine. Eidai do Brasil is planning to produce some FSC-certified plywood, which will be available in mid-2002.¹³⁷

"The company Hazim should have its operating license revoked."

*Luc Durrieu de Madron,
World Bank consultant, 2000⁵*



*Mr Hazim receiving medal
from Minister Pius Ondoua*

5.3. Paper Products

Ancient forest regions: Asia Pacific, Asian Russia, Amazon, South America

Japanese production and consumption of paper has a significant impact on the world's forests because Japan is the only developed country which depends heavily on foreign resources for fibre material. In 2000, Japan imported 68.9% of the total global import of chips and particles, according to FAO data.¹³⁸ In the same year, 43.7% of the country's paper material was virgin pulp (the rest being recycled paper), of which 75% was of foreign origin (mainly imported chips, the rest imported pulp).¹³⁹

In 2000, Japan imported chips produced from destruction of natural forests in four of the regions discussed here – Russia, Indonesia (from natural mangrove forests), and Chile (souther beech wood chips exported by COMACO, Forestal del Sur, Forestal San Jose)¹⁴⁰ – some of which may also have come from illegal sources. Ancient forest chips accounted for 27% of the total chips imported from Chile in 2000.¹⁴¹ In the same year, Japan also imported a total of 2.5 million tonnes of pulp¹⁴² from Brazil, Chile, Indonesia and other countries.

Japan also imports paper – 1,106,000 tonnes was imported in 2000¹⁴³ and we estimate that around 25% of this was supplied by just one company: **Asia Pulp and Paper Co. Ltd. (APP)** (see BOX 7). “Japan is the most important market for APP”, according to APP Japan Limited.¹⁴⁴ Many Japanese companies have business and financial relationships with APP.¹⁴⁵ Indeed, one recent report argues that increasing APP's paper trade is the key to the economic recovery of other trading firms' paper pulp divisions.¹⁴⁶

BOX 7

Asia Pulp and Paper Co. Ltd. (APP)

APP has grown very rapidly, at the expense of a vast area of natural forest, to become the largest stationery producer in Asia outside Japan. With its headquarters in Singapore, it has 16 factories in Indonesia and China, including PT Indah Kiat Pulp and Paper Tbk, PT Pabrik Kertas Tjiwi Kimia Tbk, PT Pindo Deli Pulp and Paper Mills and Gold East Paper (Jiangsu) Co., Ltd.¹⁴⁷

Indah Kiat (in Indonesia), accounting for 77% of APP's total pulp production capacity (40% of Indonesia's overall pulp output), sourced about 80% of its logs in 1999 from clearcutting natural forests. It is estimated that the company's operations have accounted for roughly 287,000ha of deforestation between 1989 and 1999, equivalent to over one-third of the total natural forest area cleared for pulp production in Indonesia.¹⁴⁸

Although Indah Kiat has some access to plantations, it is estimated that by 2005 it will still be sourcing no more than 50% of its timber needs from these.¹⁴⁹ Currently facing a massive deficit, APP has to run its mills at close to full capacity to keep up with high finance costs, and its financial difficulties may disrupt the plantation programme even further.¹⁵⁰

APP has also been involved in social conflicts with indigenous peoples over its use of their forests in Riau, Indonesia and Sarawak, Malaysia. It was implicated in the massive fires of 1997/98 in Indonesia,¹⁵¹ and appears to have under-reported the forest stock of its concession in the Philippines to be able to log areas of well-stocked forest without declaring its logging activities.¹⁵²

An environmental audit accompanied by a “Preliminary Sustainable Wood Supply Assessment” (December 2001), which APP commissioned “in an effort to assuage concerns among environmentalists, customers and the financial community about its continued access to cheap wood supplies”,¹⁵³ only served to confirm the future unsustainability of the company's wood supply.¹⁵⁴ According to the Assessment, “around 70% of the Indah Kiat

Many Japanese companies have business and financial relationships with APP.

wood supply during the next five years will come from MTH (mixed tropical hardwood) forest [rainforests] according to current plans... Over the next 10 years a total of around 290,000ha of licensed tropical forest are proposed to be converted into sustainable plantations... The land SMG¹⁵⁵ wishes to convert contains natural forest and its clearance could be interpreted to undermine commitments made by the Government of Indonesia to the Consultative Group on Indonesia... Areas to be cleared are likely to include high conservation value forest.”

