

# Data Table 9.1 Land Area and Use, 1981–93

	Land Area (000 hectares)	Population Density 1995 (per 1,000 hectares)	Domesticated Land as a % of Land Area (a)	Land Use (000 hectares)							
				Cropland		Permanent Pasture		Forest and Woodland		Other Land	
				% Change Since 1981-83	% Change Since 1981-83	% Change Since 1981-83	% Change Since 1981-83	% Change Since 1981-83	% Change Since 1981-83	% Change Since 1981-83	% Change Since 1981-83
				1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83
<b>WORLD (b)</b>	<b>13,098,404</b>	<b>436</b>	<b>38</b>	<b>1,450,834</b>	<b>1.3</b>	<b>3,364,537</b>	<b>3.6</b>	<b>4,168,956</b>	<b>(3.6)</b>	<b>4,114,077</b>	<b>(0.5)</b>
<b>AFRICA</b>	<b>2,963,611</b>	<b>246</b>	<b>35</b>	<b>187,357</b>	<b>5.8</b>	<b>853,049</b>	<b>1.2</b>	<b>760,576</b>	<b>(3.1)</b>	<b>1,162,630</b>	<b>(0.3)</b>
Algeria	238,174	117	16	7,938	7.0	30,752	(3.2)	3,969	(9.5)	195,516	(0.5)
Angola	124,670	89	26	3,483	2.5	29,000	0.0	51,917	(3.1)	40,270	(3.9)
Benin	11,062	489	21	1,877	4.1	442	0.0	3,407	(12.0)	5,337	(7.3)
Botswana	56,673	26	46	420	5.0	25,600	0.0	26,500	0.0	4,153	0.5
Burkina Faso	27,360	377	35	3,564	23.5	6,000	0.0	13,800	0.0	3,996	17.0
Burundi	2,568	2,489	89	1,357	3.9	915	0.5	85	0.0	211	26.3
Cameroon	46,540	284	19	7,033	1.2	2,000	0.0	35,900	0.0	1,607	5.2
Central African Rep	62,298	53	8	2,015	2.9	3,000	0.0	46,700	0.0	10,583	0.5
Chad	125,920	51	38	3,239	2.8	45,000	0.0	32,400	0.0	45,281	0.2
Congo	34,150	76	30	170	11.6	10,000	0.0	21,120	(0.9)	2,860	(6.4)
Cote d'Ivoire	31,800	448	53	3,703	16.7	13,000	0.0	7,080	(24.4)	8,017	(21.9)
Egypt	99,545	632	8	2,760	11.7	4,934	12.7	31	0.0	91,820	0.9
Equatorial Guinea	2,805	143	12	230	0.0	104	0.0	1,297	0.1	1,174	0.1
Eritrea	10,100	350	60	1,280	X	1,600	X	2,000	X	5,220	93.5
Ethiopia	110,100	500	53	13,930	0.0	44,825	(1.0)	26,950	(3.4)	24,395	(5.8)
Gabon	25,767	51	20	459	1.5	4,700	0.0	19,900	(0.5)	708	(12.7)
Gambia, The	1,000	1,118	27	180	13.0	90	0.0	280	0.0	450	4.6
Ghana	22,754	767	41	4,320	23.4	5,000	0.0	7,943	(8.0)	5,491	2.4
Guinea	24,572	273	25	730	2.4	5,500	0.0	14,480	(3.9)	3,862	(14.6)
Guinea-Bissau	2,812	382	50	340	13.7	1,080	0.0	1,070	0.0	322	12.7
Kenya	56,914	497	45	4,517	5.5	21,300	0.0	16,800	0.0	14,297	1.7
Lesotho	3,035	675	76	320	10.4	2,000	0.0	80	(4.8)	635	4.1
Liberia	9,675	314	63	374	0.9	5,700	0.0	1,707	(13.2)	1,894	(13.6)
Libya	175,954	31	9	2,167	3.5	13,300	0.8	840	35.1	159,647	0.2
Madagascar	58,154	254	47	3,104	3.3	24,000	0.0	23,200	0.0	7,850	1.3
Malawi	9,408	1,183	38	1,697	22.1	1,840	0.0	3,700	(1.1)	2,171	12.3
Mali	122,019	88	27	2,270	10.6	30,000	0.0	6,907	(3.9)	82,843	(0.1)
