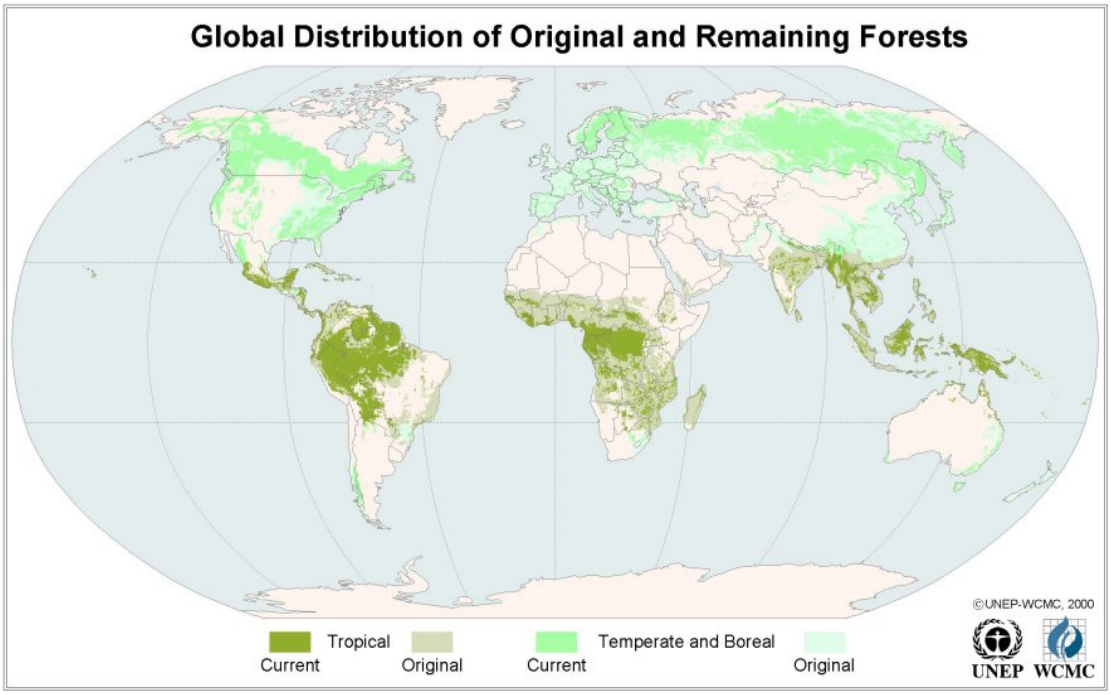
http://www.illegal-logging.info/item_single.php?item=document&item_id=21&approach_id=26

Deforestation, the timber trade and illegal logging



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Summary

A conservative estimate of deforestation, compiled by the FAO, suggests global forests are disappearing at a rate of 0.2% per annum – a rate of change that throughout the 1990s resulted in the loss of 9.4m hectares of forest (including plantations), and 12.5m hectares of natural forest every year.

Four key regions – Tropical South America, Russia, Central Africa and Southeast Asia – account for 60% of the world's remaining forests. Four countries within these regions – Russia, Brazil, Indonesia and the Democratic Republic of the Congo – hold over 40% of the world's remaining forests. These same countries account for roughly the same proportion of forest lost throughout the 1990s.

The trade in timber and timber products, as a driving force behind commercial forest exploitation, is a major cause of deforestation. The pattern of trade is generally (although not exclusively) characterised by a flow of wood and wood products from less-developed and transitional producer countries, to industrialised (and industrialising) consumer countries. The European Union accounted for 25-50% of global imports for several important timber products in 2000.

A large, though unquantified proportion of timber entering the global trade comes from illegal harvesting operations. There is thus a strong probability that large volumes of timber entering the European market comes from illegal sources. It is important to curb the trade in illegal timber, since it damages the reputation of the legitimate trade, is an important cause of the rapid forest loss witnessed in the 1990s, and is undermining governance and the rule of law in producer countries. Curbing this illegal trade will require use of instruments including customs and trade policy, supported by systems to certify and verify the legality of timber, and complemented by support, where needed, to producer countries.