“Over the next 10 years a total of around 290,000ha of licensed tropical forest are proposed to be converted into sustainable plantations.”
Asia Pulp and Paper Co

Regarding the legality of APP's timber supplies, Friends of the Earth claims that “the audit was conducted very rapidly and that the checks on the legality of timber supplies were cursory at best. It is our firm view that only a longer term and fully independent study would be able to truly ascertain if any illegal timber is entering the APP mills.”¹⁵⁶

APP Japan says that it tries to deliver good quality paper and paper products through the “recycling of forests” rather than the recycling of paper. Its website announces: “Our products are all made of pulp from plantations under forest management”¹⁵⁷ – however (as explained in BOX 7) this is far from being the truth of the situation. In addition, considering the high rate of illegal logging in Indonesia (73%) and the involvement of the paper and pulp sector, it is natural to assume that APP paper is contaminated with some illegal logs.

By flooding the Japanese market with its cheap PPC (photocopy) paper via trading firms, mail order companies (catalogue houses) and volume retailers, APP has now achieved an almost 20% share of the PPC paper market in Japan,¹⁵⁸ selling 160,000 tonnes in 2000.¹⁵⁹ The company's EXCELPRO and WIDEPRO brand PPC paper can be found at many retail shops, sometimes together with its colour PPC paper (though the company's name does not appear on the package). According to Greenpeace's investigation, APP also sells its PPC paper to leading Japanese office supply companies and even to one of the leading paper manufacturers, to be sold under its own brand name (OEM, Original Equipment Manufacturer).

APP is now trying to expand Japanese sales of its SINAR brand printing paper, already used to print magazines, photography books, product catalogues, Karaoke song books, fliers and manuals for electrical equipment. APP sees an opportunity in areas where paper quality, not recycled content, has the most significance (e.g. for glossy magazines or photo books). In the second half of 2000, monthly sales of APP printing paper were between 11,000 and 13,000 tonnes.¹⁶⁰ APP also sells various other paper products in Japan, including inkjet paper, notebooks, packaging paper and paper bags.

5.4. Exterior Wood

Ancient forest regions: Asia Pacific, Amazon, Africa

Several species are used for exterior purposes, including decking and garden furniture, which have recently become very popular in Japan. Highly durable species from Asia Pacific, the Amazon and Africa are often advertised as “kind to the environment and people” in Japan, because they do not have to be chemically treated against insects or decay. However, there is a total lack of awareness about the devastating consequences of the exploitation of these trees in ancient forests.

From Asia Pacific, the following species are commonly imported to Japan: ulin, kwila (or merbau) and selangan batu (or bangkirai, balau). Ulin is another highly valued species from Indonesia and the Japanese environmental group JATAN (the Japan Tropical Forest Action Network) reports illegal logging of this species in Kalimantan.¹⁶¹ As one Japanese company

recently observed: “Ulin is not yet well known in Japan; however, the demand from public construction projects etc. is set to increase.”¹⁶²

Several Amazonian species could be used for wood decking, for example ipê, jatoba, purple heart and maçaranduba. Among them, ipê is most commonly found in Japan. Greenpeace has discovered that three companies heavily involved in illegal and destructive logging in the Brazilian Amazon have exported ipê and maçaranduba to Japan (see BOX 8).¹⁶³ Ipê was used for the decking in the Umihotaru service area in the middle of Tokyo Bay, built for the Tokyo Bay Aqua-Line. (Aqua-Line was a public enterprise mega-project of ¥1,440 billion, involving the Japan Highway Public Corporation, seven local public bodies and the private sector.)¹⁶⁴

Some African species are also used for wood deck. Greenpeace has discovered that 4,500m³ of azobé (also known as ekki or bongossi) from Cameroon was used to construct bridges, pontoons, piers and lockgates at the Holland Village near Nagasaki. Doussie (also known as afzelia) is another species used in Japan.