Mauritania	102,522	22	38	207	6.2	39,250	0.0	4,413	(2.1)	58,652	(0.1)
Mauritius	203	5,502	56	106	(0.9)	7	0.0	44	(24.1)	46	(32.6)
Morocco	44,630	606	69	9,781	15.9	20,900	0.0	8,290	6.0	5,659	32.0
Mozambique	78,409	204	60	3,163	2.7	44,000	0.0	14,053	(7.7)	17,192	(6.3)
Namibia	82,329	19	47	662	0.5	38,000	0.0	18,030	(1.8)	25,637	(1.3)
Niger	126,670	72	10	3,605	1.5	8,913	(3.4)	2,500	0.8	111,652	(0.2)
Nigeria	91,077	1,227	79	32,368	6.1	40,000	0.0	11,400	(20.3)	7,309	(14.1)
Rwanda	2,467	3,223	66	1,167	8.5	453	(15.2)	550	(4.8)	297	(5.8)
Senegal	19,253	432	28	2,350	0.0	3,100	0.0	10,467	(4.4)	3,336	(14.5)
Sierra Leone	7,162	630	38	540	5.6	2,203	(0.1)	2,043	(2.9)	2,376	(1.4)
Somalia	62,734	147	70	1,032	2.2	43,000	0.0	16,000	6.7	2,702	37.8
South Africa	122,104	340	77	13,177	(0.1)	81,378	(0.0)	8,200	0.0	19,349	(0.1)
Sudan	237,600	118	52	12,950	3.6	110,000	12.2	44,340	(6.1)	70,310	13.6
Swaziland	1,720	497	73	191	35.4	1,070	(6.5)	118	15.7	341	(2.5)
Tanzania	88,359	336	44	3,500	19.2	35,000	0.0	33,500	(14.4)	16,359	(31.0)
Togo	5,439	761	48	2,430	3.0	200	0.0	933	(8.5)	1,876	(0.9)
Tunisia	15,536	573	52	4,897	2.2	3,525	5.1	664	18.8	6,451	5.9
Uganda	19,965	1,067	43	6,763	13.4	1,800	0.0	5,503	(7.7)	5,898	5.8
Zaire	226,705	194	10	7,893	2.9	15,000	0.0	173,860	(1.7)	29,952	(9.6)
Zambia	74,339	127	47	5,271	2.2	30,000	0.0	28,727	(2.3)	10,341	(5.5)
Zimbabwe	38,685	291	20	2,864	3.4	4,856	0.0	8,800	(7.4)	22,165	(2.7)
<b>EUROPE (c)</b>	<b>2,269,180</b>	<b>320</b>	<b>X</b>	<b>136,757</b>	<b>(2.7)</b>	<b>80,794</b>	<b>(5.6)</b>	<b>158,219</b>	<b>1.4</b>	<b>808,204</b>	<b>0.2</b>
Albania	2,740	1,256	41	702	(0.8)	424	4.7	1,050	2.3	564	6.6
Austria	8,273	963	42	1,509	(5.6)	1,978	(2.2)	3,228	(1.0)	1,557	(10.8)
Belarus, Rep	20,760	488	45	6,255	(1.7)	3,128	(6.2)	7,009	(5.2)	4,369	(16.0)
Belgium (d)	3,282	3,205	52	1,007	30.6	691	(9.4)	700	0.4	885	18.9
Bosnia and Herzegovina	5,100	678	38	1,007	X	1,067	X	2,100	X	927	450.4
Bulgaria	11,055	793	55	4,267	2.8	1,878	(7.4)	3,875	0.5	1,035	(1.5)
Croatia, Rep	5,592	804	43	1,415	(13.2)	1,247	(21.2)	2,081	2.3	849	(59.5)
Czech Rep	7,728	1,332	54	3,293	X	873	X	2,629	X	933	728.3
Denmark	4,243	1,221	65	2,549	(3.3)	206	(14.9)	445	(9.7)	1,043	(16.3)
Estonia, Rep	4,227	362	34	1,146	15.2	312	(6.8)	1,986	19.2	783	57.2
Finland	30,461	168	9	2,560	2.1	116	(23.6)	23,198	(0.5)	4,587	(2.3)
France	55,010	1,054	55	19,297	1.6	11,023	(12.8)	14,884	2.0	9,806	(10.4)
Germany	34,927	2,336	50	12,009	(3.7)	5,274	(11.0)	10,700	4.0	6,943	(10.1)
Greece	12,890	811	68	3,506	(11.2)	5,253	(0.0)	2,620	0.0	1,510	(29.4)
Hungary	9,234	1,095	66	5,077	(4.2)	1,165	(9.2)	1,726	6.1	1,266	(19.2)
Iceland	10,025	27	23	6	(20.8)	2,274	0.0	120	0.0	7,625	(0.0)