Overview of deforestation

The World Conservation Monitoring Centre (WCMC), a division of the United Nations Environment Programme, estimates that half of the forest which existed from the end of the last ice age to the expansion of humankind around 8,000 years ago has now disappeared, largely as the result of human activities (see cover picture).

In the year 2000 the Food and Agriculture Organisation of the United Nations (FAO) estimate that forests covered 3.8bn hectares – a figure just short of 30% of the earth's total land area. In 1990 the corresponding FAO estimate for forest area was 3.9bn hectares, meaning that in the intervening decade nearly 100m hectares of forest was lost, a rate equivalent to over –0.2% per annum (see Appendix 1 for a full summary).

Forest loss, 1990-2000
000 ha unless otherwise stated

	Total forest 1990	Total forest 2000	Annual change, 1990-2000	Annual change (%)
Global total	3,963,429	3,869,455	-9,391	-0.22

Source: FAO 2001

This aggregate figure is a net estimate of both forest loss and forest gain. Aggregating the data in this way can hide large losses in one region or type of forest, which are offset by gains in other regions or types of forest, particularly plantations.

Plantations expanded annually by 3.1m hectares during the period 1990-2000, a substantial increase which in the aggregate figures offsets a greater loss in natural forest. Removing plantations from the aggregate figures reveals a loss of natural forest running to approximately 12.5m hectares every year.

The aggregate figures also mask changes across regions. In the tropics there was an overall annual loss of –15.2m hectares of natural forest, offset by 1m hectares in annual regeneration. Net loss of natural tropical forest was thus in the region of –14.2m hectares every year throughout the 1990s. In contrast, in the non-tropical zone, regeneration of natural forest exceeded losses, leading to a net gain of 1.7m hectares of natural forest every year throughout the 1990s. Taking tropical and non-tropical forest together, there was an annual loss of –12.5m hectares of natural forest over the period in question.

Natural forest loss, 1990-2000
million hectares per year

Region	Natural forest			Forest plantations	Total forest loss
	Loss	Gains	Net change	Net change	Net change
Tropical	-15.2	1.0	-14.2	1.9	-12.3
Non-tropical	-0.9	2.6	1.7	1.2	2.9
Global	-16.1	3.6	-12.5	3.1	-9.4

Source: FAO 2001

Key regions

There are four key regions which together contain nearly 60% of the world's forest – Tropical South America, Southeast Asia, Russia and Central Africa. Within these regions there are only four countries – three tropical and one temperate – which account for around 42% of the world's remaining forests: Russia, Brazil, the Democratic Republic of the Congo and Indonesia.

Tropical South America

Tropical South America holds over 21% of the world's forests, and nearly 45% of the world's tropical forests. Within this region a single country, Brazil, contains nearly 30% of the world's remaining tropical forest. Throughout the 1990s Brazil lost forest at the rate of 2.3m hectares (-0.4%) per annum, a rate which was broadly in line with the rate of deforestation elsewhere in the region. The FAO report that Brazil produced 103m cubic metres of industrial roundwood in 2000.

Forest loss, tropical South America 1990-2000
000 ha unless otherwise stated

Region	Land area	Total forest 1990	Total forest 2000	Annual change, 1990-2000	Annual change (%)	Forest as % of land area, 2000
South America	1,754,741	922,731	885,618	-3,711	-0.4	50
of which						
Tropical	1,387,493	868,702	834,142	-3,456	-0.4	60
of which						
Brazil	845,651	566,998	543,905	-2,309	-0.4	64

Source: FAO 2001

Russia

In 2000 the FAO estimate that Russia had over 850m hectares of forest, equivalent to 22% of the global total, and 43% of all remaining temperate forests. Throughout the 1990s forest area in Russia remained stable, according to FAO figures. The FAO report that Russia produced 105.8m cubic metres of industrial roundwood in 2000.