BOX 8

Madesa (Madeira Santaarém Ltda), Cemex Comercial Mad. Ltda. and Madeira Rancho da Cabocla Ltda.

In 1997 the Federal Prosecutor asked Greenpeace and IBAMA to investigate the 15 Forest Management Plans (FMPs) of nine logging companies in the Santarém region using data obtained from IBAMA, and extensive field research by a Greenpeace research team. The report noted various inconsistencies in the FMPs, and 14 of the 15 plans were not being followed. After the report was released, the Federal Prosecutor investigated Cemex & Madesa and found illegalities in their land titles. IBAMA investigated Rancho Da Cabocla & Curuatinga and also found illegalities.¹⁶⁵

In 2000, just five companies accounted for about 72% of total exports from Santarém.¹⁶⁶ Three of these companies – Madesa, Cemex and Rancho da Cabocla – were found to be obtaining wood by, for example, logging without following FMPs, logging in illegal FMPs which had been cancelled by the environmental agency IBAMA, or purchasing logs from ‘ghost companies’ which produce paperwork for wood that does not exist in order to conceal illegally logged wood. In the same year Madesa exported some wood for interior or furniture use (see Chapter 5.2).

In 2001, IBAMA took the following action:

Cemex – Three management plans, which amounted to 13,000ha in area, were cancelled.

Madesa – Three management plans were suspended due to irregularities in their FMPs and one more FMP was cancelled. The area amounted to 10,000ha.

Rancho Da Cabocla – Two management plans suspended, and one management plan cancelled.

5.5. Other Products

Ancient forest regions: Asia Pacific, Asian Russia, Amazon, Africa

Some musical instruments, notably guitars, are made using many ancient forest species, such as agathis, nyatoh, new jacaranda (Honduran rosewood), ovankol, kokutan, and even Brazilian mahogany (see BOX 3). A Greenpeace investigation found that the UK firm of Burns London, which is also well known in Japan, uses Brazilian mahogany for its guitars.¹⁶⁷ Large sized bubinga, from Central Africa, is used to make Japanese drums while makoré, listed as endangered by the IUCN Red List, is used to make pianos.

Other products made from ancient forest destruction include clocks (agathis, nyatoh, perupock, karin, sapele etc.), jewel boxes (nyatoh) and household Buddhist altars (nyatoh).



6. Greenpeace call for action

The world's remaining ancient forests will not be saved with words alone. Greenpeace is approaching governments worldwide, asking them to live up to their commitments to save the world's ancient forests and the plant, animal and human life that depends on them. But we also need companies and consumers to act their parts in ending their involvement in the trade in illegally and destructively logged wood.

In the run up to the United Nations' forthcoming Ancient Forest Summit, Earth Summit II and beyond, Greenpeace is urging governments of all importing countries to immediately stop their role in the destruction of world's ancient forests by committing to the following actions:

- **stop the destruction**

by stopping any further industrial activities in intact ancient forest until responsible plans for forest conservation and sustainable use have been agreed.

- **clean up the timber trade**

by ensuring that timber is produced and traded in a legal and ecologically responsible way; by refusing to trade with companies known to be operating illegally or destructively; and by demanding that all wood and wood products entering national ports must come from legal and well-managed forest operations according to high social and ecological standards.

- **come up with the money**

by providing at least US\$15 billion each year to pay for forest conservation and sustainable development.

Already, there is a real project applying this three-part plan to the protection of ancient forest ecosystems in Canada's Great Bear Rainforest (see BOX 9).