Ireland	6,889	516	81	926	(12.2)	4,691	0.5	320	(0.8)	951	(11.1)
Italy	29,406	1,945	55	11,915	(3.7)	4,284	(15.7)	6,769	6.2	6,438	(13.2)
Latvia, Rep	6,205	412	41	1,715	(1.3)	822	9.0	12,507	(5.6)	(8,839)	7.8
Lithuania, Rep	4,551	813	77	3,043	(3.6)	459	(15.1)	1,980	1.0	(930)	18.9
Macedonia, former Yugoslav Rep	2,543	851	51	663	X	636	X	1,002	X	242	952.3
Moldova, Rep	3,297	1,344	79	2,202	(0.4)	378	8.0	421	74.3	296	67.5
Netherlands	3,392	4,570	59	922	12.0	1,065	(10.1)	343	15.9	1,061	2.4
Norway	30,683	141	3	888	5.8	120	18.4	8,330	0.0	21,344	0.3
Poland, Rep	30,442	1,261	61	14,694	(0.9)	4,043	(0.6)	8,779	0.9	2,926	(2.7)
Portugal	9,195	1,068	44	3,169	0.7	839	0.1	3,293	12.3	1,894	20.2
Romania	23,034	991	64	9,974	(5.3)	4,820	8.7	6,681	1.8	1,559	(3.5)
Russian Federation	1,699,580	86	12	133,141	(1.8)	77,985	(6.8)	778,512	1.9	709,941	0.9
Slovak Rep	4,808	1,113	51	1,623	X	825	X	1,990	X	370	1,198.3
Slovenia, Rep	2,012	967	43	302	X	559	X	1,018	X	133	1,412.8
Spain	49,944	793	60	19,897	(2.9)	10,281	(2.7)	15,970	2.4	3,796	(13.6)
Sweden	41,162	213	8	2,779	(5.8)	573	(18.9)	28,000	0.1	9,809	(2.9)
Switzerland	3,955	1,821	40	449	9.1	1,279	(20.5)	1,185	12.7	1,042	(15.3)
Ukraine	57,935	887	72	34,458	(2.9)	7,471	6.6	10,278	36.4	5,728	37.9
United Kingdom	24,160	2,411	71	6,442	(7.7)	11,112	(1.6)	2,424	12.0	4,182	(11.0)
Yugoslavia, Fed Rep	X	X	X	7,730	(1.4)	6,352	(0.6)	9,120	(1.4)	(23,202)	1.2

Data Table 9.1 continued

	Land Area (000 hectares)	Population Density 1995 (per 1,000 hectares)	Domesticated Land as a % of Land Area (a)	Land Use (000 hectares)							
				Cropland		Permanent Pasture		Forest and Woodland		Other Land	
				% Change Since		% Change Since		% Change Since		% Change Since	
				1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83
<b>NORTH &amp; CENTRAL AMERICA (e)</b>	<b>2,178,176</b>	<b>209</b>	<b>29</b>	<b>271,300</b>	<b>(0.9)</b>	<b>362,033</b>	<b>0.1</b>	<b>854,897</b>	<b>5.7</b>	<b>689,945</b>	<b>6.3</b>
Belize	2,280	94	5	57	7.5	48	9.1	2,100	0.0	75	10.7
Canada	922,097	32	8	45,523	(1.3)	27,933	(3.3)	494,000	11.6	354,640	14.0
Costa Rica	5,106	671	56	530	3.5	2,337	9.1	1,570	(5.2)	670	19.1
Cuba	10,982	1,005	57	3,337	3.8	2,970	11.4	2,403	(9.2)	2,273	8.0
Dominican Rep	4,838	1,617	30	1,449	1.4	2	0.0	608	(3.7)	2,780	(0.1)
El Salvador	2,072	2,784	65	731	0.8	610	0.0	104	(18.8)	627	(2.9)
Guatemala	10,843	980	41	1,817	2.3	2,534	91.8	5,271	17.4	1,221	166.6
Haiti	2,756	2,605	51	908	1.3	495	(2.3)	140	0.0	1,212	(0.0)
Honduras	11,189	505	32	1,904	7.7	1,511	0.7	6,000	0.0	1,774	8.3
Jamaica	1,083	2,259	44	219	(4.8)	257	0.0	184	(4.5)	423	(4.7)
