

*Chapter 11*

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# Forests and Land Cover

Data Table 11.1

## Forest Cover and Change, and Forest Industry Structure, 1980–95

Sources: Food and Agriculture Organization of the United Nations and International Tropical Timber Organization

	Forest Area										Forest Industry Structure (b)		
	Total Forest			Natural Forest				Plantations (a)			No. of Enterprises 1995	No. of Employees 1995	
	Extent 1980 (000 ha)	Extent 1990 (000 ha)	Extent 1995 (000 ha)	Average Annual Percent Change		Extent 1990 (000 ha)	Extent 1995 (000 ha)	Average Annual Percent Change		Extent 1990 (000 ha)			Average Annual % Change 1980-90
				1980-90	1990-95			1980-90	1990-95				
<b>WORLD (c)</b>	X	3,510,728	3,454,382	X	(0.3)	X	X	X	X	X	X	X	
<b>AFRICA</b>	585,858	538,978	520,237	(0.8)	(0.7)	534,226	515,455	(0.9)	(0.7)	4,416	4	1,438	175,718
Algeria	2,236	1,978	1,861	(1.2)	(1.2)	1,493	1,376	(2.6)	(1.6)	485	5	X	X
Angola	24,922	23,385	22,200	(0.6)	(1.0)	23,265	22,080	(0.6)	(1.0)	120	1	X	X
Benin	5,652	4,923	4,625	(1.4)	(1.2)	4,909	4,611	(1.4)	(1.3)	14	5	X	X
Botswana	15,030	14,271	13,917	(0.5)	(0.5)	14,270	13,916	(0.5)	(0.5)	1	0	X	X
Burkina Faso	4,744	4,431	4,271	(0.7)	(0.7)	4,411	4,251	(0.7)	(0.7)	20	8	X	X
Burundi	260	324	317	2.2	(0.4)	232	225	(0.6)	(0.6)	92	19	X	X
Cameroon	21,573	20,244	19,598	(0.6)	(0.6)	20,228	19,582	(0.6)	(0.6)	16	14	414	19,235
Central African Rep	31,854	30,571	29,930	(0.4)	(0.4)	30,565	29,924	(0.4)	(0.4)	6	48	X	X
Chad	12,322	11,496	11,025	(0.7)	(0.8)	11,492	11,021	(0.7)	(0.8)	4	6	X	X
Congo, Dem Rep	120,613	112,946	109,245	(0.7)	(0.7)	112,904	109,203	(0.7)	(0.7)	42	10	X	25,000 d
Congo, Rep	20,200	19,745	19,537	(0.2)	(0.2)	19,708	19,500	(0.2)	(0.2)	37	12	X	6,000 d
Côte d'Ivoire	12,128	5,623	5,469	(7.7)	(0.6)	5,560	5,403	(7.8)	(0.6)	63	7	276	14,000
Egypt	28	34	34	1.8	0.0	0	0	0.0	0.0	34	2	X	X
Equatorial Guinea	1,899	1,829	1,781	(0.4)	(0.5)	1,826	1,778	(0.4)	(0.5)	3	0	X	X
Eritrea	X	282	282	X	0.0	233	233	X	0.0	X	X	X	X
Ethiopia (e)	14,621	13,891	13,579	X	(0.5)	13,751	13,439	X	(0.5)	189	10	X	X
Gabon	19,411	18,314	17,859	(0.6)	(0.5)	18,293	17,838	(0.6)	(0.5)	21	5	330	29,938
Gambia, The	106	95	91	(1.1)	(0.9)	94	90	(1.1)	(0.9)	1	0	X	X
Ghana	10,973	9,608	9,022	(1.3)	(1.3)	9,555	8,969	(1.3)	(1.3)	53	2	411	79,500
Guinea	7,561	6,741	6,367	(1.1)	(1.1)	6,737	6,363	(1.2)	(1.1)	4	5	X	X
Guinea-Bissau	2,181	2,361	2,309	0.8	(0.4)	2,360	2,308	0.8	(0.4)	1	0	X	X
Kenya	1,358	1,309	1,292	(0.4)	(0.3)	1,191	1,174	(0.5)	(0.3)	118	1	X	X
Lesotho	1	6	6	14.6	0.0	0	0	0.0	0.0	7	16	X	X
Liberia	4,892	4,641	4,507	(0.5)	(0.6)	4,635	4,501	(0.5)	(0.6)	6	1	5	2,000 d
Libya	290	400	400	3.2	0.0	190	190	0.0	0.0	210	7	X	X
Madagascar	17,314	15,756	15,106	(0.9)	(0.8)	15,539	14,889	(1.0)	(0.9)	217	2	X	X
Malawi	4,067	3,612	3,339	(1.2)	(1.6)	3,486	3,213	(1.4)	(1.6)	126	8	X	X
Mali	13,208	12,154	11,585	(0.8)	(1.0)	12,140	11,571	(0.8)	(1.0)	14	27	X	X
Mauritania	554	556	556	0.0	0.0	554	554	0.0	0.0	2	24	X	X
Mauritius	11	12	12	1.2	0.0	3	3	(0.7)	1.4	9	2	X	X
Morocco	4,032	3,894	3,835	(0.3)	(0.3)	3,573	3,514	(0.6)	(0.3)	321	4	X	X
Mozambique	18,701	17,443	16,862	(0.7)	(0.7)	17,415	16,834	(0.7)	(0.7)	28	4	X	X
Namibia	13,000	12,584	12,374	(0.3)	(0.3)	12,584	12,374	(0.3)	(0.3)	0	0	X	X
Niger	2,554	2,562	2,562	0.0	0.0	2,550	2,550	0.0	0.0	12	10	X	X
Nigeria	16,935	14,387	13,780	(1.6)	(0.9)	14,236	13,629	(1.7)	(0.9)	151	3	X	X
Rwanda	213	252	250	1.7	(0.2)	164	162	(0.2)	(0.2)	88	7	X	X
Senegal	8,072	7,629	7,381	(0.6)	(0.7)	7,517	7,269	(0.7)	(0.7)	112	25	X	X
Sierra Leone	2,015	1,522	1,309	(2.8)	(3.0)	1,516	1,303	(2.8)	(3.0)	6	3	X	X
Somalia	786	760	754	(0.3)	(0.2)	756	750	(0.3)	(0.2)	4	0	X	X
South Africa	8,682	8,574	8,499	(0.1)	(0.2)	7,279	7,204	(0.8)	(0.2)	965	2	X	X
Sudan	47,909	43,376	41,613	(1.0)	(0.8)	43,173	41,410	(1.0)	(0.8)	203	6	X	X
Swaziland	145	146	146	0.0	0.0	74	74	0.0	0.0	72	0	X	X
Tanzania	38,004	34,123	32,510	(1.1)	(1.0)	33,969	32,356	(1.1)	(1.0)	154	8	X	X
Togo	1,576	1,338	1,245	(1.6)	(1.4)	1,317	1,224	(1.8)	(1.5)	17	12	2	45
Tunisia	521	570	555	0.9	(0.5)	369	354	(1.6)	(0.8)	201	8	X	X
Uganda	7,011	6,400	6,104	(0.9)	(0.9)	6,380	6,084	(0.9)	(1.0)	20	0	X	X
Zambia	35,958	32,720	31,398	(0.9)	(0.8)	32,677	31,355	(0.9)	(0.8)	48	6	X	X
Zimbabwe	9,576	8,960	8,710	(0.7)	(0.6)	8,876	8,626	(0.7)	(0.6)	84	2	X	X
<b>EUROPE</b>	X	144,044	145,988	X	0.3	X	X	X	X	X	X	X	X
Albania	X	1,046	1,046	X	0.0	X	X	X	X	X	X	X	X
Austria	X	3,877	3,877	X	0.0	X	X	X	X	X	X	X	X
Belarus, Rep	X	7,028	7,372	X	1.0	X	X	X	X	X	X	X	X
Belgium (f)	X	709	709	X	0.0	X	X	X	X	X	X	X	X
Bosnia and Herzegovina	X	2,710	2,710	X	0.0	X	X	X	X	X	X	X	X
Bulgaria	X	3,237	3,240	X	0.0	X	X	X	X	X	X	X	X
Croatia, Rep	X	1,825	1,825	X	0.0	X	X	X	X	X	X	X	X
Czech Rep	X	2,629	2,630	X	0.0	X	X	X	X	X	X	X	X
Denmark	X	417	417	X	0.0	X	X	X	X	X	X	X	X
Estonia, Rep	X	1,913	2,011	X	1.0	X	X	X	X	X	X	X	X
Finland	X	20,112	20,029	X	(0.1)	X	X	X	X	X	X	X	X
France	X	14,230	15,034	X	1.1	X	X	X	X	X	X	X	X
Germany	X	10,740	10,740	X	0.0	X	X	X	X	X	X	X	X
Greece	X	5,809	6,513	X	2.3	X	X	X	X	X	X	X	X
Hungary	X	1,675	1,719	X	0.5	X	X	X	X	X	X	X	X
Iceland	X	11	11	X	0.0	X	X	X	X	X	X	X	X
Ireland	X	500	570	X	2.6	X	X	X	X	X	X	X	X
Italy	X	6,467	6,496	X	0.1	X	X	X	X	X	X	X	X
Latvia, Rep	X	2,757	2,882	X	0.9	X	X	X	X	X	X	X	X
Lithuania, Rep	X	1,920	1,976	X	0.6	X	X	X	X	X	X	X	X
Macedonia, FYR	X	989	988	X	(0.0)	X	X	X	X	X	X	X	X
Moldova, Rep	X	357	357	X	0.0	X	X	X	X	X	X	X	X
Netherlands	X	334	334	X	0.0	X	X	X	X	X	X	X	X
Norway	X	7,938	8,073	X	0.3	X	X	X	X	X	X	X	X
Poland, Rep	X	8,672	8,732	X	0.1	X	X	X	X	X	X	X	X
Portugal	X	2,755	2,875	X	0.9	X	X	X	X	X	X	X	X
Romania	X	6,252	6,246	X	(0.0)	X	X	X	X	X	X	X	X
Russian Federation	X	763,500	763,500	X	0.0	X	X	X	X	X	X	X	X
Slovak Rep	X	1,977	1,989	X	0.1	X	X	X	X	X	X	X	X
Slovenia, Rep	X	1,077	1,077	X	0.0	X	X	X	X	X	X	X	X
Spain	X	8,388	8,388	X	0.0	X	X	X	X	X	X	X	X
Sweden	X	24,437	24,425	X	(0.0)	X	X	X	X	X	X	X	X
Switzerland	X	1,130	1,130	X	0.0	X	X	X	X	X	X	X	X
Ukraine	X	9,213	9,240	X	0.1	X	X	X	X	X	X	X	X
United Kingdom	X	2,326	2,390	X	0.5	X	X	X	X	X	X	X	X
Yugoslavia, Fed Rep	X	1,769	1,769	X	0.0	X	X	X	X	X	X	X	X