BOX 9

Victory in the Great Bear Rainforest – a Model of Success for the Convention on Biological Diversity

On 4 April 2001, a historic agreement was reached between environmental groups and logging companies, supported by many First Nations¹⁶⁹ as well as workers and coastal communities, to save the coastal rainforest on the West Coast of Canada. Known as the Great Bear Rainforest, this region had become one of the world's most renowned hotspots of environmental conflict.

As part of the agreement, the government of British Columbia announced the adoption of a new approach to conservation and environmentally responsible logging in the Great Bear Rainforest. The jubilant premier of the province, Ujjal Dosanjh, was on hand to endorse the framework agreement and went on to say that: "Today in British Columbia we have witnessed a truly historic day in the campaign to save the world's remaining ancient forests."

The model created through implementing the Great Bear agreement has begun to incorporate the three-part plan of Moratoria, Measures and Money that Greenpeace is advocating at the Ancient Forests Summit:

- **Moratoria** – these allow both ecological and economic options to be maintained for the future. Over 20 large pristine rainforest valleys, totalling 650,000ha, will be protected from logging and development, and a further 68 ancient rainforest valleys will have logging deferred for 12-24 months, to allow time for appropriate research and planning to be conducted.

"The Bush Administration is committed to helping advance forest law enforcement because it makes good business sense as well as environment and development policy... Let's go to work."

Patrick Cronin, Assistant Administrator for Policy and Resource Planning, U.S. Agency for International Development, 2001¹⁶⁸

"Today in British Columbia we have witnessed a truly historic day in the campaign to save the world's remaining ancient forests."

- **Measures** – mapping and additional scientific research have begun. Maintaining some level of independent analysis on the part of the scientific team will be critical to the credibility of the end product. The research will delineate some additional areas for protection, and define what constitutes ecologically responsible logging in other areas of this globally rare forest.
- **Money** – the sum required fully to implement a scientifically defensible conservation plan and to ensure the transitional needs of local communities has yet to be raised. The fund to help mitigate the impacts of the reduction in logging on local workers currently stands at Can\$35m. Much more funding will be required to complete the conservation process and ensure the rights of local communities are respected. This will not be an easy task, but in some ways it should be the easiest of the three tranches to address.

Logging companies, First Nations, environmental groups, workers, independent scientists and the government of British Columbia are all playing their part in developing the land-use plans that will protect the health of the forest and the economic future of local communities. All the elements for making the Great Bear Rainforest a true conservation success story are in place, and the potential for this model to serve as a template for application in other ancient forest ecosystems is immense.

6.1. What Can the Japanese Government Do?

In achieving these goals, we demand that the Japanese government play a key role at both the domestic and international levels. As Japan is one of the biggest importing countries of forest products, the Japanese government has a strong responsibility to clean up the international timber trade.

The Japanese government already recognizes the reality of its own role, and has in place domestic authorities for the regulation of imports. It now has a responsibility to regulate procurement policies and to exert pressure on industries that continue the trade in forest products deriving from the illegal and destructive logging of ancient forests.

6.2. What Can Japanese Companies Do?

"Timbmet is committed to sourcing all timber and timber products from sources that are legal all the way back to the forest. In order to avoid being in a difficult situation – with timber lying in our yard being possibly illegally cut – we would like the British government to strengthen their own timber purchasing policy." *Letter from UK timber company Timbmet to Michael Meacher MP, 2001*¹⁷¹

Japanese companies can play an important role by:

- demanding the Japanese government take tight regulatory measures against imports of illegally and destructively sourced wood and wood products;
- taking steps towards the use of products that derive from sustainable forest management, such as wood and wood products certified at least to the standards required by the FSC, or those deriving from domestic plantations in Japan.

Until recently it has been impossible for companies and consumers in Japan to identify products made of illegally and destructively logged timber. However, FSC certification now provides the only independent and credible way to trace the chain of custody from production to final consumption.

As Japan is one of the biggest importing countries of forest products, the Japanese government has a strong responsibility to clean up the international timber trade.