Mexico	190,869	491	52	24,727	0.2	74,499	0.0	48,700	4.1	42,943	4.6
Nicaragua	11,875	373	57	1,272	1.0	5,483	9.7	3,223	(24.3)	1,896	(28.4)
Panama	7,443	353	29	658	15.0	1,487	10.9	3,260	(18.0)	2,038	(23.8)
Trinidad and Tobago	513	2,546	26	121	3.4	11	0.0	235	3.1	146	7.6
United States	957,311	275	45	187,776	(1.2)	239,172	(0.4)	286,400	(2.0)	243,963	(3.8)
<b>SOUTH AMERICA</b>	<b>1,752,925</b>	<b>182</b>	<b>34</b>	<b>104,567</b>	<b>1.6</b>	<b>495,884</b>	<b>3.9</b>	<b>846,721</b>	<b>(4.1)</b>	<b>305,753</b>	<b>(5.2)</b>
Argentina	273,669	126	62	27,200	0.0	142,033	(0.7)	50,900	0.0	53,536	(1.8)
Bolivia	108,438	68	27	2,373	11.1	26,517	(1.7)	58,000	0.0	21,549	(1.1)
Brazil	845,651	191	28	50,560	0.3	185,767	6.8	488,833	(4.8)	120,491	(10.3)
Chile	74,880	190	24	4,293	0.3	13,583	3.7	16,500	0.0	40,504	1.2
Colombia	103,870	338	44	5,450	4.2	40,567	4.8	49,633	(5.8)	8,220	(12.1)
Ecuador	27,684	414	18	3,012	20.2	2,091	(0.0)	15,600	0.6	6,981	8.7
Guyana	19,685	42	9	496	0.2	1,230	0.5	16,413	0.3	1,546	3.3
Paraguay	39,730	125	60	2,258	19.3	21,600	30.6	12,983	(32.5)	2,888	(28.6)
Peru	128,000	186	24	3,630	0.7	27,120	0.0	84,800	(0.1)	12,450	(0.2)
Suriname	15,600	27	1	68	24.4	21	6.8	15,000	0.8	511	26.4
Uruguay	17,481	182	85	1,304	(6.8)	13,520	(0.6)	930	0.0	1,727	(10.5)
Venezuela	88,205	248	25	3,912	4.1	17,783	2.8	29,828	(8.2)	36,682	(5.5)
<b>ASIA (c)</b>	<b>3,089,163</b>	<b>1,119</b>	<b>X</b>	<b>470,322</b>	<b>2.9</b>	<b>799,881</b>	<b>12.9</b>	<b>533,087</b>	<b>(1.9)</b>	<b>958,376</b>	<b>9.1</b>
Afghanistan, Islamic State	65,209	309	58	8,054	0.0	30,000	0.0	1,900	0.0	25,255	0.0
Armenia	2,840	1,267	X	X	X	X	X	X	X	2,840	0.0
Azerbaijan	8,610	878	49	2,000	2.0	2,233	(4.1)	960	(12.5)	3,417	(5.7)
Bangladesh	13,017	9,252	79	9,703	6.1	600	0.0	1,896	(12.2)	818	36.3
Bhutan	4,700	349	9	133	6.7	272	2.5	3,100	20.4	1,194	45.3
Cambodia	17,652	581	25	2,367	47.9	1,967	239.1	11,667	(11.3)	1,652	40.0
China	932,641	1,310	X	95,975	(3.3)	X	X	X	X	836,666	(0.4)
Georgia, Rep	6,970	783	43	993	0.3	2,033	(9.8)	2,717	(6.1)	1,227	(32.2)
India	297,319	3,147	61	169,547	0.6	11,533	(4.1)	68,330	1.4	47,909	3.0
Indonesia	181,157	1,091	24	30,993	19.2	11,776	(1.3)	111,258	(3.7)	27,130	2.1
Iran, Islamic Rep	163,600	411	38	18,057	22.1	44,000	0.0	11,400	0.0	90,143	3.6
Iraq	43,737	468	22	5,450	0.1	4,000	0.0	192	0.0	34,095	0.0
Israel	2,062	2,730	28	435	4.8	145	12.7	124	12.7	1,358	3.7
Japan	37,652	3,322	14	4,511	(6.6)	656	9.8	25,187	(0.0)	7,299	(3.7)
Jordan	8,893	612	13	404	18.4	791	0.1	70	6.6	7,628	0.9
Kazakhstan, Rep	266,980	64	83	35,328	(1.6)	186,452	(1.0)	9,600	(6.5)	35,600	(8.6)
Korea, Dem People's Rep	12,041	1,986	17	2,010	4.5	50	0.0	2	0.0	9,979	0.9