	Forest Area										Forest Industry Structure (b)		
	Total Forest				Natural Forest				Plantations (a)		No. of Enterprises 1995	No. of Employees 1995	
	Extent 1980 (000 ha)	Extent 1990 (000 ha)	Extent 1995 (000 ha)	Average Annual Percent Change		Extent 1990 (000 ha)	Extent 1995 (000 ha)	Average Annual Percent Change		Extent 1990 (000 ha)			Average Annual % Change 1980-90
				1980-90	1990-95			1980-90	1990-95				
<b>NORTH AMERICA</b>	X	<b>453,270</b>	<b>457,086</b>	X	<b>0.2</b>	X	X	X	X	X	X	X	X
Canada	X	243,698	244,571	X	0.1	X	X	X	X	X	X	X	X
United States	X	209,572	212,515	X	0.3	X	X	X	X	X	X	X	X
<b>CENTRAL AMERICA</b>	<b>88,344</b>	<b>84,628</b>	<b>79,443</b>	<b>(0.4)</b>	<b>(1.3)</b>	<b>84,142</b>	<b>78,958</b>	<b>(0.2)</b>	<b>(1.3)</b>	<b>501</b>	<b>8</b>	<b>136</b>	<b>11,313</b>
Belize	2,048	1,995	1,962	(0.3)	(0.3)	1,993	1,960	(0.3)	(0.3)	2	0	X	X
Costa Rica	1,925	1,455	1,248	(2.8)	(3.1)	1,427	1,220	(3.0)	(3.1)	28	27	X	X
Cuba	1,998	1,960	1,842	(0.2)	(1.2)	1,715	1,597	(1.0)	(1.4)	245	8	X	X
Dominican Rep	1,432	1,714	1,582	1.8	(1.6)	1,707	1,575	1.8	(1.6)	7	6	X	X
El Salvador	156	124	105	(2.3)	(3.3)	120	101	(2.5)	(3.5)	4	15	X	X
Guatemala	5,049	4,253	3,841	(1.7)	(2.0)	4,225	3,813	(1.8)	(2.1)	28	10	X	X
Haiti	38	25	21	(4.3)	(3.5)	17	13	(8.1)	(5.2)	8	33	X	X
Honduras	5,720	4,626	4,115	(2.1)	(2.3)	4,623	4,112	(2.1)	(2.3)	3	24	X	10,000 d
Jamaica	516	254	175	(7.1)	(7.5)	239	160	(7.5)	(8.0)	15	5	X	X
Mexico	55,423	57,927	55,387	0.4	(0.9)	57,818	55,278	0.4	(0.9)	109	7	X	X
Nicaragua	7,255	6,314	5,560	(1.4)	(2.5)	6,300	5,546	(1.4)	(2.6)	14	27	X	X
Panama	3,764	3,118	2,800	(1.9)	(2.2)	3,112	2,794	(1.9)	(2.2)	6	9	4	363
Trinidad and Tobago	204	174	161	(1.6)	(1.6)	161	148	(1.8)	(1.6)	13	1	132	950
<b>SOUTH AMERICA</b>	<b>954,771</b>	<b>894,466</b>	<b>870,594</b>	<b>(0.7)</b>	<b>(0.5)</b>	<b>887,187</b>	<b>863,315</b>	<b>(0.7)</b>	<b>(0.5)</b>	<b>7,264</b>	<b>5</b>	<b>6,426</b>	<b>806,102</b>
Argentina	36,527	34,389	33,942	(0.6)	(0.3)	33,842	33,395	(0.6)	(0.3)	547	1	X	X
Bolivia	55,582	51,217	48,310	(0.8)	(1.2)	51,189	48,282	(0.8)	(1.2)	28	4	X	100,000 d
Brazil	600,762	563,911	551,139	(0.6)	(0.5)	559,011	546,239	(0.7)	(0.5)	4,900	5	X	400,000 d
Chile	8,087	8,038	7,892	(0.1)	(0.4)	7,023	6,877	(0.8)	(0.4)	1,015	8	X	X
Colombia	57,771	54,299	52,988	(0.6)	(0.5)	54,173	52,862	(0.6)	(0.5)	126	12	5,114	18,482
Ecuador	14,372	12,082	11,137	(1.7)	(1.6)	12,037	11,092	(1.8)	(1.6)	45	4	X	40,000 d
Guyana	18,597	18,620	18,577	0.0	(0.0)	18,612	18,569	0.0	(0.0)	8	29	529	13,320
Paraguay	16,886	13,160	11,527	(2.5)	(2.6)	13,151	11,518	(2.5)	(2.7)	9	15	X	X
Peru	70,714	68,646	67,562	(0.3)	(0.3)	68,462	67,378	(0.3)	(0.3)	184	7	367	219,250
Suriname	14,901	14,782	14,721	(0.1)	(0.1)	14,774	14,713	(0.1)	(0.1)	8	4	X	X
Uruguay	803	816	814	0.2	(0.0)	660	658	(0.1)	(0.1)	156	1	X	X
Venezuela	51,768	46,512	43,995	(1.1)	(1.1)	46,259	43,742	(1.1)	(1.1)	253	11	416	15,050
<b>ASIA</b>	<b>X</b>	<b>490,812</b>	<b>474,172</b>	<b>X</b>	<b>(0.7)</b>	<b>398,985</b>	<b>255,751</b>	<b>X</b>	<b>(8.9)</b>	<b>56,115</b>	<b>7</b>	<b>4,556</b>	<b>2,582,037</b>
Afghanistan, Islamic State	1,203	1,990	1,398	5.0	(7.1)	1,982	1,390	5.1	(7.1)	8	0	X	X
Armenia, Rep	X	292	334	X	2.7	X	X	X	X	X	X	X	X
Azerbaijan	X	990	990	X	0.0	X	X	X	X	X	X	X	X
Bangladesh	1,258	1,054	1,010	(1.8)	(0.9)	819	700	(3.3)	(3.1)	235	7	X	X
Bhutan	2,975	2,803	2,756	(0.6)	(0.3)	2,799	2,748	(0.6)	(0.4)	4	7	X	X
Cambodia	13,484	10,649	9,830	(2.4)	(1.6)	10,642	9,823	(2.4)	(1.6)	7	0	X	X
China	126,398	133,756	133,323	0.6	(0.1)	101,925	99,523	(0.4)	(0.5)	31,831	4	X	X
Georgia	X	2,988	2,988	X	0.0	X	X	X	X	X	X	X	X
India	58,259	64,969	65,005	1.1	0.0	51,739	50,385	(0.6)	(0.5)	13,230	14	X	500,000 d
Indonesia	124,476	115,213	109,791	(0.8)	(1.0)	109,088	103,666	(1.1)	(1.0)	6,125	8	X	1,600,000 d
Iran, Islamic Rep	2,016	1,686	1,544	(1.8)	(1.8)	1,607	1,465	(2.1)	(1.9)	79	10	X	X
Iraq	83	83	83	0.0	0.0	69	69	0.0	0.0	14	0	X	X
Israel	X	102	102	X	0.0	X	X	X	X	X	X	X	X
Japan	X	25,212	25,146	X	(0.1)	X	X	X	X	X	X	X	X
Jordan	50	51	45	0.3	(2.5)	28	22	(2.2)	(4.8)	23	5	X	X
Kazakhstan, Rep	X	9,540	10,504	X	1.9	X	X	X	X	X	X	X	X
Korea, Dem People's Rep	5,400	6,170	6,170	1.3	0.0	4,700	4,700	0.0	0.0	1,470	7	X	X
Korea, Rep	6,304	7,691	7,626	2.0	(0.2)	6,291	6,226	(0.0)	(0.2)	0	0	X	X
Kuwait	0	5	5	33.8	0.0	0	0	0.0	0.0	5	34	X	X
Kyrgyz Rep	X	730	730	X	0.0	X	X	X	X	X	X	X	X
Lao People's Dem Rep	14,470	13,177	12,435	(0.9)	(1.2)	13,173	12,431	(0.9)	(1.2)	4	4	X	X
Lebanon	84	78	52	(0.7)	(8.1)	65	39	(0.8)	(10.3)	13	0	X	X
Malaysia	21,564	17,472	15,471	(2.1)	(2.4)	17,391	15,371	(2.1)	(2.5)	81	15	3,499	204,163
Mongolia	9,406	9,406	9,406	0.0	0.0	9,406	9,406	0.0	0.0	0	0	X	X
Myanmar	32,901	29,088	27,151	(1.2)	(1.4)	28,853	26,875	(1.3)	(1.4)	235	18	109	13,224
Nepal	5,580	5,096	4,822	(0.9)	(1.1)	5,040	4,766	(1.0)	(1.1)	56	14	X	X
Oman	X	0	0	X	0.0	0	0	0.0	0.0	0	0	X	X
Pakistan	2,749	2,023	1,748	(3.1)	(2.9)	1,855	1,580	(3.5)	(3.2)	168	3	X	X
Philippines	11,194	8,078	6,766	(3.3)	(3.5)	7,875	6,563	(3.3)	(3.6)	203	0	203	204,650
Saudi Arabia	248	231	222	(0.7)	(0.8)	230	221	(0.7)	(0.8)	1	0	X	X
Singapore	4	4	4	0.0	0.0	4	4	0.7	(1.4)	0	0	X	X
Sri Lanka	2,094	1,897	1,796	(1.0)	(1.1)	1,758	1,657	(1.4)	(1.2)	139	6	X	X
Syrian Arab Rep	191	245	219	2.5	(2.2)	118	92	(3.2)	(5.0)	127	15	X	X
Tajikistan, Rep	X	410	410	X	0.0	X	X	X	X	X	X	X	X
Thailand	18,123	13,277	11,630	(3.1)	(2.6)	12,748	11,101	(3.4)	(2.8)	529	8	745	60,000 d
Turkey	X	8,856	8,856	X	0.0	X	X	X	X	X	X	X	X
Turkmenistan, Rep	X	3,754	3,754	X	0.0	X	X	X	X	X	X	X	X
United Arab Emirates	1	60	60	46.6	0.0	0	0	0.0	0.0	60	47	X	X
Uzbekistan, Rep	X	7,989	9,119	X	2.6	X	X	X	X	X	X	X	X
Vietnam	10,663	9,793	9,117	(0.9)	(1.4)	8,323	7,647	(1.5)	(1.7)	1,470	4	X	X
Yemen	9	9	9	0.0	0.0	9	9	0.0	0.0	0	0	X	X
<b>OCEANIA</b>	<b>X</b>	<b>91,149</b>	<b>90,695</b>	<b>X</b>	<b>(0.1)</b>	<b>42,507</b>	<b>41,752</b>	<b>0.3</b>	<b>(0.4)</b>	<b>149</b>	<b>8</b>	<b>760</b>	<b>19,850</b>
Australia	X	40,823	40,908	X	0.0	X	X	X	X	X	X	X	X
Fiji	839	853	835	0.2	(0.4)	775	757	(0.5)	(0.5)	78	10	48	3,800
New Zealand	X	7,667	7,884	X	0.6	X	X	X	X	X	X	X	X
Papua New Guinea	37,145	37,605	36,939	0.1	(0.4)	37,575	36,909	0.1	(0.4)	30	7	712	16,050
Solomon Islands	2,453	2,412	2,389	(0.2)	(0.2)	2,394	2,371	(0.2)	(0.2)	16	2	X	X
<b>TROPICAL REGIONS</b>	<b>1,930,061</b>	<b>1,796,927</b>	<b>1,733,959</b>	<b>(0.7)</b>	<b>(0.7)</b>	<b>1,766,116</b>	<b>1,701,589</b>	<b>(0.8)</b>	<b>(0.7)</b>	<b>30,801</b>	<b>9</b>	<b>X</b>	<b>X</b>
<b>NONTROPICAL REGIONS</b>	<b>X</b>	<b>1,713,801</b>	<b>1,720,423</b>	<b>X</b>	<b>0.1</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>

Notes: a. Plantation figures for 1995 are approximately the difference between total and natural forest. They are not included in this table because FAO considers them to be unreliable.  
b. Only includes International Tropical Timber Organization (ITTO) producer countries. c. World and regional totals include countries not listed. d. ITTO estimate. e. 1980 figures include Eritrea. f. Includes Luxembourg.

Data Table 11.2

## Forest Ecosystems, 1996

Sources: World Conservation Monitoring Centre, Centre for International Forestry Research, World Resources Institute, and Food and Agriculture Organization of the United Nations