Forest loss, Russia 1990-2000
000 ha unless otherwise stated

Region	Land area	Total forest 1990	Total forest 2000	Annual change, 1990-2000	Annual change (%)	Forest as % of land area, 2000
Russia	1,688,851	850,039	851,392	135	0.0	50

Source: FAO 2001

Central Africa

Central Africa accounts for 8% of the world's forests, and 16% of the world's remaining tropical forests. Within this region the most significant forest resources are found within the Democratic Republic of the Congo, which has forests covering 135m hectares – over 7% of the world's tropical forests. The FAO report that the Democratic Republic of the Congo produced 3.7m cubic metres of industrial roundwood in 2000.

Forest loss, Central Africa 1990-2000
000 ha unless otherwise stated

Region	Land area	Total forest 1990	Total forest 2000	Annual change, 1990-2000	Annual change (%)	Forest as % of land area, 2000
Central Africa	722,331	329,980	310,968	-1,901	-0.6	43
of which						
D.R. Congo	226,705	140,531	135,207	-532	-0.6	60

Source: FAO 2001

Southeast Asia

Southeast Asia contains over 10% of the world's tropical forests. Indonesia contains around half of the forests in this region. The region is densely populated, and as a result the annual rates of deforestation in both Southeast Asia and Indonesia, at –1% and –1.2% respectively, are relatively high. The FAO report that Indonesia produced 31.4m cubic metres of industrial roundwood in 2000.

Forest loss, Southeast Asia 1990-2000
000 ha unless otherwise stated

Region	Land area	Total forest 1990	Total forest 2000	Annual forest cover change 1990-2000	Annual change rate (%)	Forest as % of land area, 2000
Southeast Asia	436,022	235,203	211,914	-2,328	-1.0	49
of which						
Indonesia	181,157	118,110	104,986	-1,312	-1.2	58

Source: FAO 2001

A critique

The FAO provide the most comprehensive assessment of global forest resources available today. However, there are some acknowledged problems which suggest that in fact the rate of forest loss could be considerably higher.

First there is an issue with the quality of data available for the assessment. The FAO relies on data from national forest inventories to compile its global estimates. The World Resources Institute (WRI) points out that the quality of data available through these national forest inventories is highly variable, and often very out of date (Matthews, 2001). Rapid and recent loss of forest is often not picked up as a result.

There is also an issue regarding the definition of what forest is. The FAO now uses a combination of land classification and land use criteria, with a standard measure of 10% canopy cover used to define forest. This is important, as it allows comparison across different regions and different types of forest. However, in dry subtropical and boreal zones forests with 10-20% canopy cover lie across substantial areas. Much of these areas would be more commonly referred to as tundra and savannah.

Accounting for the net change in forest – losses offset by regeneration, and the replacement of natural forest with plantations – also presents difficulties. Matthews (2001) points out that the FAO does not provide data to perform this task down to country level, which prevents the identification of countries facing the most rapid losses of natural forest.

This is of little consequence in the tropics (with the possible exception of Southeast Asia), where in 1990 plantation development was in a nascent state. However, it is of consequence in temperate climates, where plantations are widespread. There is thus a great degree of uncertainty in the FAO's estimates, which are very conservative. Deforestation, particularly loss of natural forest, could thus be very much higher than suggested.

Not only a domestic problem

Deforestation is driven by a range of factors including growth in local human populations, local environmental factors, and domestic government policies for agriculture and land use. Also prominent among the causes of deforestation are the commercial exploitation of forests for timber, and the international demand for wood products. It is through trade, and the demand for wood products in consuming countries, that the issue of forest loss becomes a question of inter-regional and international policy.