Korea, Rep	9,873	4,557	22	2,072	(4.9)	91	43.9	7,370	0.0	340	(23.1)
Kuwait	1,782	868	8	5	150.0	137	2.0	6,464	(1.4)	(4,824)	1.8
Kyrgyz Rep	19,130	248	54	1,387	(3.9)	8,943	(1.7)	2	0.0	8,798	(2.4)
Lao People's Dem Rep	23,080	212	7	807	11.6	800	0.0	703	(11.3)	20,770	(0.0)
Lebanon	1,023	2,941	31	306	2.7	10	0.0	2,819	2.3	(2,112)	(3.4)
Malaysia	32,855	613	15	4,880	0.4	27	0.0	20,347	(1.8)	7,601	(4.6)
Mongolia	156,650	15	81	1,399	11.1	124,800	1.1	13,750	(9.4)	16,701	0.6
Myanmar	65,755	708	16	10,061	(0.1)	359	(0.7)	32,397	0.9	22,938	1.2
Nepal	13,680	1,602	32	2,354	1.5	2,000	4.2	5,750	4.4	3,576	9.9
Oman	21,246	102	5	62	49.6	1,000	0.0	X	X	20,184	0.1
Pakistan	77,088	1,823	34	22,890	12.4	5,000	0.0	3,470	14.5	45,728	6.5
Philippines	29,817	2,267	35	9,177	3.8	1,277	17.1	13,600	13.4	5,764	37.0
Saudi Arabia	214,969	83	58	3,719	75.7	120,000	41.2	1,800	36.7	89,450	41.5
Singapore	61	46,689	X	1	(84.2)	X	X	3	0.0	57	(9.4)
Sri Lanka	6,463	2,840	36	1,903	2.1	439	0.1	2,126	21.4	1,995	20.7
Syrian Arab Rep	18,378	798	75	5,770	0.8	8,018	(4.0)	679	37.9	3,911	(2.5)
Tajikistan, Rep	14,270	428	31	836	(7.2)	3,507	1.1	535	7.8	9,391	0.1
Thailand	51,089	1,151	42	20,775	9.4	797	17.2	13,557	(13.8)	15,960	(1.7)
Turkey	76,963	805	52	27,583	0.6	12,378	22.6	20,199	0.0	16,803	14.6
Turkmenistan, Rep	48,810	84	77	1,462	(39.1)	36,274	0.8	4,000	(10.4)	7,074	(16.0)
United Arab Emirates	8,360	228	3	39	36.0	200	0.0	3	0.0	8,118	0.1
Uzbekistan, Rep	42,540	537	63	4,728	4.6	22,183	(5.9)	1,323	(42.5)	14,306	(15.1)
Viet Nam	32,549	2,290	22	6,607	0.4	328	7.9	9,639	(8.8)	15,975	(5.5)
Yemen, Rep	52,797	275	33	1,481	1.1	16,065	0.0	2,000	(33.3)	33,251	(3.0)
<b>OCEANIA</b>	<b>845,349</b>	<b>34</b>	<b>57</b>	<b>51,619</b>	<b>4.3</b>	<b>430,738</b>	<b>(3.7)</b>	<b>199,962</b>	<b>24.4</b>	<b>163,030</b>	<b>15.2</b>
Australia	764,444	24	60	46,579	3.8	416,567	(3.7)	145,000	36.8	156,298	15.9
Fiji	1,827	429	24	257	42.8	174	34.1	1,185	0.0	211	57.6
New Zealand	26,799	133	65	3,831	9.4	13,577	(5.3)	7,377	3.6	2,014	(8.3)
Papua New Guinea	45,286	95	1	412	11.1	81	(17.3)	42,000	0.0	2,793	0.9
Solomon Islands	2,799	135	3	57	8.2	39	0.0	2,450	(3.5)	253	(33.9)

Sources: Food and Agriculture Organization of the United Nations, the United Nations Population Division and other sources.

Notes: a. Domesticated land is the sum of cropland and permanent pasture. b. Does not include Antarctica. c. Regional land use totals do not include countries of the former Soviet Union.

d. Includes Luxembourg. e. Includes Greenland. Regional totals include countries not listed.

0 = zero or less than half the unit of measure; X = not available; negative numbers are shown in parentheses.