	Land Area (000 hectares)	Closed Forests				Forest Ecosystems (1996)							
		Original Forest as a % of Land Area (a)	Forests as a % of Original Forest		Percent Frontier Forests (c) Threatened 1996	Mangroves		Tropical Forests		Nontropical Forests		Sparse Trees and Parkland	
			Current Forests (b) 1996	Frontier Forests (c) 1996		Area (000 ha)	Percent Protected	Area (000 ha)	Percent Protected	Area (000 ha)	Percent Protected	Area (000 ha)	Percent Protected
<b>WORLD (d)</b>	<b>13,048,300</b>	<b>47.7</b>	<b>53.4</b>	<b>21.7</b>	<b>39.5</b>	<b>16,945</b>	<b>13.3</b>	<b>1,407,649</b>	<b>11.7</b>	<b>1,823,787</b>	<b>6.0</b>	<b>541,616</b>	<b>5.5</b>
<b>AFRICA</b>	<b>2,963,468</b>	<b>22.9</b>	<b>33.9</b>	<b>7.8</b>	<b>76.8</b>	<b>3,801</b>	<b>1.4</b>	<b>448,197</b>	<b>9.1</b>	<b>8,249</b>	<b>2.0</b>	<b>69,710</b>	<b>11.3</b>
Algeria	238,174	4.6	12.0	0.0	0.0	0	0.0	0	0.0	2,694	3.7	1	83.3
Angola	124,670	19.8	15.3	0.0	0.0	0	0.0	37,564	2.6	0	0.0	0	0.0
Benin	11,062	15.5	3.5	0.0	0.0	0	0.0	1,516	18.2	0	0.0	585	2.3
Botswana	56,673	2.1	100.0	0.0	0.0	0	0.0	12,123	2.2	0	0.0	0	0.0
Burkina Faso	27,360	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	5,667	15.9
Burundi	2,568	46.3	3.5	0.0	0.0	0	0.0	219	18.2	0	0.0	139	2.6
Cameroon	46,540	80.4	42.4	7.9	97.4	227	1.9	20,009	6.0	0	0.0	2,416	21.8
Central African Rep	62,298	51.8	15.9	4.4	100.0	0	0.0	17,101	20.1	0	0.0	1,451	47.7
Chad	125,920	0.0	0.0	0.0	0.0	0	0.0	3,516	3.6	0	0.0	2,857	0.7
Congo, Dem Rep	226,705	82.5	60.4	15.6	70.4	22	0.0	135,071	6.6	0	0.0	172	40.0
Congo, Rep	34,150	100.0	67.8	28.7	64.6	19	75.8	24,321	4.4	0	0.0	0	0.0
Côte d'Ivoire	31,800	74.9	9.9	2.2	100.0	0	0.0	2,702	22.8	0	0.0	625	18.4
Egypt	99,545	0.6	0.0	0.0	0.0	0	0.0	134	0.0	4	0.0	0	0.0
Equatorial Guinea	2,805	95.6	38.4	0.0	0.0	25	0.0	1,749	0.0	0	0.0	0	0.0
Eritrea	X	X	X	X	X	0	0.0	1	0.0	0	0.0	0	0.0
Ethiopia (e)	110,000	24.5	17.3	0.0	0.0	0	0.0	11,937	18.8	0	0.0	4,804	21.4
Gabon	25,767	100.0	90.4	32.4	100.0	147	3.0	21,481	3.6	0	0.0	0	0.0
Gambia, The	1,000	39.1	61.9	0.0	0.0	51	4.8	188	5.1	0	0.0	244	2.5
Ghana	22,754	65.9	8.6	0.0	0.0	0	0.0	1,694	7.1	0	0.0	336	16.7
Guinea	24,572	75.6	5.0	0.0	0.0	316	0.0	3,073	1.1	0	0.0	2,723	1.2
Guinea-Bissau	2,812	100.0	33.7	0.0	0.0	317	0.0	1,141	0.0	0	0.0	550	0.0
Kenya	56,914	16.8	18.5	0.0	0.0	0	0.0	3,423	8.3	0	0.0	2,754	2.8
Lesotho	3,035	2.4	0.0	0.0	0.0	0	0.0	89	8.7	0	0.0	0	0.0
Liberia	9,632	99.6	44.2	0.0	0.0	0	0.0	3,149	2.9	0	0.0	1	0.0
Libya	175,954	0.8	0.0	0.0	0.0	0	0.0	0	0.0	53	0.0	0	0.0
Madagascar	58,154	92.6	13.1	0.0	0.0	310	0.2	6,940	5.5	0	0.0	0	0.0
Malawi	9,408	12.2	0.0	0.0	0.0	0	0.0	3,830	8.5	0	0.0	0	0.0
Mali	122,019	0.0	0.0	0.0	0.0	0	0.0	6,132	2.3	0	0.0	336	0.4
Mauritania	102,522	0.0	0.0	0.0	0.0	X	X	X	X	X	X	X	X
Mauritius	203	X	X	X	X	X	X	X	X	X	X	X	X
Morocco	44,630	21.6	7.3	0.0	0.0	0	0.0	0	0.0	1,862	2.6	0	0.0
Mozambique	78,409	33.2	13.6	0.0	0.0	565	3.7	20,863	7.5	0	0.0	14,414	6.6
Namibia	82,329	0.0	95.3	0.0	0.0	0	0.0	3,436	10.6	0	0.0	0	0.0
Niger	126,670	0.0	0.0	0.0	0.0	0	0.0	27	15.6	0	0.0	0	0.0
Nigeria	91,077	45.1	10.7	0.6	100.0	1,145	0.0	11,634	7.4	0	0.0	10,588	4.0
Rwanda	2,467	36.1	16.1	0.0	0.0	0	0.0	291	77.0	0	0.0	162	1.8
Senegal	19,253	14.2	16.0	0.0	0.0	158	2.9	2,076	7.0	0	0.0	8,816	13.1
Sierra Leone	7,162	100.0	9.7	0.0	0.0	176	0.8	260	20.3	0	0.0	104	0.0
Somalia	62,734	4.2	0.0	0.0	0.0	0	0.0	11,800	1.1	0	0.0	1,530	0.9
South Africa	122,104	12.8	0.2	0.0	0.0	0	0.0	10,333	5.2	52	26.4	0	0.0
Sudan	237,600	1.2	0.0	0.0	0.0	0	0.0	12,288	12.3	0	0.0	5,870	8.9
Swaziland	1,720	21.5	0.0	0.0	0.0	0	0.0	286	3.2	0	0.0	0	0.0
Tanzania	88,359	22.4	9.1	0.0	0.0	323	0.4	14,356	15.8	0	0.0	583	3.3
Togo	5,439	32.9	7.0	0.0	0.0	0	0.0	224	2.6	0	0.0	91	9.1
Tunisia	15,536	18.1	4.7	0.0	0.0	0	0.0	0	0.0	300	2.2	0	0.0
Uganda	19,965	70.0	4.4	0.0	0.0	0	0.0	3,772	17.0	0	0.0	1,850	65.2
Zambia	74,339	7.1	70.1	0.0	0.0	0	0.0	21,989	31.9	0	0.0	39	14.1
Zimbabwe	38,685	7.0	67.3	0.0	0.0	0	0.0	15,397	12.2	0	0.0	0	0.0
<b>EUROPE</b>	<b>2,260,320</b>	<b>72.7</b>	<b>58.4</b>	<b>21.3</b>	<b>18.7</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>1,019,178</b>	<b>2.9</b>	<b>10,350</b>	<b>1.0</b>
Albania	2,740	92.5	37.3	0.0	0.0	0	0.0	0	0.0	1,066	1.2	0	0.0
Austria	8,273	95.1	52.8	0.0	0.0	0	0.0	0	0.0	3,593	20.9	0	0.0
Belarus, Rep	20,748	91.1	27.2	0.0	0.0	0	0.0	0	0.0	6,280	6.5	0	0.0
Belgium	30,230	9.5	21.0	0.0	0.0	0	0.0	0	0.0	687	7.8	0	0.0
Bosnia and Herzegovina	5,100	X	X	X	X	0	0.0	0	0.0	2,303	1.0	0	0.0
Bulgaria	11,055	92.3	31.7	0.0	0.0	0	0.0	0	0.0	3,787	5.9	0	0.0
Croatia, Rep	5,592	X	X	X	X	0	0.0	0	0.0	1,391	9.9	0	0.0
Czech Rep	7,728	X	X	X	X	0	0.0	0	0.0	2,481	27.5	0	0.0
Denmark	4,243	88.5	0.8	0.0	0.0	0	0.0	0	0.0	459	4.2	0	0.0
Estonia, Rep	4,227	96.0	29.4	0.0	0.0	0	0.0	0	0.0	1,524	6.7	0	0.0
Finland	30,459	100.0	82.3	1.1	100.0	0	0.0	0	0.0	25,309	5.8	0	0.0
France	55,010	95.3	16.5	0.0	0.0	0	0.0	0	0.0	10,831	13.7	0	0.0
Germany	34,927	92.6	26.3	0.0	0.0	0	0.0	0	0.0	10,401	24.8	0	0.0
Greece	12,890	84.3	17.0	0.0	0.0	0	0.0	0	0.0	4,423	1.7	0	0.0
Hungary	9,234	50.4	8.2	0.0	0.0	0	0.0	0	0.0	777	26.1	0	0.0
Iceland	10,025	43.7	0.0	0.0	0.0	X	X	X	X	X	X	X	X
Ireland	6,889	64.4	3.6	0.0	0.0	0	0.0	0	0.0	457	2.1	0	0.0
Italy	29,406	94.5	20.4	0.0	0.0	0	0.0	0	0.0	6,757	6.1	0	0.0
Latvia, Rep	6,205	100.0	19.8	0.0	0.0	0	0.0	0	0.0	1,624	10.1	0	0.0
Lithuania, Rep	6,480	99.3	16.0	0.0	0.0	0	0.0	0	0.0	1,509	10.3	0	0.0
Macedonia, FYR	2,543	X	X	X	X	0	0.0	0	0.0	1,091	9.9	0	0.0
Moldova, Rep	3,297	48.3	3.7	0.0	0.0	0	0.0	0	0.0	143	5.4	0	0.0
Netherlands	3,392	46.2	4.8	0.0	0.0	0	0.0	0	0.0	235	7.4	0	0.0
Norway	30,683	33.8	90.4	0.0	0.0	0	0.0	0	0.0	8,139	2.0	0	0.0
Poland, Rep	30,442	95.6	22.2	0.0	0.0	0	0.0	0	0.0	8,939	12.9	0	0.0
Portugal	9,150	91.2	9.4	0.0	0.0	0	0.0	0	0.0	2,661	5.6	0	0.0
Romania	23,034	75.2	41.5	0.0	0.0	0	0.0	0	0.0	8,137	2.5	0	0.0
Russian Federation	1,688,850	69.6	68.7	29.3	18.6	0	0.0	0	0.0	815,551	1.8	10,350	1.0
Slovak Rep	4,808	X	X	X	X	0	0.0	0	0.0	2,308	29.6	0	0.0
Slovenia, Rep	2,012	X	X	X	X	0	0.0	0	0.0	696	8.9	0	0.0
Spain	49,944	94.2	15.1	0.0	0.0	0	0.0	0	0.0	14,024	10.8	0	0.0
Sweden	41,162	93.3	86.0	2.9	100.0	0	0.0	0	0.0	29,364	1.6	0	0.0
Switzerland	3,955	85.5	44.8	0.0	0.0	0	0.0	0	0.0	1,309	12.6	0	0.0
Ukraine	57,935	45.7	20.4	0.0	0.0	0	0.0	0	0.0	7,046	1.6	0	0.0
United Kingdom	24,160	77.5	6.0	0.0	0.0	0	0.0	0	0.0	2,303	20.7	0	0.0
Yugoslavia, Fed Rep	10,200	X	X	X	X	0	0.0	0	0.0	3,664	3.4	0	0.0