Japanese companies have long contributed to ancient forest destruction, as major consumers of the world's timber. It is clear that they need to start operating responsibly to save the world's remaining ancient forests, as well as for their own long-term benefit. On a positive note they have the opportunity, as the Great Bear Rainforest case suggests, to play a significant role in the fight against destructive logging.

6.3. What Can Consumers in Japan Do?

Japanese consumers hold enormous power as the single largest market for ancient rainforest products. They can use this influence to change the behaviour of companies and the government by:

- demanding that companies supply products deriving from sustainable forest management, such as wood and wood products certified at least to the standards required by the FSC, or those deriving from domestic plantations;
- purchasing, whenever possible, products deriving from such sustainable forest management;
- writing postcards or participating in cyber-campaigns (such as those conducted by Greenpeace) to demand that the Japanese government take tight regulating measures against imports of illegally and destructively sourced wood and wood products.

FSC certification now provides the only independent and credible way to trace the chain of custody from production to final consumption.

Appendix. How much of Japan's total plywood supply in 2000 came from illegal sources?

Three tables below show how estimated volumes of imported and domestically produced hardwood and softwood plywood made from illegal logs were calculated for the year 2000. To simplify the procedure, we assumed that plywood in Indonesia and Malaysia was made from domestic logs only, we used the figures of 73%, 35%, and 20% as illegal logging rates for Indonesia, Malaysia and Russia respectively, and we ignored the amount of compound plywood produced in Japan (which represented only 3.9% of the total supply). These assumptions led to a conservative estimate that $(2,642 + 425 + 183) / (4,927 + 1,696 + 1,200) = 41.5\%$ of the total plywood supply in Japan was of illegal origin in the year 2000.

Plywood Imported by Japan

Country of origin	Volume (1,000m3)	Illegal logging rate	Estimated volume from illegal logs (1,000m3)
Indonesia	2,765	73%	2,018
Malaysia	1,783	35%	624
Others	379	-	-
Total	4,927	-	2,642

Domestic production of hardwood plywood in Japan

Country of origin of logs	% of logs within the total South Sea log import	Estimate of plywood produced (1,000m3)	Illegal logging rate	Estimated volume from illegal logs (1,000m3)
Malaysia	71.6%	1,214	35%	425
Others	28.4%	482	-	-
Total	100.0%	1,696	-	425

Domestic production of softwood plywood in Japan

Country of origin of logs	% of logs within the total softwood log import	Estimate of plywood produced (1,000m3)	Illegal logging rate	Estimated volume from illegal logs (1,000m3)
Russia	76.4%	917	20%	183
Others	23.6%	283	-	-
Total	100.0%	1,200	-	183