For additional information, see Sources and Technical Notes.

# Data Table 9.2 Forest Resources, 1981–90

	Forest Area										Annual Logging of Closed Broadleaf Forest, 1981-90		
	Forest and Other Wooded Land		Total Forest		Natural Forest		Plantation		Other Wooded Land		Extent 1990	% of Closed Forest	% That Is Primary Forest
	1990	Annual %	1990	Annual %	1990	Annual %	1990	Annual %	1990	Annual %			
	Extent (000 ha)	Change (1981-90)	Extent (000 ha)	Change (1981-90)	Extent (000 ha)	Change (1981-90)	Extent (000 ha)	Change (1981-90)	Extent (000 ha)	Change (1981-90)			
<b>WORLD</b>	<b>5,120,227</b>	<b>(0.19)</b>	<b>3,442,369</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>1,677,719</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>AFRICA</b>	<b>1,136,676</b>	<b>(0.24)</b>	<b>545,085</b>	<b>(0.70)</b>	<b>540,669</b>	<b>(0.73)</b>	<b>4,416</b>	<b>5.55</b>	<b>591,591</b>	<b>0.22</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>North Africa</b>	<b>11,137</b>	<b>(0.62)</b>	<b>6,905</b>	<b>(0.28)</b>	<b>5,655</b>	<b>(1.11)</b>	<b>1,250</b>	<b>6.82</b>	<b>4,232</b>	<b>(1.11)</b>	<b>X</b>	<b>X</b>	<b>X</b>
Algeria	3,945	X	2,039	(0.88)	1,554	(1.96)	485	6.08	1,906	X	X	X	X
Egypt	34	X	34	1.97	0	X	34	1.97	0	X	X	X	X
Libya	846	X	400	3.79	190	X	210	10.98	446	X	X	X	X
Morocco	5,744	X	3,864	(0.42)	3,543	(0.69)	321	4.26	1,880	X	X	X	X
Tunisia	569	X	569	0.92	368	(1.48)	201	12.58	0	X	X	X	X
<b>West Sahelian Africa</b>	<b>105,956</b>	<b>(0.27)</b>	<b>40,941</b>	<b>(0.64)</b>	<b>40,766</b>	<b>(0.68)</b>	<b>175</b>	<b>49.95</b>	<b>65,015</b>	<b>(0.02)</b>	<b>6</b>	<b>0.2</b>	<b>78</b>
Burkina Faso	13,813	X	4,436	(0.65)	4,416	(0.67)	20	12.73	9,377	X	0	0.0	0
Cape Verde	78	X	16	7.78	6	0.00	10	23.33	62	X	X	X	X
Chad	32,450	X	11,438	(0.72)	11,434	(0.72)	4	7.78	21,012	X	0	0.0	81
Gambia, The	286	X	98	(0.75)	97	(0.76)	1	0.00	188	X	0	1.1	0
Guinea-Bissau	2,162	X	2,022	(0.73)	2,021	(0.73)	1	0.00	140	X	5	0.6	90
Mali	28,791	X	12,158	(0.79)	12,144	(0.80)	14	143.85	16,633	X	0	0.0	0
Mauritania	4,536	X	556	0.03	554	0.00	2	101.11	3,980	X	0	0.1	0
Niger	10,442	X	2,562	0.03	2,550	0.00	12	17.91	7,880	X	0	0.0	0
Senegal	13,400	X	7,656	(0.52)	7,544	(0.64)	112	118.00	5,744	X	0	0.0	5
<b>East Sahelian Africa</b>	<b>161,048</b>	<b>(0.38)</b>	<b>65,983</b>	<b>(0.80)</b>	<b>65,450</b>	<b>(0.83)</b>	<b>533</b>	<b>7.03</b>	<b>95,065</b>	<b>(0.07)</b>	<b>4</b>	<b>0.1</b>	<b>65</b>
Djibouti	1,320	X	22	0.00	22	0.00	0	X	1,298	X	X	X	X
Ethiopia (a)	41,991	X	14,354	(0.18)	14,165	(0.27)	189	17.49	27,637	X	0	0.0	92
Kenya	16,816	X	1,305	(0.39)	1,187	(0.55)	118	1.58	15,511	X	2	0.6	86