Land Area (000 hectares)	Closed Forests					Forest Ecosystems (1996)							
	Original Forest as a % of Land Area (a)	Forests as a % of Original Forest		Percent Frontier Forests (c) Threatened	1996	Mangroves		Tropical Forests		Nontropical Forests		Sparse Trees and Parkland	
		Current Forests (b)	Frontier Forests (c)			Area (000 ha)	Percent Protected	Area (000 ha)	Percent Protected	Area (000 ha)	Percent Protected	Area (000 ha)	Percent Protected
<b>NORTH AMERICA</b>	<b>1,838,009</b>	<b>59.7</b>	<b>77.3</b>	<b>34.1</b>	<b>26.2</b>	<b>199</b>	<b>60.0</b>	<b>443</b>	<b>6.7</b>	<b>683,700</b>	<b>8.9</b>	<b>148,827</b>	<b>5.7</b>
Canada	922,097	65.8	91.2	56.5	20.9	0	0.0	0	0.0	404,313	7.9	143,573	5.6
United States	915,912	53.5	60.2	6.3	84.7	199	60.0	443	6.7	279,386	10.4	5,254	9.0
<b>CENTRAL AMERICA</b>	<b>264,835</b>	<b>67.2</b>	<b>54.5</b>	<b>9.7</b>	<b>87.0</b>	<b>1,679</b>	<b>14.9</b>	<b>71,893</b>	<b>12.3</b>	<b>21,293</b>	<b>3.1</b>	<b>26</b>	<b>0.0</b>
Belize	2,280	91.8	95.7	35.5	66.1	30	9.6	1,440	43.6	0	0.0	0	0.0
Costa Rica	5,106	98.4	34.9	9.5	100.0	53	1.9	1,464	44.8	0	0.0	0	0.0
Cuba	10,982	90.4	28.8	0.0	0.0	767	7.0	1,761	15.3	0	0.0	0	0.0
Dominican Rep	4,838	97.7	25.1	0.0	0.0	70	52.1	1,171	16.9	0	0.0	0	0.0
El Salvador	2,072	99.4	9.9	0.0	0.0	45	0.0	111	4.5	0	0.0	0	0.0
Guatemala	10,843	98.7	46.2	2.2	100.0	16	16.7	3,862	31.9	0	0.0	0	0.0
Haiti	2,756	93.2	0.8	0.0	0.0	0	0.0	64	2.0	0	0.0	0	0.0
Honduras	11,789	99.5	51.6	16.4	100.0	231	42.2	5,273	18.3	0	0.0	0	0.0
Jamaica	1,083	96.7	35.6	0.0	0.0	9	10.8	399	20.5	0	0.0	0	0.0
Mexico	190,869	55.7	63.4	8.1	77.0	0	0.0	45,765	4.3	21,293	3.1	0	0.0
Nicaragua	12,140	100.0	44.3	21.6	100.0	94	14.8	5,322	24.7	0	0.0	0	0.0
Panama	7,443	97.2	62.0	34.8	100.0	180	2.1	3,744	30.9	0	0.0	0	0.0
Trinidad and Tobago	513	93.5	35.5	0.0	0.0	5	5.9	124	7.0	0	0.0	0	0.0
<b>SOUTH AMERICA</b>	<b>1,752,925</b>	<b>55.6</b>	<b>69.1</b>	<b>45.6</b>	<b>54.0</b>	<b>2,929</b>	<b>32.1</b>	<b>620,514</b>	<b>12.2</b>	<b>39,291</b>	<b>15.7</b>	<b>168,216</b>	<b>2.4</b>
Argentina	273,669	5.5	59.5	6.3	99.9	0	0.0	4,360	5.5	19,094	10.1	6,392	9.4
Bolivia	108,438	53.9	77.2	43.6	96.9	0	0.0	68,638	12.1	0	0.0	0	0.0
Brazil	845,651	64.0	66.4	42.2	47.8	1,340	28.4	301,273	6.9	2,613	6.9	137,494	1.3
Chile	74,880	39.7	40.6	54.5	76.0	0	0.0	0	0.0	14,526	27.1	263	0.6
Colombia	103,870	92.2	53.5	36.4	18.7	368	22.2	53,186	10.8	0	0.0	0	0.0
Ecuador	27,684	78.8	66.4	36.9	99.5	238	14.2	13,508	23.9	0	0.0	755	46.9
Guyana	19,685	98.9	97.4	81.8	41.1	159	0.0	17,844	1.3	0	0.0	0	0.0
Paraguay	39,730	21.9	44.5	0.0	0.0	0	0.0	9,290	2.6	2,848	4.9	16,253	2.7
Peru	128,000	74.4	86.6	56.7	99.6	0	0.0	75,636	5.1	0	0.0	2,660	3.0
Suriname	15,600	91.7	95.6	92.2	21.7	109	35.9	13,219	4.0	0	0.0	0	0.0
Uruguay	17,481	1.6	0.0	0.0	0.0	0	0.0	2	0.0	97	1.0	325	1.6
Venezuela	88,205	74.7	83.6	59.3	37.3	621	65.1	55,615	59.0	0	0.0	3,997	18.6
<b>ASIA</b>	<b>3,085,414</b>	<b>49.1</b>	<b>28.2</b>	<b>5.3</b>	<b>63.1</b>	<b>4,033</b>	<b>26.5</b>	<b>210,720</b>	<b>16.4</b>	<b>145,101</b>	<b>5.1</b>	<b>42,384</b>	<b>7.0</b>
Afghanistan, Islamic State	65,209	48.1	6.5	0.0	0.0	0	0.0	0	0.0	2,076	0.0	0	0.0
Armenia, Rep	2,820	45.6	21.1	0.0	0.0	0	0.0	0	0.0	355	10.1	0	0.0
Azerbaijan	8,660	32.0	32.0	0.0	0.0	0	0.0	0	0.0	1,133	0.0	0	0.0
Bangladesh	13,017	100.0	7.9	3.8	100.0	440	8.3	862	3.7	0	0.0	0	0.0
Bhutan	4,700	67.3	61.8	24.0	100.0	0	0.0	966	22.9	1,129	37.6	0	0.0
Cambodia	17,652	100.0	65.1	10.3	100.0	47	66.5	11,516	25.6	0	0.0	0	0.0
China (f)	929,100	51.8	21.6	1.8	92.8	0	0.0	109	13.0	82,710	3.9	26,715	4.7
Georgia	6,970	76.6	57.3	0.0	0.0	0	0.0	0	0.0	3,158	0.0	0	0.0
India	297,319	79.0	20.5	1.3	57.2	304	49.6	44,450	8.9	9,260	8.3	0	0.0
Indonesia	181,157	100.0	64.6	28.5	53.8	2,390	32.8	88,744	20.9	0	0.0	0	0.0
Iran, Islamic Rep	162,200	43.1	3.3	0.0	0.0	0	0.0	0	0.0	2,348	12.0	0	0.0
Iraq	43,737	13.4	0.0	0.0	0.0	X	X	X	X	X	X	X	X
Israel	2,062	86.6	0.0	0.0	0.0	X	X	X	X	X	X	X	X
Japan	37,652	91.4	58.2	0.0	0.0	0	0.0	0	0.0	5,677	9.7	0	0.0
Jordan	8,893	13.1	0.0	0.0	0.0	X	X	X	X	X	X	X	X
Kazakhstan, Rep	267,073	2.6	22.9	2.9	100.0	0	0.0	0	0.0	2,638	9.6	0	0.0
Korea, Dem People's Rep	12,041	97.3	38.7	0.0	0.0	0	0.0	0	0.0	3,967	1.1	506	0.0
Korea, Rep	9,873	88.5	16.5	0.0	0.0	0	0.0	0	0.0	1,426	3.4	0	0.0
Kuwait	1,782	0.0	0.0	0.0	0.0	X	X	X	X	X	X	X	X
Kyrgyz Rep	19,180	8.4	14.0	0.0	0.0	0	0.0	0	0.0	785	0.2	0	0.0
Lao People's Dem Rep	23,080	99.9	30.0	2.1	100.0	0	0.0	3,639	23.0	849	5.0	0	0.0
Lebanon	1,023	73.7	0.7	0.0	0.0	0	0.0	0	0.0	36	0.0	0	0.0
Malaysia	32,855	99.5	63.8	14.5	48.5	166	6.6	13,007	11.7	0	0.0	0	0.0
Mongolia	156,650	22.5	49.6	8.2	0.0	0	0.0	0	0.0	2,636	25.2	14,697	11.2
Myanmar	65,755	100.0	40.6	0.0	0.0	0	0.0	20,661	0.8	9,574	2.0	0	0.0
Nepal	14,300	83.6	22.4	0.0	0.0	0	0.0	1,162	18.8	2,660	20.7	0	0.0
Oman	21,246	0.0	0.0	0.0	0.0	X	X	X	X	X	X	X	X
Pakistan	77,088	44.8	5.8	0.0	0.0	73	39.9	807	0.6	2,083	4.7	0	0.0
Philippines	29,817	95.3	6.0	0.0	0.0	2	0.0	2,402	5.2	0	0.0	0	0.0
Saudi Arabia	214,969	0.0	0.0	0.0	0.0	X	X	X	X	X	X	X	X
Singapore	61	78.8	3.1	0.0	0.0	X	X	X	X	X	X	X	X
Sri Lanka	6,463	94.7	18.1	11.9	76.2	9	9.2	1,581	27.6	0	0.0	466	19.4
Syrian Arab Rep	18,378	19.2	0.0	0.0	0.0	0	0.0	0	0.0	47	0.0	0	0.0
Tajikistan, Rep	14,060	50.7	4.2	0.0	0.0	X	X	X	X	X	X	X	X
Thailand	51,089	100.0	22.2	4.9	100.0	509	5.0	16,237	31.2	361	11.3	0	0.0
Turkey	76,963	66.4	11.3	0.0	0.0	0	0.0	0	0.0	8,390	1.2	0	0.0
Turkmenistan, Rep	46,993	7.9	4.1	0.0	0.0	0	0.0	0	0.0	216	0.7	0	0.0
United Arab Emirates	8,360	0.0	0.0	0.0	0.0	X	X	X	X	X	X	X	X
Uzbekistan, Rep	41,424	2.8	10.2	0.0	0.0	0	0.0	0	0.0	231	0.0	0	0.0
Vietnam	32,549	99.7	17.2	1.9	100.0	73	2.2	4,218	10.3	723	8.8	0	0.0
Yemen	52,797	0.0	0.0	0.0	0.0	X	X	X	X	X	X	X	X
<b>OCEANIA</b>	<b>849,135</b>	<b>16.9</b>	<b>64.9</b>	<b>22.3</b>	<b>76.3</b>	<b>5,466</b>	<b>6.6</b>	<b>53,560</b>	<b>9.1</b>	<b>27,088</b>	<b>18.7</b>	<b>102,126</b>	<b>6.1</b>
Australia	768,230	9.3	64.3	17.8	62.8	4,902	5.2	14,088	7.3	22,877	14.1	101,485	6.1
Fiji	1,827	84.1	49.9	0.0	0.0	52	0.0	641	1.0	0	0.0	0	0.0
New Zealand	26,799	84.7	29.2	8.9	100.0	0	0.0	0	0.0	4,212	43.8	0	0.0
Papua New Guinea	45,286	96.0	85.4	39.6	83.5	459	23.2	35,791	10.7	0	0.0	0	0.0
Solomon Islands	2,799	82.1	93.9	0.0	0.0	0	0.0	2,669	0.0	0	0.0	0	0.0

Notes: a. Original forest is that estimated to have covered the planet 8,000 years ago given current climate conditions. b. Includes frontier and nonfrontier forests. c. Frontier forests are large, relatively undisturbed forest ecosystems. d. World and regional totals include countries not listed here. Antarctica is excluded from world total. e. Land area and closed forest data include Eritrea. f. Land area and closed forest data include Taiwan.

Data Table 11.3

## Wood Production and Trade, 1983-95

Source: Food and Agriculture Organization of the United Nations

	Average Annual Roundwood Production						Average Annual Production				Average Annual Net Trade in Roundwood			
	Total		Fuel and Charcoal		Industrial Roundwood		Sawnwood		Paper		Quantity (a)		Balance of Trade (b)	
	Cubic Meters (000)	Percent Change Since 1983-85	Cubic Meters (000)	Percent Change Since 1983-85	Cubic Meters (000)	Percent Change Since 1983-85	Cubic Meters (000)	Percent Change Since 1983-85	Metric Tons (000)	Percent Change Since 1983-85	Cubic Meters (000)	Percent Change Since 1983-85	Value (million US\$)	Percent Change Since 1983-85
1993-95	1983-85	1993-95	1983-85	1993-95	1983-85	1993-95	1983-85	1993-95	1983-85	1993-95	1983-85	1993-95	1983-85	
<b>WORLD (c)</b>	<b>3,374,100</b>	<b>8</b>	<b>1,891,608</b>	<b>17</b>	<b>1,482,492</b>	<b>(1)</b>	<b>430,894</b>	<b>(6)</b>	<b>272,082</b>	<b>46</b>				
<b>AFRICA</b>	<b>567,133</b>	<b>33</b>	<b>502,378</b>	<b>34</b>	<b>64,754</b>	<b>23</b>	<b>8,761</b>	<b>18</b>	<b>2,580</b>	<b>24</b>	<b>(5,717)</b>	<b>42</b>	<b>938,740</b>	<b>221</b>
Algeria	2,489	35	2,081	29	408	81	13	0	86	(27)	51	(79)	(14,133)	(57)
Angola	6,794	32	5,830	33	964	28	5	15	0	0	(1)	3,926	612	9,563
Benin	5,725	36	5,413	36	312	44	24	227	X	X	(1)	X	30	X
Botswana	1,538	39	1,443	39	95	39	X	X	X	X	X	X	X	X
Burkina Faso	9,770	31	9,328	31	442	30	2	(10)	X	X	X	X	X	X
Burundi	4,828	36	4,725	35	104	145	21	681	X	X	X	X	X	X
Cameroon	15,263	30	12,065	32	3,197	24	1,088	136	5	0	(991)	82	159,354	262
Central African Rep	3,795	15	3,250	15	545	13	68	16	X	X	(62)	(24)	16,676	33
Chad	4,407	26	3,773	26	633	28	2	135	X	X	X	X	X	X
Congo, Dem Rep	3,668	46	2,288	34	1,380	73	57	(3)	X	X	(286)	20	78,364	216
Congo, Rep	45,830	43	42,599	44	3,231	28	95	(19)	3	29	(93)	(2)	30,670	261
Côte d'Ivoire	14,298	18	11,204	44	3,094	(29)	667	(7)	X	X	(371)	(81)	53,180	(69)
Egypt	2,643	27	2,520	27	123	27	X	X	220	65	262	(11)	(18,478)	(62)
Equatorial Guinea	721	26	447	0	274	122	5	(83)	X	X	(213)	190	23,071	229
Eritrea	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ethiopia (d)	46,002	24	44,279	25	1,724	(4)	35	(21)	8	(21)	X	X	122	X
Gabon	4,717	36	2,813	35	1,905	37	165	59	X	X	(1,255)	0	349,682	241
Gambia, The	1,206	41	1,094	31	112	442	1	0	X	X	0	X	(38)	X
Ghana	25,990	59	24,331	58	1,660	67	727	141	X	X	(447)	413	86,131	1,260
Guinea	4,794	39	4,191	44	603	16	74	(18)	X	X	(17)	38	4,012	234
Guinea-Bissau	577	4	422	0	155	16	16	0	X	X	(7)	X	1,534	X
Kenya	40,353	42	38,462	42	1,891	28	185	7	132	81	(0)	(99)	35	(95)
Lesotho	690	32	690	32	X	X	X	X	X	X	X	X	X	X
Liberia	6,181	45	5,200	38	981	101	90	(44)	X	X	(600)	171	69,620	149
Libya	650	2	536	0	114	16	31	0	6	15	(0)	X	(19)	(100)
Madagascar	10,455	48	9,950	59	506	(37)	94	(60)	5	(49)	(1)	56	121	53
Malawi	10,196	56	9,669	55	527	70	45	133	X	X	(0)	X	21	X
Mali	6,341	36	5,937	36	404	38	13	151	X	X	0	X	(143)	X
Mauritania	13	33	8	33	5	33	X	X	X	X	(0)	X	96	X
Mauritius	18	(10)	8	(45)	10	98	4	167	X	X	9	841	(2,148)	750
Morocco	2,263	14	1,432	14	831	13	83	(29)	103	1	424	103	(57,087)	152
Mozambique	17,852	19	16,844	20	1,008	8	34	(6)	1	(42)	(10)	630	1,232	82
Namibia	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Niger	5,672	38	5,322	38	350	39	4	X	X	X	0	X	0	X
Nigeria	108,074	32	99,811	34	8,263	9	2,723	7	56	129	(54)	(4)	3,303	(40)
Rwanda	5,660	1	5,392	1	268	17	36	209	X	X	(4)	X	207	X
Senegal	5,107	25	4,405	23	702	38	23	54	X	X	33	14	(3,947)	9
Sierra Leone	3,249	23	3,126	25	124	(12)	5	(69)	X	X	(0)	X	6	X
Somalia	8,648	19	8,543	19	105	13	14	0	X	X	0	(100)	0	(100)
South Africa (e)	23,978	23	7,162	1	16,816	35	1,485	(6)	1,755	19	(2,065)	X	161,545	X
Sudan	24,747	31	22,456	31	2,291	30	3	(75)	3	(67)	1	X	(8)	X
Swaziland	1,469	(34)	560	0	909	(45)	75	(27)	X	X	0	X	X	X
Tanzania	35,680	36	33,533	35	2,147	67	29	(71)	25	X	(9)	1,429	1,718	3,203
Togo	2,053	175	1,836	207	217	47	8	381	X	X	(0)	(318)	26	(126)
Tunisia	3,502	26	3,293	23	209	80	20	363	87	147	37	42	(8,503)	142
Uganda	16,684	41	14,466	41	2,218	43	83	262	3	275	0	X	X	X
Zambia	14,422	39	13,341	35	1,081	111	351	601	3	(20)	(30)	(443)	1,286	(223)
Zimbabwe	8,075	15	6,269	10	1,806	41	250	79	79	16	(19)	256	1,511	395
<b>EUROPE</b>	<b>484,169</b>	<b>X</b>	<b>86,986</b>	<b>X</b>	<b>397,184</b>	<b>X</b>	<b>118,338</b>	<b>X</b>	<b>79,251</b>	<b>X</b>	<b>4,096</b>	<b>X</b>	<b>(817,505)</b>	<b>X</b>
Albania	471	(80)	410	(75)	61	(92)	4	(98)	44	444	(1)	X	132	X
Austria	14,074	0	3,156	80	10,918	(11)	7,387	19	3,501	80	5,727	76	(255,824)	200
Belarus, Rep	10,020	X	814	X	9,206	X	1,545	X	146	X	(173)	X	(6,745)	X
Belgium (f)	4,255	36	550	2	3,705	43	1,201	57	1,108	31	2,626	0	(77,994)	28
Bosnia and Herzegovina	X	X	X	X	X	X	X	X	X	X	(0)	X	(62)	X
Bulgaria	3,041	(36)	1,173	(33)	1,868	(39)	253	(83)	141	(68)	(155)	(147)	10,391	(152)
Croatia, Rep	2,674	X	903	X	1,772	X	630	X	192	X	(232)	X	(17,961)	X
Czech Rep	11,758	X	779	X	10,979	X	3,200	X	694	X	(2,080)	X	(93,823)	X
Denmark	2,288	(13)	484	30	1,804	(20)	583	(31)	343	8	204	(120)	(11,858)	(198)
Estonia, Rep	3,240	X	722	X	2,518	X	330	X	42	X	(1,945)	X	(60,710)	X
Finland	47,069	17	4,118	31	42,950	16	9,190	17	10,614	51	6,633	15	(215,949)	79
France	43,086	11	10,456	0	32,630	15	9,894	9	8,432	58	(662)	(68)	(50,674)	70
Germany	37,312	X	3,795	X	33,517	X	13,038	X	14,106	X	(3,922)	X	(60,839)	X
Greece	2,467	(14)	1,393	(33)	1,074	34	337	6	750	164	36	(81)	(90)	(100)
Hungary	4,535	(30)	2,165	(23)	2,370	(36)	426	(66)	314	(36)	(504)	(446)	29,767	751
Iceland	X	X	X	X	X	X	X	X	X	X	10	166	(746)	1
Ireland	2,014	70	60	31	1,954	71	685	142	0	(100)	(400)	28	8,982	169
Italy	9,406	4	5,213	12	4,192	(4)	1,786	(22)	6,509	44	6,593	24	(635,360)	73
Latvia, Rep	5,850	X	1,146	X	4,704	X	899	X	7	X	(2,538)	X	(66,265)	X
Lithuania, Rep	3,940	X	1,507	X	2,433	X	800	X	27	X	(983)	X	(28,363)	X
Macedonia, FYR	160	X	X	X	160	X	54	X	23	X	36	X	380	X
Moldova, Rep	X	X	X	X	X	X	X	X	X	X	18	X	659	X
Netherlands	1,078	12	179	94	899	3	399	13	2,944	58	86	(59)	(36,665)	38
Norway	9,163	(5)	466	(44)	8,697	(2)	2,383	4	2,126	41	2,655	152	(146,158)	266
Poland, Rep	19,004	(21)	2,576	(19)	16,428	(21)	5,070	(25)	1,412	12	(1,208)	(30)	91,041	141
Portugal	9,890	12	598	0	9,292	13	1,632	(28)	935	42	448	(201)	(132,595)	477
Romania	11,659	(50)	2,527	(45)	9,132	(51)	1,988	(58)	337	(58)	5	(108)	(1,038)	(193)
Russian Federation	133,556	X	33,413	X	100,143	X	32,770	X	3,980	X	(12,955)	X	(722,174)	X
Slovak Rep	5,297	X	518	X	4,779	X	632	X	310	X	(714)	X	(28,406)	X
Slovenia, Rep	1,651	X	192	X	1,459	X	513	X	440	X	72	X	3,890	X
Spain	15,007	3	2,714	14	12,293	1	2,907	29	3,512	22	1,535	196	(166,960)	155
Sweden	56,757	8	3,824	(14)	52,933	10	13,771	16	9,078	35	5,452	90	(253,366)	167
Switzerland	4,611	5	842	(2)	3,769	7	1,403	(15)	1,411	45	(148)	(188)	47,567	1,608
Ukraine	X	X	X	X	X	X	X	X	X	X	(7)	X	(982)	X
United Kingdom	7,956	88	260	77	7,697	89	2,197	36	5,777	65	607	(1,319)	(101,413)	608
Yugoslavia, Fed Rep														