Endnotes

- ¹ World Bank Group (2001a).
- ² UNEP (2001).
- ³ ITTO (2001d).
- ⁴ 'Ancient forests' are defined as the world's remaining forests which have been shaped largely by natural events and are little impacted by human activities. Large tracts of ancient forest – or 'frontier forests' – have been defined by the World Resources Institute (Bryant et al. 1997) as tracts of ancient forest which are large enough to sustain viable populations of all native plant and animal life.
- ⁵ Bryant et al. (1997). Commercial logging affects more than 70% of the world's threatened frontier forests.
- ⁶ Bryant et al. (1997).
- ⁷ A report by WWF and IUCN (1999) estimated that 65% of 200 high biodiversity areas surveyed around the world were threatened by illegal logging.
- ⁸ The figure for 1990-1999, from Forestry Agency, Japan (2001).
- ⁹ FAO website, FAOSTAT Forestry Database.
- ¹⁰ In this report, 'South America' refers mainly to the forests of Chile and some in Argentina (Chapter 4.5.).
- ¹¹ UN Commission on Sustainable Development (2000).
- ¹² ITTO (2001b).
- ¹³ CBD (2001a).
- ¹⁴ CBD (2001b).
- ¹⁵ Bryant et al. (1997).
- ¹⁶ Bryant et al. (1997).
- ¹⁷ Bryant et al. (1997).
- ¹⁸ G8 (1998).
- ¹⁹ Greenpeace International (2000b).
- ²⁰ G8 (2000).
- ²¹ East Asia Ministerial Conference on Forest Law Enforcement and Governance (2001).
- ²² ITTO (2001c).
- ²³ Japan Forest Products Journal (2001c).
- ²⁴ Forestry Agency, Japan (2001).
- ²⁵ Forestry Agency, Japan (2001).
- ²⁶ Forestry Agency, Japan (2001).
- ²⁷ Greenpeace Japan (2001a).
- ²⁸ Japan Forest Products Journal (2001c).
- ²⁹ Greenpeace Japan (2001b).
- ³⁰ FAO (2001).
- ³¹ Madron (2000), Milol and Pierre (2000).
- ³² Indonesia-UK Tropical Forest Management Programme (1999).
- ³³ Greenpeace Russia (2000).
- ³⁴ SAE (1997).
- ³⁵ ITTO (2001b).
- ³⁶ World Bank Group (2001b).
- ³⁷ Indonesia-UK Tropical Forest Management Programme (1999).
- ³⁸ Dudley et al. (1995).
- ³⁹ For examples, see Global Witness (1999), Aidwatch News (2000), South China Morning Post (2000), Acosta et al. (2000).
- ⁴⁰ For examples, see EIA and Telapak Indonesia (1999, 2001a, 2001b), Global Witness (2000), World Resources Institute (1998).
- ⁴¹ Bangkok Post (1997), EIA and Telapak Indonesia (2001b), Tropical Rainforest Programme (2000).
- ⁴² Barr (2000).
- ⁴³ Barr (2000).
- ⁴⁴ ITTO (2001b).
- ⁴⁵ Mataka (1999).
- ⁴⁶ ITTO (2001a), MOF Japan, Trade Statistics – Japan also imported 64.2% of the total sawnwood export by Indonesia.
- ⁴⁷ Marshall (2000), Papua New Guinea Forestry Review Team (2001a, 2001b).
- ⁴⁸ Bryant et al. (1997).
- ⁴⁹ Shimizu (1996).
- ⁵⁰ PNGFA and FIA (2001), MOF Japan, Trade Statistics.
- ⁵¹ Greenpeace Pacific (2001), SBS Television (2001), Papua New Guinea Forestry Review Team (2001a, 2001b).
- ⁵² Kukuyev (2001).
- ⁵³ Friends of the Earth Japan (2000), Bryant et al. (1997).
- ⁵⁴ Rosencranz and Scott (1992).
- ⁵⁵ Sheingauz (1998).
- ⁵⁶ Kakizawa (1999), BROCC, Friends of the Earth Japan and PERC (2000).
- ⁵⁷ Greenpeace Russia (2000).
- ⁵⁸ For examples of illegal logging, see Greenpeace Russia (2000, 2001), BROCC, Friends of the Earth Japan and PERC (2000).
- ⁵⁹ BBC Monitoring Former Soviet Union – Economic (2001).
- ⁶⁰ BBC Monitoring Former Soviet Union – Economic (2001).
- ⁶¹ Bryant et al. (1997).