Somalia	15,945	X	758	(0.36)	754	(0.36)	4	0.00	15,187	X	1	0.6	0
Sudan	68,955	X	43,179	(0.99)	42,976	(1.01)	203	7.58	25,776	X	0	0.0	0
Uganda	16,023	X	6,366	(0.92)	6,346	(0.92)	20	0.00	9,657	X	1	0.1	61
<b>West Africa</b>	<b>149,764</b>	<b>(0.06)</b>	<b>55,919</b>	<b>(0.94)</b>	<b>55,607</b>	<b>(0.96)</b>	<b>312</b>	<b>4.72</b>	<b>93,845</b>	<b>0.56</b>	<b>312</b>	<b>2.0</b>	<b>47</b>
Benin	11,497	X	4,961	(1.22)	4,947	(1.23)	14	6.67	6,536	X	0	0.3	57
Cote d'Ivoire	18,952	X	10,967	(0.96)	10,904	(0.99)	63	10.04	7,985	X	85	7.6	34
Ghana	18,013	X	9,608	(1.24)	9,555	(1.26)	53	2.47	8,405	X	11	0.7	19
Guinea	17,484	X	6,696	(1.14)	6,692	(1.15)	4	5.81	10,788	X	9	0.5	87
Liberia	6,632	X	4,639	(0.52)	4,633	(0.52)	6	1.03	1,993	X	79	1.7	87
Nigeria	65,654	X	15,785	(0.68)	15,634	(0.71)	151	3.23	49,869	X	127	2.3	31
Sierra Leone	6,969	X	1,895	(0.60)	1,889	(0.61)	6	3.45	5,074	X	1	0.2	0
Togo	4,566	X	1,370	(1.31)	1,353	(1.39)	17	23.33	3,196	X	1	0.3	47
<b>Central Africa</b>	<b>296,704</b>	<b>(0.19)</b>	<b>204,238</b>	<b>(0.52)</b>	<b>204,113</b>	<b>(0.53)</b>	<b>125</b>	<b>16.12</b>	<b>92,466</b>	<b>0.64</b>	<b>571</b>	<b>0.4</b>	<b>90</b>
Cameroon	35,905	X	20,366	(0.56)	20,350	(0.57)	16	29.02	15,539	X	333	4.5	89
Central African Rep	46,753	X	30,568	(0.40)	30,562	(0.41)	6	1,190.00	16,185	X	3	0.0	93
Congo	25,285	X	19,902	(0.15)	19,865	(0.16)	37	21.73	5,383	X	78	0.4	89
Equatorial Guinea	2,719	X	1,829	(0.37)	1,826	(0.37)	3	0.00	890	X	5	0.3	88
Gabon	19,966	X	18,256	(0.60)	18,235	(0.60)	21	5.79	1,710	X	126	0.7	93
Zaire	166,076	X	113,317	(0.60)	113,275	(0.61)	42	16.67	52,759	X	26	0.0	95
<b>Tropical Southern Africa</b>	<b>346,896</b>	<b>(0.21)</b>	<b>146,609</b>	<b>(0.82)</b>	<b>145,869</b>	<b>(0.84)</b>	<b>740</b>	<b>8.14</b>	<b>200,287</b>	<b>0.30</b>	<b>9</b>	<b>0.1</b>	<b>38</b>
Angola	77,198	X	23,194	(0.69)	23,074	(0.70)	120	0.88	54,004	X	1	0.0	5
Botswana	26,561	X	14,262	(0.51)	14,261	(0.51)	1	0.00	12,299	X	X	X	X
Burundi	1,314	X	325	2.49	233	(0.57)	92	59.43	989	X	0	0.0	0
Malawi	3,724	X	3,612	(1.12)	3,486	(1.31)	126	12.42	112	X	0	0.0	0
Mozambique	55,881	X	17,357	(0.72)	17,329	(0.72)	28	5.38	38,524	X	1	0.0	40
Namibia	26,296	X	12,569	(0.33)	12,569	(0.33)	0	X	13,727	X	X	X	X
Rwanda	946	X	252	1.81	164	(0.24)	88	9.43	694	X	1	0.4	5
Tanzania	68,497	X	33,709	(1.13)	33,555	(1.15)	154	12.52	34,788	X	2	0.2	77
Zambia	60,337	X	32,349	(1.00)	32,301	(1.01)	48	7.78	27,988	X	5	0.2	34
Zimbabwe	26,144	X	8,981	(0.62)	8,897	(0.64)	84	1.98	17,163	X	0	0.2	14
<b>Temperate Southern Africa</b>	<b>41,712</b>	<b>(0.74)</b>	<b>8,361</b>	<b>(0.53)</b>	<b>7,317</b>	<b>(0.79)</b>	<b>1,044</b>	<b>1.82</b>	<b>33,351</b>	<b>(0.79)</b>	<b>X</b>	<b>X</b>	<b>X</b>