	Average Annual Roundwood Production						Average Annual Production				Average Annual Net Trade in Roundwood			
	Total		Fuel and Charcoal		Industrial Roundwood		Sawnwood		Paper		Quantity (a)		Balance of Trade (b)	
	Cubic Meters (000)	Percent Change Since	Cubic Meters (000)	Percent Change Since	Cubic Meters (000)	Percent Change Since	Cubic Meters (000)	Percent Change Since	Metric Tons (000)	Percent Change Since	Cubic Meters (000)	Percent Change Since	Value (million US\$)	Percent Change Since
	1993-95	1983-85	1993-95	1983-85	1993-95	1983-85	1993-95	1983-85	1993-95	1983-85	1993-95	1983-85	1993-95	1983-85
<b>NORTH AMERICA</b>	<b>684,296</b>	<b>11</b>	<b>99,209</b>	<b>(7)</b>	<b>585,087</b>	<b>15</b>	<b>167,236</b>	<b>24</b>	<b>103,460</b>	<b>38</b>	<b>(14,397)</b>	<b>(25)</b>	<b>2,623,671</b>	<b>85</b>
Canada	184,423	12	6,293	(3)	178,130	13	60,620	24	18,199	30	3,655	(411)	(63,975)	(158)
United States	499,873	11	92,916	(7)	406,957	16	106,616	24	85,261	40	(18,059)	1	2,687,559	105
<b>CENTRAL AMERICA</b>	<b>69,766</b>	<b>20</b>	<b>59,594</b>	<b>26</b>	<b>10,173</b>	<b>(4)</b>	<b>4,409</b>	<b>28</b>	<b>2,825</b>	<b>16</b>	<b>(251)</b>	<b>(472)</b>	<b>14,084</b>	<b>(216)</b>
Belize	188	19	126	4	62	64	14	(25)	X	X	(3)	743	342	326
Costa Rica	4,550	34	3,287	30	1,263	46	775	105	20	51	8	1,417	(543)	266
Cuba	3,148	(4)	2,537	(8)	611	17	130	23	57	(53)	0	(99)	(7)	(100)
Dominican Rep	982	1	976	1	6	0	X	X	7	(26)	8	(75)	(598)	(88)
El Salvador	6,657	21	6,511	20	146	72	70	64	17	9	5	X	(372)	X
Guatemala	13,857	42	13,111	36	746	340	390	245	23	46	1	55	(193)	(737)
Haiti	6,294	21	6,055	22	239	0	14	0	X	X	1	X	(75)	X
Honduras	6,306	28	5,703	35	603	(14)	324	(27)	X	X	(68)	2,061	13,140	2,298
Jamaica	742	19	679	27	63	(30)	19	(34)	2	(88)	16	1,611	(4,169)	1,290
Mexico	22,116	11	16,097	24	6,019	(15)	2,527	26	2,670	21	(286)	(2,389)	14,505	(606)
Nicaragua	3,662	19	3,530	36	132	(73)	55	(75)	X	X	1	1,081	(118)	292
Panama	1,053	11	935	22	118	(34)	37	(23)	28	(24)	10	(234)	(970)	373
Trinidad and Tobago	61	(2)	22	0	39	(3)	50	148	X	X	4	(41)	(543)	(60)
<b>SOUTH AMERICA</b>	<b>382,557</b>	<b>27</b>	<b>256,063</b>	<b>21</b>	<b>126,494</b>	<b>39</b>	<b>26,785</b>	<b>11</b>	<b>8,793</b>	<b>42</b>	<b>(9,110)</b>	<b>775</b>	<b>451,115</b>	<b>1,731</b>
Argentina	11,756	4	5,519	(4)	6,236	13	1,053	7	943	5	(762)	(10,176)	49,615	(3,622)
Bolivia	2,430	92	1,296	23	1,134	434	205	346	0	(100)	(12)	X	5,393	X
Brazil	280,572	22	197,395	20	83,177	26	18,803	7	5,646	51	(1,225)	(13,816)	64,852	(1,278)
Chile	30,962	103	9,859	54	21,103	139	3,280	70	551	50	(6,848)	541	308,097	782
Colombia	20,240	15	17,504	20	2,736	(7)	661	0	652	60	(7)	X	793	X
Ecuador	8,470	27	4,735	9	3,735	59	1,165	(2)	88	159	(37)	X	3,211	X
Guyana	417	109	34	113	383	109	76	17	X	X	(16)	(5)	1,979	(1)
Paraguay	10,061	37	6,219	32	3,843	46	357	(52)	13	15	(3)	X	65	X
Peru	11,099	45	9,423	45	1,676	47	630	34	158	9	1	70	(97)	(37)
Suriname	118	(44)	19	41	99	(50)	30	(52)	X	X	(7)	(63)	1,056	(40)
Uruguay	4,089	32	3,046	7	1,043	309	269	526	84	89	(202)	X	16,296	(24,065)
Venezuela	2,212	74	943	47	1,269	103	239	(1)	657	24	10	(79)	(607)	(92)
<b>ASIA</b>	<b>1,137,710</b>	<b>X</b>	<b>878,628</b>	<b>X</b>	<b>259,083</b>	<b>X</b>	<b>98,720</b>	<b>X</b>	<b>72,153</b>	<b>X</b>	<b>52,720</b>	<b>X</b>	<b>(8,492,747)</b>	<b>X</b>
Afghanistan, Islamic State	7,260	24	5,625	28	1,636	11	400	0	X	X	(5)	X	178	X
Armenia, Rep	X	X	X	X	X	X	X	X	X	X	0	X	(1)	X
Azerbaijan	X	X	X	X	X	X	X	X	X	X	(1)	X	82	X
Bangladesh	31,353	20	30,627	22	726	(29)	79	(43)	157	17	4	(88)	(483)	(84)
Bhutan	1,393	2	1,336	20	57	(77)	18	200	X	X	38	(614)	(782)	(460)
Cambodia	7,429	40	6,531	38	898	58	175	307	0	X	(463)	X	102,495	X
China (g)	300,863	17	202,726	21	98,137	10	25,197	(2)	25,468	162	4,262	(68)	(733,136)	(25)
Georgia	X	X	X	X	X	X	X	X	X	X	(1)	X	(39)	X
India	294,016	21	269,223	22	24,793	8	17,460	9	2,837	85	272	3,520	(37,277)	3,502
Indonesia	185,206	20	148,949	19	36,257	27	7,271	9	3,178	647	(1,375)	(38)	21,238	(88)
Iran, Islamic Rep	7,489	12	2,547	7	4,942	15	169	(3)	223	186	(2)	(102)	(59)	(100)
Iraq	157	18	107	29	50	0	8	0	16	(42)	X	X	X	X
Israel	113	(4)	13	18	100	(7)	X	X	239	64	203	35	(41,320)	88
Japan	24,668	(25)	360	(35)	24,308	(24)	25,553	(12)	28,652	48	46,670	13	(7,092,729)	93
Jordan	10	30	6	64	4	0	X	X	30	264	10	(69)	(1,830)	(60)
Kazakhstan, Rep	X	X	X	X	X	X	X	X	X	X	(15)	X	(1,262)	X
Korea, Dem People's Rep	4,876	9	4,276	11	600	0	280	0	80	0	(76)	(262)	3,728	(167)
Korea, Rep	6,485	(15)	4,491	(17)	1,994	(10)	3,500	10	6,372	194	9,042	47	(1,167,199)	110
Kuwait	X	X	X	X	X	X	X	X	X	X	50	23	(2,827)	62
Kyrgyz Rep	X	X	X	X	X	X	X	X	X	X	1	X	81	X
Lao People's Dem Rep	5,148	47	4,382	35	765	181	380	1,600	X	X	(195)	1,910	40,709	965
Lebanon	497	6	490	9	7	(64)	9	(58)	42	(7)	46	196	(1,524)	361
Malaysia	46,333	17	9,601	29	36,731	15	8,850	42	634	1,185	(8,445)	(54)	1,012,700	(11)
Mongolia	541	(77)	376	(72)	165	(84)	157	(67)	X	X	(24)	X	1,472	X
Myanmar	23,053	22	20,078	28	2,975	(7)	344	(47)	15	26	(1,171)	345	192,114	142
Nepal	20,317	28	19,697	29	620	11	620	182	13	926	0	(100)	(2)	(100)
Oman	X	X	X	X	X	X	X	X	X	X	(0)	(101)	(327)	(89)
Pakistan	29,229	43	27,329	42	1,900	65	1,299	119	395	413	116	541	(8,653)	373
Philippines	39,277	11	35,793	25	3,483	(48)	375	(68)	550	97	274	(122)	(192,636)	(281)
Saudi Arabia	X	X	X	X	X	X	X	X	X	X	113	(39)	(9,641)	(73)
Singapore	120	X	120	X	0	X	25	X	93	833	(45)	(115)	(5,035)	(87)
Sri Lanka	9,498	11	8,815	13	683	(2)	5	(80)	30	35	1	(101)	(539)	(121)
Syrian Arab Rep	55	8	20	17	35	3	9	0	1	(73)	11	(68)	(1,078)	(91)
Tajikistan, Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Thailand	38,908	10	36,132	16	2,776	(35)	733	(25)	1,643	310	1,326	(1,690)	(297,842)	797
Turkey	18,334	(3)	8,546	(34)	9,788	63	4,536	(4)	1,123	121	1,575	(2,076)	(181,528)	(1,742)
Turkmenistan, Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X
United Arab Emirates	X	X	X	X	X	X	X	X	X	X	56	X	(2,504)	X
Uzbekistan, Rep	X	X	X	X	X	X	X	X	X	X	0	X	31	X
Vietnam	34,213	21	29,813	24	4,399	3	721	85	120	121	(248)	(2,479)	20,765	(2,083)
Yemen	324	17	324	17	X	X	X	X	X	X	0	(94)	(21)	(99)
<b>OCEANIA</b>	<b>48,468</b>	<b>35</b>	<b>8,750</b>	<b>2</b>	<b>39,718</b>	<b>45</b>	<b>6,645</b>	<b>20</b>	<b>3,021</b>	<b>37</b>	<b>(16,105)</b>	<b>78</b>	<b>1,509,533</b>	<b>434</b>
Australia	21,558	20	2,898	6	18,660	23	3,436	12	2,153	44	(7,524)	20	367,438	139
Fiji	562	147	37	9	525	172	108	28	X	X	(394)	5,472	16,626	3,815
New Zealand	16,482	75	50	0	16,432	75	2,870	31	868	22	(5,440)	384	476,986	1,133
Papua New Guinea	8,955	18	5,533	0	3,422	64	185	52	X	X	(2,250)	72	545,137	683
Solomon Islands	702	29	138	18	564	32	13	(18)	X	X	X	X	X	X
<b>DEVELOPING</b>	<b>2,060,995</b>	<b>20</b>	<b>1,638,028</b>	<b>20</b>	<b>422,966</b>	<b>(9)</b>	<b>111,975</b>	<b>10</b>	<b>58,723</b>	<b>136</b>	<b>(10,284)</b>	<b>25</b>	<b>547,616</b>	<b>253</b>
<b>DEVELOPED</b>	<b>1,254,267</b>	<b>(11)</b>	<b>196,902</b>	<b>(24)</b>	<b>1,057,365</b>	<b>(18)</b>	<b>319,119</b>	<b>(10)</b>	<b>215,140</b>	<b>33</b>	<b>21,932</b>	<b>47</b>	<b>(4,343,572)</b>	<b>82</b>