- ⁶² BROCC, Friends of the Earth Japan and PERC (2000).
- ⁶³ MOF Japan, Trade Statistics.
- ⁶⁴ MOF Japan, Trade Statistics.
- ⁶⁵ MAFF Japan (2001a, 2001b).
- ⁶⁶ Mokuzai Kenzai Weekly (2001).
- ⁶⁷ Lere et al. (2000).
- ⁶⁸ Greenpeace International (2001e).
- ⁶⁹ Environmental News Service (2001).
- ⁷⁰ SAE (1997).
- ⁷¹ Greenpeace International (2001e).
- ⁷² Greenpeace International (1999a).
- ⁷³ Greenpeace Japan (2000a, 2000b), Greenpeace International (2001c, 2001f).
- ⁷⁴ CITES estimates that the export market accounts for 70% of the mahogany trade (CITES 2001).
- ⁷⁵ Greenpeace International (2001g).
- ⁷⁶ MOF Japan, Trade Statistics.
- ⁷⁷ BBC Online News (2001).
- ⁷⁸ GRASP website, Global Forest Watch (2000a).
- ⁷⁹ Greenpeace International (1999b).
- ⁸⁰ Achard et al. (1998).
- ⁸¹ Madron (2000), Milol and Pierre (2000).
- ⁸² Greenpeace International (2000c).
- ⁸³ Global Forest Watch (2000a).
- ⁸⁴ Global Forest Watch (2000a).
- ⁸⁵ Global Forest Watch (2000a).
- ⁸⁶ Defensores del Bosque Chileno (1997).
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- ⁸⁸ Cited in Foreign Agricultural Service/USDA (2001b).
- ⁸⁹ Langman (1998).
- ⁹⁰ Langman (1998).
- ⁹¹ Filer and Sekran (1998).
- ⁹² Foreign Agricultural Service/USDA (2001a).
- ⁹³ MAFF Japan (2001b).
- ⁹⁴ Forecast by Japan South Sea Lumber Conference, cited in Japan Forest Products Journal (2001d).
- ⁹⁵ IUCN (2000).
- ⁹⁶ EMW (1995), Filer and Sekran (1998).
- ⁹⁷ SBS Television (2001).
- ⁹⁸ Papua New Guinea Forestry Review Team (2001a, 2001b).
- ⁹⁹ Papua New Guinea Forestry Review Team (2001a).
- ¹⁰⁰ Papua New Guinea Forestry Review Team (2001a).
- ¹⁰¹ Brian Brunton, pers. comm.
- ¹⁰² Center for Environmental Law and Community Rights (2001).
- ¹⁰³ Tokyo Gohan Kogyo Kumiai and Tohoku Gohan Kogyo Kumiai (2001).
- ¹⁰⁴ MLIT Japan (1996).
- ¹⁰⁵ MOF Japan, Trade Statistics, Tokyo Gohan Kogyo Kumiai and Tohoku Gohan Kogyo Kumiai (2001).
- ¹⁰⁶ MOF Japan, Trade Statistics.
- ¹⁰⁷ IUCN (2000).
- ¹⁰⁸ EIA and Telapak Indonesia (1999, 2001b).
- ¹⁰⁹ Decree of the Ministry of Forestry No 168/Kpts-IV/2001 on the utilization of and trade in ramin.
- ¹¹⁰ EIA and Telapak Indonesia (2001b).
- ¹¹¹ Greenpeace Russia (2000), BROCC, Friends of the Earth Japan and PERC (2000).
- ¹¹² On paper, the Brazilian Constitution protects Indian lands from all industrial exploitation.
- ¹¹³ CEDI, unpublished report, and Heringer, unpublished report, cited in Verissimo et al. (1992).
- ¹¹⁴ Greenpeace International (2001g).
- ¹¹⁵ Greenpeace International (2001f).
- ¹¹⁶ SAE (1997).
- ¹¹⁷ Greenpeace International (2001f).
- ¹¹⁸ Watson (1996).
- ¹¹⁹ Greenpeace Japan (2001d).
- ¹²⁰ IBAMA (2001), Greenpeace Japan (2001e), Greenpeace International (2001i).
- ¹²¹ Japan Forest Products Journal (2001b).
- ¹²² Wall Street Journal (2000).
- ¹²³ IBAMA export data February 2000 to May 2001.
- ¹²⁴ Greenpeace International (2001g).
- ¹²⁵ Figure estimated by The Ralph Lauren Home Collection, Inc.'s licensee and manufacturer of this range, Henredon Furniture Industries.
- ¹²⁶ Greenpeace International (2001d).
- ¹²⁷ IBAMA data 2001 and DLH Nordisk Inc. (US), pers. comm.
- ¹²⁸ IBAMA export data (comprehensive, 16 February 2000-15 February 2001).
- ¹²⁹ MOF Japan, Trade Statistics (January to June 2001).
- ¹³⁰ Global Forest Watch (2000b).
- ¹³¹ Milol and Pierre (2000).
- ¹³² Cameroon Tribune (12 August 2000) cited in Greenpeace International (2000c).
- ¹³³ Greenpeace International (2000c).
- ¹³⁴ Greenpeace International (2000c).