Trade is a powerful driving force behind both the legal and illegal exploitation of forests around the globe. Trade is by no means driven solely by western consumption. Many emerging market economies are the among the largest consumers of wood products. China is the largest importer of tropical timber and non-coniferous sawnwood, and is also a major importer of plywood. India and Korea are also large importers of certain wood products (Appendix 2).

But developed countries do play a dominant role in the trade. Japan is the world's largest importer of plywood, and a major importer of both tropical timber and non-coniferous sawnwood. The United States, France, Belgium, Spain, Italy, Germany, and the United Kingdom are also important consumers of wood products (Appendix 2). Taken as a whole, the European Union accounts for anywhere between 25-50% of global imports for the indicative products set out below.

Selected wood product imports, 2000[1]

	Industrial roundwood	Tropical roundwood	Non-coniferous sawnwood	Plywood	Pulp	Paper
	000 cum	000 cum	000 cum	000 cum	000 mt	000 mt
European Union						
Austria	8,464	190	356	148	603	1,403
Belgium	4,248	380	828	507	1,082	3,327
Denmark	467	6	123	243	52	1,163
Finland	9,875		78	33	143	356
France	2,152	780	842	365	2,387	6,162
Germany	3,256	161	771	1,105	3,996	9,630
Greece	286	75	307	15	137	572
Holland	424	87	1,052	558	975	3,067
Ireland	113	20	157	124	33	439
Italy	5,805	314	2,076	422	3,193	4,425
Luxembourg	890	4	20	8		81
Portugal	1,310	158	556	29	93	556
Spain	7,515	1,307	1,323	305	621	3,259
Sweden	11,720	2	149	184	306	730
United Kingdom	289	65	655	1,041	1,907	6,421
Total EU	56,814	3,549	9,293	5,087	15,528	41,591
Other						
United States	1,511	2	1,682	2,435	6,612	16,282
Japan	15,948	3,141	1,145	5,033	3,088	1,647
China	15,532	7,962	4,533	2,786	4,031	10,448
World total	116,822	20,443	25,332	19,775	37,737	98,453
EU as % of world total	48.6	17.4	36.7	25.7	41.1	42.2

[1] Figures include intra-EU trade
Source: FAO (2002)

Trade, governance and the illegal economy

There is growing evidence to suggest that a large amount of timber traded on the world market is harvested illegally. While there are no comprehensive estimates of the full extent of illegal logging, a range of recent country studies suggest the problem is substantial.

Industrial roundwood production and illegal logging in select producer countries

	Ind. roundwood production, 2000	Estimated illegal harvest[1]
	m cum	as % of total prod.
Russia	105.8	20%
Brazil	103	80%
Indonesia	31.4	73%
D.R. Congo	3.7	n.a

[1] Estimates are for a variety of years and do not refer to 2000 roundwood prod., which is the reported legal harvest.
Source: FAO (2002); Greenpeace (2000); Brazilian Secretariat for Strategic Affairs (1997); ITFMP (1999).

Although quantifying the illegal trade is by its nature very hard, the problem of illegal logging has reached proportions where in producer countries it has now in places started to undermine the rule of law. It encourages corruption, social conflict and the inefficient use of resources, and is resulting in the loss of enormous potential government revenues. It is thus a direct threat to the broader international development goals shared by developed and developing countries alike.

The volumes of illegal timber entering the global trade, and the current difficulties of distinguishing legal timber from illegal, make it impossible for consuming countries to verify that imported wood products are not made from illegally harvested timber, or that the trade in wood and wood products – tropical and temperate alike – is not contributing directly to deforestation and undermining good governance and the rule of law in producer countries. Furthermore, the illegal trade both damages the reputation and threatens the sustainability of the legitimate timber trade.

It is thus important to stem the flow of illegal timber onto the world market. Many inititives to this end have been developed in producer countries, and it is vital to support and complement this work with efforts to curb the demand-side drivers of illegal forest exploitation. This will require a concerted and co-ordinated effort, using instruments including customs and trade policy, supported by systems to certify and verify the legality of timber, and complemented by support, where needed, to producer countries. This workshop provides an ideal opportunity to start building the co-operation necessary to tackle this challenge.