Notes: a. Quantity of net trade is defined as the balance of imports minus exports. b. Balance of trade is defined as exports minus imports. c. World and regional totals include countries not listed here. d. Includes Eritrea. e. Includes Namibia. f. Includes Luxembourg. g. Includes Taiwan.

**Data Table 11.4**  
**Land Area and Use, 1982–94**

Sources: Food and Agriculture Organization of the United Nations and United Nations Population Division

	Land Area (000 hectares)	Population Density (per 1,000 hectares) 1996	Domes-ticated Land as a % of Land Area {a} 1994	Land Use (000 hectares)							
				Cropland		Permanent Pasture		Forest & Woodland		Other Land	
				1992-94	Percent Change Since 1982-84	1992-94	Percent Change Since 1982-84	1992-94	Percent Change Since 1982-84	1992-94	Percent Change Since 1982-84
<b>WORLD (b)</b>	<b>13,048,300</b>	<b>442</b>	<b>37</b>	<b>1,465,814</b>	<b>2.0</b>	<b>3,410,203</b>	<b>3.2</b>	<b>4,177,088</b>	<b>(2.2)</b>	<b>3,992,533</b>	<b>(1.0)</b>
<b>AFRICA</b>	<b>2,963,468</b>	<b>249</b>	<b>36</b>	<b>189,803</b>	<b>6.5</b>	<b>889,350</b>	<b>0.0</b>	<b>713,405</b>	<b>(0.3)</b>	<b>1,171,024</b>	<b>(0.8)</b>
Algeria	238,174	121	17	8,088	9.1	31,024	(2.8)	3,949	(10.0)	195,197	0.4
Angola	124,670	90	46	3,500	2.9	54,000	0.0	23,000	(0.9)	44,170	0.2
Benin	11,062	503	21	1,880	3.9	442	0.0	3,400	(11.0)	5,340	7.0
Botswana	56,673	26	46	4,220	5.0	25,600	0.0	26,500	0.0	4,153	(0.5)
Burkina Faso	27,360	394	34	3,465	18.0	6,000	0.0	13,800	0.0	4,082	(11.7)
Burundi	2,568	2,423	86	1,120	(5.1)	1,080	9.1	325	0.0	43	(41.1)
Cameroon	46,540	291	19	7,040	1.2	2,000	0.0	35,900	0.0	1,600	(4.9)
Central African Rep	62,298	54	8	2,020	2.5	3,000	0.0	46,700	0.0	10,578	(0.5)
Chad	125,920	52	38	3,256	3.4	45,000	0.0	32,400	0.0	45,264	(0.2)
Congo, Dem Rep	34,150	78	30	170	9.9	10,000	0.0	19,900	0.0	4,080	(0.4)
Congo, Rep	226,705	206	10	7,900	2.5	15,000	0.0	166,000	0.0	37,805	(0.5)
Côte d'Ivoire	31,800	441	54	4,031	22.5	13,000	0.0	9,600	(5.9)	5,149	(3.0)
Egypt	99,545	636	3	3,137	26.5	X	X	34	9.7	96,374	(0.7)
Equatorial Guinea	2,805	146	12	230	0.0	104	0.0	1,830	0.0	641	0.0
Eritrea	10,000	328	75	366	X	4,622	X	523	X	1,155	X
Ethiopia	100,000	582	31	12,197	X	28,267	X	13,633	X	49,269	X
Gabon	25,767	43	20	460	1.8	4,700	0.0	19,900	(0.4)	707	11.3
Gambia, The	1,000	1,141	37	165	(10.6)	194	2.1	94	(6.0)	547	4.1
Ghana	22,754	784	57	4,407	15.0	8,400	0.0	9,300	(3.1)	647	(29.7)
Guinea	24,572	306	47	787	10.2	10,700	0.0	6,700	0.0	6,385	(1.1)
Guinea-Bissau	2,812	388	50	340	10.3	1,080	0.0	1,070	0.0	322	(9.0)
Kenya	56,914	488	45	4,520	5.6	21,300	0.0	16,800	0.0	14,294	(1.6)
Lesotho	3,035	685	76	320	10.6	2,000	0.0	X	X	715	(4.1)
Liberia	9,632	233	25	371	(0.1)	2,000	0.0	4,600	0.0	2,661	0.0
Libya	175,954	32	9	2,170	3.1	13,300	0.3	840	33.0	159,644	(0.2)
Madagascar	58,154	264	47	3,105	3.1	24,000	0.0	23,200	0.0	7,849	(1.2)
Malawi	9,408	1,046	38	1,700	19.9	1,840	0.0	3,700	(1.1)	2,168	(10.0)
Mali	122,019	91	27	2,569	25.1	30,000	0.0	11,800	(1.7)	77,650	(0.4)
Mauritania	102,522	23	38	208	6.7	39,250	0.0	4,410	(2.0)	58,654	0.1
Mauritius	203	5,562	56	106	(0.9)	7	0.0	44	(24.1)	46	48.4
Morocco	44,630	605	68	9,686	13.9	20,933	0.2	8,613	9.9	5,397	(28.8)
Mozambique	78,409	227	60	3,180	3.2	44,000	0.0	17,300	0.0	13,929	(0.7)
Namibia	82,329	19	47	704	6.6	38,000	0.0	12,500	0.0	31,125	(0.1)
Niger	126,670	75	12	4,035	13.9	10,440	13.1	2,500	0.0	109,695	(1.5)
Nigeria	91,077	1,263	80	32,579	6.1	40,000	0.0	14,300	(10.6)	4,198	(3.9)
Rwanda	2,467	2,188	75	1,150	5.4	695	(0.7)	250	0.0	372	(12.7)
Senegal	19,253	443	42	2,355	0.2	5,700	0.0	7,467	(1.8)	3,731	3.6
Sierra Leone	7,162	600	38	540	4.4	2,201	(0.1)	1,947	2.5	2,474	(2.6)
Somalia	62,734	157	70	1,026	1.1	43,000	0.0	16,000	6.7	2,708	(27.2)
South Africa	122,104	347	79	15,200	15.4	81,433	0.1	8,200	0.0	17,271	(10.8)
Sudan	237,600	115	52	12,975	3.3	110,000	12.2	42,367	(1.5)	72,258	(14.0)
Swaziland	1,720	512	73	191	24.3	1,070	(5.1)	119	16.6	340	0.9
Tanzania	88,359	349	44	3,660	23.7	35,000	0.0	33,067	(1.9)	16,632	(0.4)
Togo	5,439	772	48	2,420	2.5	200	0.0	900	(11.8)	1,919	3.2
Tunisia	15,536	589	51	4,882	(0.1)	3,416	1.8	666	17.1	6,602	(1.8)
Uganda	19,965	1,015	43	6,780	9.1	1,800	0.0	6,300	5.0	5,085	(14.6)
Zambia	74,339	111	47	5,273	2.2	30,000	0.0	32,000	6.7	7,066	(23.0)
Zimbabwe	38,685	296	52	2,876	2.5	17,190	0.5	8,800	(7.4)	9,819	5.8
<b>EUROPE</b>	<b>2,260,320</b>	<b>322</b>	<b>22</b>	<b>317,837</b>	<b>X</b>	<b>178,549</b>	<b>X</b>	<b>947,761</b>	<b>X</b>	<b>816,036</b>	<b>X</b>
Albania	2,740	1,241	41	702	(1.2)	424	5.6	1,049	1.7	565	(5.2)
Austria	8,273	980	43	1,506	(3.3)	1,985	(1.0)	3,233	(0.3)	1,550	5.4
Belarus, Rep	20,748	499	44	6,245	X	3,070	X	7,109	X	4,324	X
Belgium (c)	3,282	3,221	45	790	2.4	687	(9.0)	709	2.0	1,095	3.4
Bosnia and Herzegovina	5,100	711	39	893	X	1,200	X	2,033	X	973	X
Bulgaria	11,055	766	54	4,286	3.5	1,811	(11.0)	3,348	0.1	1,609	5.0
Croatia, Rep	5,592	805	41	1,242	X	1,088	X	2,075	X	1,187	X
Czech Rep	7,728	1,326	55	2,265	X	588	X	1,753	X	547	X
Denmark	4,243	1,234	63	2,488	(5.3)	241	2.1	417	(13.8)	1,097	23.1
Estonia, Rep	4,227	348	34	1,145	X	311	X	2,018	X	753	X
Finland	30,459	168	9	2,585	4.5	112	(21.7)	23,186	(0.6)	4,575	1.2
France	55,010	1,060	55	19,387	1.7	10,830	(13.4)	14,938	2.3	9,854	11.5
Germany	34,927	2,346	50	11,885	(4.5)	5,255	(10.8)	10,700	4.0	7,087	12.5
Greece	12,890	814	68	3,502	(11.3)	5,252	(0.1)	2,620	0.0	1,516	42.2
Hungary	9,234	1,088	66	4,973	(6.1)	1,156	(9.4)	1,717	5.1	1,388	34.5
Iceland	10,025	27	23	6	(21.7)	2,274	0.0	120	0.0	7,625	0.0
Ireland	6,889	516	64	1,266	21.6	3,137	(32.8)	570	14.0	1,916	181.8
Italy	29,406	1,946	53	11,594	(5.8)	4,479	(11.2)	6,794	6.4	6,519	14.9
Latvia, Rep	6,205	404	41	1,720	X	808	X	2,841	X	836	X
Lithuania, Rep	6,480	575	54	3,041	X	472	X	1,983	X	984	X
Macedonia, FYR	2,543	855	51	662	X	638	X	1,035	X	227	X
Moldova, Rep	3,297	1,348	78	2,195	X	363	X	358	X	381	X
Netherlands	3,392	4,592	58	922	10.8	1,060	(10.0)	334	12.6	1,076	(0.9)
Norway	30,683	142	3	891	5.1	124	25.7	8,330	0.0	21,338	(0.3)
Poland, Rep	30,442	1,268	61	14,673	(1.0)	4,049	(0.7)	8,732	0.7	2,988	3.9
Portugal	9,150	1,072	43	3,057	(3.0)	900	7.4	3,102	4.6	2,091	(4.7)
Romania	23,034	984	64	9,942	(5.8)	4,851	9.6	6,681	1.8	1,559	4.6
Russian Federation	1,688,850	88	13	133,072	X	86,858	X	767,347	X	701,573	X
Slovak Rep	4,808	1,112	51	1,074	X	557	X	1,326	X	249	X
Slovenia, Rep	2,012	956	39	296	X	540	X	1,077	X	98	X
Spain	49,944	794	62	19,910	(2.9)	10,416	0.5	16,063	3.1	3,555	1.7
Sweden	41,162	214	8	2,776	(5.6)	576	(17.0)	28,025	0.1	9,652	1.3
Switzerland	3,955	1,827	40	433	5.1	1,148	(28.6)	1,186	12.7	1,187	34.6
Ukraine	57,935	891	72	34,410	X	7,483	X	9,239	X	6,803	X
United Kingdom	24,160	2,407	71	6,224	(10.9)	11,090	(1.4)	2,390	8.2	4,456	19.7
Yugoslavia, Fed Rep	10,200	1,009	61	4,080	X	2,119	X	1,769	X	2,233	X