- ¹³⁵ IBAMA export data.
- ¹³⁶ Greenpeace Japan (2000a, 2000b), Greenpeace International (2000a).
- ¹³⁷ Eidai Co. Ltd, pers. comm. to Greenpeace Japan.
- ¹³⁸ FAO website, FAOSTAT Forestry Database.
- ¹³⁹ JATAN homepage.
- ¹⁴⁰ Yano Research Institute (2001b-g).
- ¹⁴¹ Foreign Agricultural Service/USDA (2001b).
- ¹⁴² METI Japan (2001).
- ¹⁴³ Japan Paper Association (2001).
- ¹⁴⁴ APP Japan Limited (2001).
- ¹⁴⁵ For financial links, see for example Friends of the Earth (2001a).
- ¹⁴⁶ Yano Research Institute (2001a).
- ¹⁴⁷ APP Japan Limited website.
- ¹⁴⁸ Barr (2000)
- ¹⁴⁹ Barr (2000).
- ¹⁵⁰ Barr and Sayer (2001).
- ¹⁵¹ Friends of the Earth (2001a)
- ¹⁵² Business World (Philippines) (2001)
- ¹⁵³ Friends of the Earth (2001b).
- ¹⁵⁴ Webb (2001).
- ¹⁵⁵ Sinar Mas Group, which controls APP.
- ¹⁵⁶ Friends of the Earth (2001b).
- ¹⁵⁷ APP Japan Limited website: <http://www.app-j.com/products/products1.html>
- ¹⁵⁸ Nihon Keizai Shimbun (2001).
- ¹⁵⁹ APP Japan Limited (2001).
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- ¹⁶¹ JATAN (2001).
- ¹⁶² Japan Forest Products Journal (2001e).
- ¹⁶³ IBAMA export data (comprehensive, 16 February 2000-15 February 2001) & Piers Data.
- ¹⁶⁴ <http://www.nihon-mokuso.co.jp/eigyou01.html>
- ¹⁶⁵ Greenpeace International (2001g).
- ¹⁶⁶ Santarém is in Pará State in the eastern Amazon.
- ¹⁶⁷ Greenpeace International (2001g).
- ¹⁶⁸ World Bank Group (2001b).
- ¹⁶⁹ The BC government has also acknowledged that First Nations in the area are entitled to a stronger role in decision-making over what occurs on their traditional territories, which will inevitably result in a stronger land-use planning process.
- ¹⁷⁰ Greenpeace Japan (2001c), Greenpeace International (2001a).
- ¹⁷¹ A copy of the letter was sent to Greenpeace UK.
- ¹⁷² Tokyo Gohan Kogyo Kumiai and Tohoku Gohan Kogyo Kumiai (2001).
- ¹⁷³ Import figures by JLIA, cited in Japan Forest Products Journal (2001a), were used to obtain these figures. To simplify the calculation, the import volume of non-South Sea hardwood (in any case very small) was ignored, and we assumed all South Sea logs to be hardwood.
- ¹⁷⁴ Tokyo Gohan Kogyo Kumiai and Tohoku Gohan Kogyo Kumiai (2001).
- ¹⁷⁵ Tokyo Gohan Kogyo Kumiai and Tohoku Gohan Kogyo Kumiai (2001).
- ¹⁷⁶ Tokyo Gohan Kogyo Kumiai and Tohoku Gohan Kogyo Kumiai (2001).

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