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Appendix 1

FAO Global Forest Assessment 2000, summary table

Region	Land area 000 ha	Total forest 1990 000 ha	Total forest 2000 000 ha	Annual forest cover change 1990-2000 000 ha	Annual change rate %	Forest as % of land area, 2000 %
Africa	2,978,394	702,502	649,866	-5,262	-0.8	22
of which						
Central Africa	722,331	329,980	310,968	-1,901	-0.6	43
of which						
Dem. Rep. of the Congo	226,705	140,531	135,207	-532	-0.4	59.6
Asia	3,084,746	551,448	547,793	-364	-0.1	18
of which						
Southeast Asia	436,022	235,203	211,914	-2,328	-1.0	49
of which						
Indonesia	181,157	118,110	104,986	-1,312	-1.2	58
Oceania	849,096	201,271	197,623	-365	-0.2	23
Europe	2,259,957	1,030,475	1,039,251	881	0.1	46
of which						
Russia	1,688,851	850,039	851,392	135	0.0	50
North America & Caribbean	1,837,992	466,684	470,564	388	0.1	26
of which						
Canada	922,097	244,571	244,571	0	0.0	27
Central America	298,974	88,318	78,740	-958	-1.1	43
South America	1,754,741	922,731	885,618	-3,711	-0.4	50
of which						
Tropical	1,387,493	868,702	834,142	-3,456	-0.4	60
of which						
Brazil	845,651	566,998	543,905	-2,309	-0.4	64
Total	13,063,900	3,963,429	3,869,455	-9,391	-0.2	30
Memorandum items						
Tropical	4,868,495	1,993,472	1,870,902	-12,257	-0.6	38
Non-tropical	8,195,405	1,969,957	1,998,553	2,860	0.1	24
Total	13,063,900	3,963,429	3,869,455	-9,397	-0.2	30

Source: FAO Global Forest Resource Assessment 2000

Appendix 2

Bilateral trade matrices for selected, indicative wood products

These bilateral matrices show the extent of trade in selected, indicative wood products from major exporters to major importers. With one or two exceptions, trade generally flows from less-developed and transitional producer countries to richer consuming countries, consisting of the industrialised nations and the major emerging economies of the world. The USA, Canada and Finland, as forest-rich countries are exceptions to this pattern.

Industrial roundwood in the rough, tropical non-coniferous
000 cum

Major exporters → / Major importers ↓	Malaysia	Gabon	Papua New Guinea	Myanmar	Cameroon	Congo Rep	Eq. Guinea	Indonesia
China	3029	1319	454	64	60	31	299	60
Japan	2236	25	943	3	18	1	12	56
India	840	.	.	650	.	.	.	.
France	0	521	0	9	168	107	51	.
Korea	350	14	583	0	1	0	.	0
Belgium	0	4	.	1	13	2	.	0
Spain	.	24	.	0	108	90	42	0
Portugal	.	110	.	.	142	111	11	.

Source: FAO (2002)

Sawnwood, non-coniferous
000 cum

Major exporters → / Major importers ↓	USA	Malaysia	Canada	Brazil	France	Indonesia
China	381	619	19	38	55	27
Italy	135	29	31	19	24	8
USA	.	43	716	99	2	31
Germany	71	47	105	3	77	1
Canada	716	.	.	13	0	0
Japan	139	316	15	15	1	55

Source: FAO (2002)

Plywood
000 cum

Major exporters → / Major importers ↓	Indonesia	Malaysia	Brazil	Canada	Finland	Russian Fed
Japan	2789	1662	15	230	3	8
USA	821	461	262	625	30	235
China	973	479	0	3	4	1
Germany	115	12	155	13	208	58
UK	225	109	233	22	73	171
Korea	403	174	1	1	7	.

Source: FAO (2002)