	Land Area (000 hectares)	Population Density (per 1,000 hectares) 1996	Domes- ticated Land as a % of Land Area (a) 1994	Land Use (000 hectares)							
				Cropland		Permanent Pasture		Forest & Woodland		Other Land	
				1992-94	Percent Change Since 1982-84	1992-94	Percent Change Since 1982-84	1992-94	Percent Change Since 1982-84	1992-94	Percent Change Since 1982-84
<b>NORTH AMERICA</b>	<b>1,838,009</b>	<b>163</b>	<b>27</b>	<b>233,276</b>	<b>(1.1)</b>	<b>267,072</b>	<b>(1.2)</b>	<b>749,290</b>	<b>2.9</b>	<b>588,371</b>	<b>(2.6)</b>
Canada	922,097	32	8	45,500	(1.3)	27,900	(3.1)	453,300	3.9	395,397	(3.8)
United States	915,912	294	47	187,776	(1.1)	239,172	(1.0)	295,990	1.5	192,974	(0.0)
<b>CENTRAL AMERICA</b>	<b>264,835</b>	<b>475</b>	<b>53</b>	<b>40,053</b>	<b>5.4</b>	<b>98,503</b>	<b>6.2</b>	<b>74,524</b>	<b>1.2</b>	<b>85,910</b>	<b>(9.2)</b>
Belize	2,280	96	6	81	52.2	49	11.4	2,100	0.0	50	(39.4)
Costa Rica	5,106	685	56	530	2.9	2,340	6.9	1,570	(3.4)	666	(14.4)
Cuba	10,982	1,003	61	3,745	12.4	2,705	0.8	2,505	(6.2)	2,027	(11.8)
Dominican Rep	4,838	1,646	81	1,743	21.9	2,090	(0.1)	603	(4.1)	401	(41.6)
El Salvador	2,072	2,797	65	742	2.3	600	(1.6)	105	(13.9)	625	1.7
Guatemala	10,843	1,008	42	1,858	4.1	2,568	65.5	5,212	15.8	1,171	(60.9)
Haiti	2,756	2,634	51	910	1.2	495	(2.2)	140	0.0	1,211	0.0
Honduras	11,189	520	32	1,967	11.0	1,524	1.6	6,000	0.0	1,698	(11.4)
Jamaica	1,083	2,300	44	219	(1.9)	257	0.0	185	(3.8)	422	2.8
Mexico	190,869	486	55	24,730	0.2	79,000	6.0	48,700	4.3	38,439	(14.6)
Nicaragua	12,140	349	61	2,480	55.6	4,815	0.0	3,200	(22.9)	1,645	4.0
Panama	7,443	360	29	662	14.0	1,483	9.1	3,260	(16.0)	2,038	25.6
Trinidad and Tobago	513	2,528	26	122	3.4	11	0.0	235	3.5	145	(7.6)
<b>SOUTH AMERICA</b>	<b>1,752,925</b>	<b>184</b>	<b>35</b>	<b>113,116</b>	<b>9.0</b>	<b>495,341</b>	<b>3.0</b>	<b>934,860</b>	<b>0.6</b>	<b>209,471</b>	<b>(12.3)</b>
Argentina	273,669	129	62	27,200	0.0	142,000	(0.6)	50,900	0.0	53,569	1.7
Bolivia	108,438	70	27	2,370	8.9	26,500	(1.7)	58,000	0.0	21,565	1.2
Brazil	845,651	190	29	58,667	15.0	185,600	5.9	557,667	0.8	43,718	(34.1)
Chile	74,880	193	23	4,216	(2.0)	13,100	(0.4)	16,500	0.0	41,030	0.3
Colombia	103,870	351	45	6,073	15.7	40,083	(0.0)	53,167	(3.3)	4,547	29.1
Ecuador	27,684	423	29	3,010	20.8	5,009	11.1	15,600	0.6	4,065	(21.6)
Guyana	19,685	43	9	496	0.2	1,230	0.3	16,456	0.5	1,503	(5.7)
Paraguay	39,730	125	60	2,270	17.6	21,700	27.6	12,850	(31.6)	2,910	43.6
Peru	128,000	187	24	3,767	3.3	27,120	0.0	84,800	(0.1)	12,213	(1.4)
Suriname	15,600	28	1	68	19.3	21	12.5	15,000	0.8	511	(21.3)
Uruguay	17,481	183	85	1,304	(5.0)	13,520	(0.5)	930	0.0	1,727	8.8
Venezuela	88,205	253	25	3,663	(3.0)	18,242	2.7	45,000	22.3	21,300	(28.7)
<b>ASIA</b>	<b>3,085,414</b>	<b>1,130</b>	<b>51</b>	<b>520,175</b>	<b>X</b>	<b>1,051,311</b>	<b>X</b>	<b>556,996</b>	<b>X</b>	<b>956,913</b>	<b>X</b>
Afghanistan, Islamic State	65,209	320	58	8,054	0.0	30,000	0.0	1,700	(10.5)	25,455	0.8
Armenia, Rep	2,820	1,290	46	582	X	688	X	413	X	1,137	X
Azerbaijan	8,660	877	48	1,967	X	2,200	X	950	X	3,543	X
Bangladesh	13,017	9,224	71	8,849	(3.1)	600	0.0	1,891	(11.3)	1,677	45.2
Bhutan	4,700	386	9	136	7.7	273	2.5	3,100	14.2	1,191	(25.2)
Cambodia	17,652	582	30	3,832	81.9	1,500	158.5	12,200	(7.3)	120	(93.4)
China	929,100	1,321	53	95,145	(3.6)	400,000	12.5	128,630	(1.1)	305,324	(11.4)
Georgia	6,970	781	43	1,036	X	1,962	X	2,988	X	984	X
India	297,319	3,177	61	169,569	0.5	11,424	(4.8)	68,173	1.2	48,136	(2.1)
Indonesia	181,157	1,107	23	31,146	19.9	11,800	1.2	111,516	(2.6)	26,695	(8.1)
Iran, Islamic Rep	162,200	431	39	18,500	21.7	44,000	0.0	11,400	0.0	88,300	(3.6)
Iraq	43,737	471	22	5,550	1.9	4,000	0.0	192	0.0	33,995	(0.3)
Israel	2,062	2,747	28	434	4.6	145	5.8	126	16.7	1,357	(3.2)
Japan	37,652	3,329	13	4,467	(7.0)	660	8.9	25,110	(0.2)	7,416	4.8
Jordan	8,893	628	13	405	17.1	791	0.0	70	5.5	7,627	(0.8)
Kazakhstan, Rep	267,073	63	83	35,239	X	186,549	X	9,600	X	35,685	X
Korea, Dem People's Rep	12,041	1,866	17	2,007	3.7	50	0.0	7,370	0.0	2,614	(2.7)
Korea, Rep	9,873	4,590	22	2,053	(5.3)	91	30.8	6,460	(1.3)	1,270	16.5
Kuwait	1,782	947	8	5	114.3	137	2.2	2	0.0	1,638	(0.3)
Kyrgyz Rep	19,180	233	54	1,387	X	8,900	X	730	X	8,163	X
Lao People's Dem Rep	23,080	218	7	900	18.5	800	0.0	12,560	(4.1)	8,820	4.7
Lebanon	1,023	3,015	31	306	2.7	14	40.0	80	(3.6)	623	(1.5)
Malaysia	32,855	626	24	7,536	46.6	281	8.9	22,248	0.0	2,790	(46.4)
Mongolia	156,650	16	76	1,357	4.4	117,983	(4.4)	13,750	(9.4)	23,560	40.5
Myanmar	65,755	698	16	10,067	(0.1)	354	(1.8)	32,398	0.8	22,935	(1.0)
Nepal	14,300	1,540	31	2,556	10.0	1,757	(9.4)	5,750	4.7	4,237	(6.8)
Oman	21,246	108	5	63	44.3	1,000	0.0	X	X	20,183	(0.1)
Pakistan	77,088	1,816	34	21,323	4.7	5,000	0.0	3,477	15.1	47,288	(2.9)
Philippines	29,817	2,324	36	9,320	5.0	1,280	14.3	13,600	15.6	5,617	(30.3)
Saudi Arabia	214,969	88	58	3,777	67.6	120,000	38.5	1,800	33.3	89,392	(28.3)
Singapore	61	55,475	2	1	(83.3)	X	X	3	0.0	57	9.6
Sri Lanka	6,463	2,801	36	1,889	1.3	440	0.2	2,100	20.2	2,034	(15.6)
Syrian Arab Rep	18,378	793	78	5,985	5.2	8,191	(1.8)	484	(2.4)	3,718	(3.6)
Tajikistan, Rep	14,060	422	31	846	X	3,533	X	537	X	9,144	X
Thailand	51,089	1,149	42	20,488	6.7	800	14.3	14,833	(3.7)	14,968	(5.1)
Turkey	76,963	803	52	27,611	2.1	12,378	22.2	20,199	0.0	16,775	(14.4)
Turkmenistan, Rep	46,993	88	67	1,471	X	33,202	X	4,000	X	8,320	X
United Arab Emirates	8,360	270	4	75	148.4	280	40.0	3	0.0	8,002	(1.5)
Uzbekistan, Rep	41,424	560	61	4,618	X	21,490	X	1,311	X	14,005	X
Vietnam	32,549	2,310	22	6,738	2.3	328	5.1	9,650	(3.9)	15,833	1.4
Yemen	52,797	297	33	1,520	3.8	16,065	0.0	2,000	(25.0)	33,212	1.9
<b>OCEANIA</b>	<b>849,135</b>	<b>34</b>	<b>57</b>	<b>51,553</b>	<b>1.4</b>	<b>430,077</b>	<b>(2.8)</b>	<b>200,252</b>	<b>(0.2)</b>	<b>164,807</b>	<b>6.3</b>
Australia	768,230	24	60	47,023	1.7	415,700	(2.8)	145,000	(0.4)	158,057	6.4
Fiji	1,827	436	24	260	40.5	174	29.1	1,185	0.0	208	(35.5)
New Zealand	26,799	134	62	3,307	(5.5)	13,774	(2.2)	7,667	2.6	2,051	17.2
Papua New Guinea	45,286	97	1	423	13.4	90	(4.6)	42,000	0.0	2,776	(1.5)
Solomon Islands	2,799	140	3	57	6.9	39	0.0	2,450	(2.8)	253	35.5
<b>DEVELOPING</b>	<b>7,585,948</b>	<b>605</b>	<b>39</b>	<b>797,124</b>	<b>4.8</b>	<b>2,194,347</b>	<b>4.6</b>	<b>2,273,406</b>	<b>(0.0)</b>	<b>2,320,992</b>	<b>(5.4)</b>
<b>DEVELOPED</b>	<b>5,462,356</b>	<b>215</b>	<b>34</b>	<b>668,690</b>	<b>(1.1)</b>	<b>1,215,856</b>	<b>1.0</b>	<b>1,903,683</b>	<b>(4.8)</b>	<b>1,671,541</b>	<b>5.9</b>

Notes: a. Domesticated land is the sum of cropland and permanent pasture. b. Does not include Antarctica. World and regional totals include countries not listed here.

c. Includes Luxembourg. d. Includes Taiwan.

## Sources and Technical Notes

### Data Table 11.1

#### Forest Cover and Change, and Forest Industry Structure, 1980–95

**Sources:** Forest cover and change: Food and Agriculture Organization of the United Nations (FAO), Forest Resources Division, *State of the World's Forests 1997* (FAO, Rome, 1997) and *Forest Resources Assessment 1990: Global Synthesis (FRA 1990)* (FAO, Rome, 1995). Forest industry data: International Tropical Timber Organization (ITTO), *Annual Review and Assessment of the World Tropical Timber Situation 1996* (ITTO, Yokohama, Japan, 1997).

*Total forest* consists of all forest area for temperate developed countries, and the sum of natural forest and plantation area categories for tropical and temperate developing countries. For developed countries, forest cover data were obtained from official sources in response to a questionnaire from the United Nations Economic Commission for Europe and the FAO liaison office in Geneva (UN-ECE/FAO). The countries surveyed include countries in Europe, North America, and the former Soviet Union, as well as Japan, Australia, and New Zealand. Forest areas in developed countries are defined as land where tree crowns cover 20 percent of the area, including open forests; forest roads and fire breaks; temporarily cleared areas; young stands expected to achieve at least 20 percent crown cover upon maturity, etc. Forest areas in developed countries are not broken down into the subcategories of natural forests and plantations due to the difficulty in distinguishing the two in many countries. Comparable forest area data for 1980 are only available for developing countries due to methodological constraints.

FAO defines a *natural forest* in tropical and temperate developing countries as a forest composed primarily of indigenous (native) tree species. Natural forests include closed forest, where trees cover a high proportion of the ground and where grass does not form a continuous layer on the forest floor (e.g., broadleaved forests, coniferous forests, and bamboo forests), and open forest, which FAO defines as mixed forest/grasslands with at least 10 percent tree cover and a continuous grass layer on the forest floor. Natural forests in tropical and temperate developing countries encompass all stands except plantations and include stands that have been degraded to some degree by agriculture, fire, logging, and other factors. For all regions, trees are distinguished from shrubs on the basis of height. A mature tree has a single well-defined stem and is taller than 7 meters. A mature shrub is usually less than 7 meters tall.

*Plantations* refer to forest stands established artificially by afforestation and reforestation for in-

dustrial and nonindustrial usage. Reforestation does not include regeneration of old tree crops (through either natural regeneration or forest management), although some countries may report regeneration as reforestation. Many trees are also planted for nonindustrial uses, such as village wood lots. Reforestation data often exclude this component. The data presented here reflect plantation survival rates as estimated by FAO.

*Average annual percent change* is shown as a percentage of the exponential growth rate. If negative (in parentheses), these figures reflect net deforestation, which is defined as the clearing of forest lands for all forms of agricultural uses (shifting cultivation, permanent agriculture, and ranching) and for other land uses such as settlements, other infrastructure, and mining. In tropical countries, this entails clearing that reduces tree crown cover to less than 10 percent. It should be noted that deforestation, as defined here, does not reflect changes within the forest stand or site, such as selective logging (unless the forest cover is permanently reduced to less than 10 percent). Such changes are termed forest degradation, and they can substantially affect forests, forest soil, wildlife and its habitat, and the global carbon cycle. Thus, the effects from the reported deforestation figures may be less than the effects from the total deforestation that includes all types of forest alterations. Positive change figures reflect net afforestation within a country or region.

*Forest area* information for tropical and temperate developing countries is based on FAO's forest assessments. It is extracted mainly from the publication *State of the World's Forests 1997*. Only forest cover data for 1980 and plantation figures for 1990 are based on FAO's *Forest Resources Assessment 1990: Global Synthesis* (FRA 1990). Comparable plantation figures for 1995 were not sufficiently reliable for publication. Please note that forest cover data for 1980 were estimated by the World Resources Institute based on the *FRA 1990* natural forest and plantation figures. FAO's forest assessments produce consistent estimates on forest status for common reference years (1980, 1990, and 1995) and forest area change for the periods between these years. The estimates are made using a model to adjust baseline forest inventory data from each country to the common reference years. This model correlates the share of forest cover for each subnational unit to population density and growth, initial forest extent, and ecological zone. Existing forest inventory data at national and subnational scales are reviewed, adjusted to a common set of classifications and concepts, and combined in a database. To accomplish this, FAO uses a geographic information system to integrate statistical and map data. For the latest update (1995), forest inventory data additional to that available for the 1990 assessment was used for Brazil, Bolivia, Mexico, Cambodia,

Papua New Guinea, the Philippines, Côte d'Ivoire, Guinea-Bissau, and Sierra Leone.

The reliability of these modeled estimates hinges partly on the quality of the primary data sources feeding into the model. For the *FRA 1990*, FAO assessed the quality and appropriateness of the national forestry inventories and their contribution to the reliability of the reported state and change assessments. The variation in quality, comprehensiveness, and timeliness of the forest information is tremendous, and acute information deficits in regard to forest resources can easily be observed.

Although the deforestation model allowed standardization of country data to a common baseline, a number of additional factors may have contributed to discrepancies in forest area and change estimates for specific countries. Potential forest cover estimates for dry forests and the related adjustment function are of unknown reliability; in addition, for some countries, socioeconomic factors such as livestock projects in Central America and resettlement schemes in Indonesia may have played a larger role in deforestation. FAO acknowledged these shortcomings implicitly and noted that country estimates are "not intended to replace the original country information, which remain a unique source of reference."

Because of these shortcomings, readers are encouraged to refer to the original sources and the latest country inventories that use satellite data or extensive ground data for estimates of forest cover and deforestation.

Figures for the *number of enterprises* and *number of employees* in the *forest industry* are obtained for ITTO producer countries through responses to the ITTO Forecasting and Statistics Enquiry. In 1995 there were 25 ITTO producer countries. For those countries that did not respond to the 1995 Enquiry, estimates are provided by ITTO based on FAO statistical reports, Year 2000 progress reports, ITTO project reports, trade association statistics, etc. Figures are for enterprises and employees participating in forestry activities including logging and processing mills (sawmills, veneer mills, plywood mills, etc.).

### Data Table 11.2

#### Forest Ecosystems, 1996

**Sources:** Land area: Food and Agriculture Organization of the United Nations (FAO), *FAOSTAT Statistics Database*. Available online at <http://www.fao.org> (FAO, Rome, 1997). Closed forest data: D. Bryant, D. Nielsen, and L. Tangle, *The Last Frontier Forests: Ecosystems and Economies on the Edge* (World Resources Institute, Washington, D.C., 1997). Forest ecosystems: S. Iremonger, C. Ravillious, and T. Quinton, "A Statistical Analysis of Global Forest Conservation," in S. Iremonger, C. Ravillious, and T. Quinton, eds., *A Global Overview*

of *Forest Conservation CD-ROM* (World Conservation Monitoring Centre [WCMC] and Centre for International Forestry Research, Cambridge, U.K., 1997).

*Closed forests* exclude some woodlands and wooded savannah.

*Original forest as a percentage of land area* refers to the estimate of the percentage of land that would have been covered by closed forest about 8,000 years ago assuming current climatic conditions, before large-scale disturbance by human society began. These data of estimated forest cover were developed by WCMC based on numerous global and regional biogeographic maps. These data overestimate where forests were in the northern boreal regions, particularly in Russia, because tundra-forest transition zones were considered forest.

*Current forests* refer to estimated closed forest cover within the last 10 years or so (this varies by country). Only closed moist forests are depicted for Africa and Asia.

*Frontier forests* are large, relatively intact forest ecosystems. They represent undisturbed forest areas that are large enough to maintain all of their biodiversity, including viable populations of wide-ranging species associated with each forest type. A frontier forest must meet the following criteria:

- It is primarily forested.
- It is large enough to support viable populations of all species associated with that forest type, even in the face of natural disasters (such as hurricanes, etc.) of a magnitude to occur once in a century.
- Its structure and composition are determined mainly by natural events (such as fires, etc.), and it remains relatively unmanaged by humans, although limited human disturbance by traditional activities is acceptable.
- In forests where patches of trees of different ages occur naturally, the landscape shows this type of heterogeneity.
- It is dominated by indigenous tree species.
- It is home to most, if not all, other plants and animals that typically live in this type of forest.

*Percent of frontier forests threatened* refers to those frontier forests where ongoing or planned human activities such as logging, mining, and other large-scale disturbances will eventually degrade the ecosystem through species decline or extinction, drastic changes in the forest's age structure, etc., and would result, if continued, in the violation of one of the abovementioned criteria.

*Forest ecosystems* data for forest cover are for 1996. The WCMC analysis was carried out by overlaying forest maps with maps of protected areas using a Geographic Information System. The forest maps were created by WCMC from many national and regional maps showing forest extent. The legends of these maps were harmonized into 15 different tropical and 11 nontropical forest types for the globe, defined specifically for this study. The classification was designed to be of relevance for forest

conservation information. In general, WCMC assumed that the land cover categories shown in the source maps were correct and translated the legends directly to the 25 type classes for the world without attempting to assess the accuracy of the source data. Documentation for the source data is given in full by Iremonger *et al.* (1997).

Shrub-dominated lands were not included in the WCMC publication, but areas with sparse tree cover were. Although the aim was to exclude areas significantly affected by people from the *sparse trees and parkland* category, the source data for these areas generally gave vegetation structure and did not specify degree of anthropogenic disturbance. Some patchworks of disturbed forests and grasslands may have been included. The forest type categories were split between "tropical" and "nontropical." *Tropical* forests included all forests located between the Tropics of Cancer and Capricorn. All other forests were put into the *nontropical* category. Montane forests within the tropics that were classified in the source maps as "temperate" were registered in the "tropical" forests category in this study. The WCMC categories that included plantation forests and disturbed forests were excluded from this table. However, as the source data for plantation forests were scant, most of the plantation forests in the world were not recorded as such in the WCMC study and are therefore included in the categories describing natural forests. For example, all forests in Europe are classified as "natural" forests.

*Percent protected* includes forest areas that fall within the protected areas in the world that are listed as the World Conservation Union's (IUCN) management categories I–V. Please refer to Iremonger *et al.* (1997) or to the Sources and Technical Notes of Data Table 14.1 for a description of these management categories.

### Data Table 11.3

#### Wood Production and Trade, 1983–95

Source: Food and Agriculture Organization of the United Nations (FAO), *FAOSTAT Statistics Database*. Available online at: <http://www.fao.org> (FAO, Rome, 1997).

*Total roundwood production* refers to all wood in the rough, whether destined for industrial or fuelwood uses. All wood felled or harvested from forests and trees outside the forest, with or without bark, round, split, roughly squared, or in other forms such as roots and stumps, is included.

*Fuel and charcoal production* covers all rough wood used for cooking, heating, and power production. Wood intended for charcoal production, pit kilns, and portable ovens is also included.

*Industrial roundwood production* comprises all roundwood products other than fuelwood and charcoal: sawlogs or veneer logs, posts, pitprops, pulpwood, and other roundwood industrial products.

*Sawnwood production* includes wood that has been sawn, planed, or shaped into products such as planks, beams, boards, rafters, "lumber," sleepers, etc. Wood flooring and wood-based panels are excluded. Sawnwood generally is thicker than 5 millimeters.

*Paper production* includes newsprint, printing and writing paper, packaging paper, household and sanitary paper, and other paper and paperboard.

The *quantity of net trade in roundwood* is the balance of imports minus exports. Exports are shown as a negative balance (in parentheses). Trade in roundwood includes sawlogs and veneer logs, fuelwood, pulpwood, other industrial roundwood, and the roundwood equivalent of trade in charcoal, wood residues, and chips and particles. Figures are the national totals averaged over a 3-year period in thousands of cubic meters. Imports are usually on a cost, insurance, and freight basis (c.i.f.) (i.e., insurance and freight costs added in). Exports are generally on a free-on-board basis (FOB) (i.e., not including insurance or freight costs).

*Balance of trade* is defined as exports minus imports. Figures are the national totals averaged over a 3-year period in millions of U.S. dollars. Imports are usually on a c.i.f. basis. Exports are generally on an FOB basis. Imports are shown as surplus over exports (in parentheses).

All data refer to both coniferous and nonconiferous wood. FAO compiles forest products data from responses to annual questionnaires sent to national governments. Data from other sources, such as national statistical yearbooks, are also used. In some cases, FAO prepares its own estimates. FAO continually revises its data using new information; the latest figures are subject to revision.

Statistics on the production of fuelwood and charcoal are lacking for many countries. FAO uses survey data when available to estimate fuelwood. Annual change is estimated based on population change.

For more information, please refer to the *FAOSTAT Statistics Database* online at: <http://www.fao.org>.

### Data Table 11.4

#### Land Area and Use, 1982–94

Sources: Land area and use: Food and Agriculture Organization of the United Nations (FAO), *FAOSTAT Statistics Database*. Available online at: <http://www.fao.org> (FAO, Rome, 1997); population density: calculated from FAO land area data and population figures provided by United Nations (U.N.) Population Division, *World Population Prospects, 1950–2050 (The 1996 Revision)*, on diskette (U.N., New York, 1996).

*Land area and land use* data are provided to FAO by national governments in response to annual questionnaires. FAO also compiles data from national agricultural censuses. When official information is lacking, FAO prepares its own estimates or relies on unofficial data. Several countries use definitions of total area and land use that differ

from those used in this chapter. Please refer to the original sources for details.

FAO often adjusts the definitions of land use categories and sometimes substantially revises earlier data. For example, in 1985, FAO began to exclude from the cropland category land used for shifting cultivation but currently lying fallow. Because land use changes can reflect changes in data-reporting procedures along with actual land use changes, apparent trends should be interpreted with caution.

*Land use* data are periodically revised and may change significantly from year to year. For the most recent land use statistics, see the *FAOSTAT Statistics Database* online at: <http://www.fao.org>.

Land area data are for 1994. They exclude major inland water bodies, national claims to the continental shelf, and Exclusive Economic Zones.

The *population density* and *land use* figures for the world refer to the six inhabited continents. Population density was derived by using the population figures for 1996 published by the United Nations Population Division and land area data for 1994 from FAO. For more details on population

data, please refer to the Sources and Technical Notes to Data Table 7.1.

*Domesticated land as a percentage of land area* provides a crude indicator of the degree to which national landscapes have been heavily modified through agricultural use. Domesticated land, as defined here, is a sum of FAO's "cropland" and "permanent pasture" land use categories. This indicator may overestimate or underestimate the actual degree to which a country's land area has been modified. Permanent pasture, for example, may include a significant proportion of rangeland in some countries, while consisting largely of heavily modified pasturelands in others. Domesticated land area does not include built-up lands or plantation forests, the latter constituting a major portion of heavily modified land area in many countries of the world.

*Cropland* includes land under temporary and permanent crops, temporary meadows, market and kitchen gardens, and temporary fallow. Permanent crops are those that do not need to be replanted after each harvest, such as cocoa, coffee, fruit, rubber, and vines. It excludes land used to grow trees for wood or timber.

*Permanent pasture* is land used for 5 or more years for forage, including natural crops and cultivated crops. This category is difficult for countries to assess because it includes wildland used for pasture. This means that shrub land and savannah areas can be reported either under this category or under *forest and woodland*. In addition, few countries regularly report data on permanent pasture. As a result, the absence of a change in permanent pasture area (e.g., 0 percent change for many African and Asian countries) may indicate differences in land classification and data reporting rather than actual conditions. Grassland not used for forage is included under *other land*.

*Forest and woodland* includes land under natural or planted stands of trees, as well as logged-over areas that will be reforested in the near future. Forest and woodland areas used exclusively for recreational purposes are excluded (these areas are reported under *other land*). These data are not comparable with data for total forest area presented in Data Table 11.2.

*Other land* includes uncultivated land, grassland not used for pasture, built-on areas, wetlands, wastelands, barren land, and roads.