South Africa	41,543	X	8,208	(0.55)	7,243	(0.80)	965	1.91	33,335	X	X	X	X
Swaziland	146	X	146	0.05	74	0.00	72	0.10	0	X	X	X	X
<b>Insular Africa</b>	<b>23,457</b>	<b>(0.37)</b>	<b>16,127</b>	<b>(0.75)</b>	<b>15,892</b>	<b>(0.78)</b>	<b>235</b>	<b>1.69</b>	<b>7,331</b>	<b>0.62</b>	<b>20</b>	<b>0.3</b>	<b>31</b>
Comoros	41	X	11	(3.13)	11	(3.13)	0	X	30	X	X	X	X
Madagascar	23,225	X	15,999	(0.76)	15,782	(0.79)	217	1.65	7,226	X	20	0.3	31
Mauritius	44	X	12	1.32	3	0.00	9	1.84	32	X	X	X	X
<b>ASIA</b>	<b>657,361</b>	<b>X</b>	<b>489,466</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>167,895</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>Temperate and Middle East Asia</b>	<b>252,339</b>	<b>X</b>	<b>192,386</b>	<b>0.68</b>	<b>X</b>	<b>X</b>	<b>33,566</b>	<b>5.80</b>	<b>59,953</b>	<b>(1.71)</b>	<b>X</b>	<b>X</b>	<b>X</b>
Afghanistan, Islamic State	2,614	X	1,199	(0.03)	1,191	(0.03)	8	0.00	1,415	X	X	X	X
China	162,029	X	133,799	0.59	101,968	(0.38)	31,831	5.58	28,230	X	X	X	X
Iran, Islamic Rep	11,437	X	1,737	(1.38)	1,658	(1.65)	79	16.33	9,700	X	X	X	X
Iraq	192	X	83	0.00	69	0.00	14	0.00	109	X	X	X	X
Israel	124	X	102	X	X	X	X	X	22	X	X	X	X
Japan	24,718	(0.02)	24,158	X	X	X	X	X	560	X	X	X	X
Jordan	173	X	51	0.28	28	(2.00)	23	5.75	122	X	X	X	X
Korea, Dem People's Rep	7,370	X	6,170	1.43	4,700	0.00	1,470	11.00	1,200	X	X	X	X
Korea, Rep	6,291	X	6,291	(0.02)	6,291	(0.02)	0	X	0	X	X	X	X
Lebanon	144	X	78	(0.71)	65	(0.85)	13	0.00	66	X	X	X	X
Mongolia	13,741	X	9,406	0.00	9,406	0.00	0	X	4,335	X	X	X	X
Saudi Arabia	902	X	202	(1.85)	201	(1.86)	1	0.00	700	X	X	X	X
Syrian Arab Rep	484	X	245	2.85	118	(2.76)	127	36.01	239	X	X	X	X
Turkey	20,199	0.02	8,856	X	X	X	X	X	11,343	X	X	X	X
Yemen	1,921	X	9	0.00	9	0.00	0	X	1,912	X	X	X	X
<b>South Asia</b>	<b>100,164</b>	<b>0.63</b>	<b>77,762</b>	<b>0.66</b>	<b>63,931</b>	<b>(0.79)</b>	<b>13,831</b>	<b>29.84</b>	<b>22,402</b>	<b>0.52</b>	<b>62</b>	<b>0.2</b>	<b>17</b>
Bangladesh	1,472	X	1,004	(2.02)	769	(3.28)	235	10.89	468	X	15	2.5	7
Bhutan	3,168	X	2,813	(0.54)	2,809	(0.55)	4	11.05	355	X	2	0.2	79
India	82,648	X	64,959	1.15	51,729	(0.62)	13,230	32.13	17,689	X	42	0.1	18
Nepal	5,751	X	5,079	(0.90)	5,023	(0.98)	56	32.11	672	X	X	X	X
Pakistan	3,128	X	2,023	(2.64)	1,855	(2.93)	168	3.33	1,105	X	X	X	X
Sri Lanka	3,998	X	1,885	(1.00)	1,746	(1.33)	139	7.64	2,113	X	3	0.2	3

Data Table 9.2 continued

	Forest Area										Annual Logging of Closed Broadleaf Forest, 1981-90		
	Forest and Other Wooded Land		Total Forest		Natural Forest		Plantation		Other Wooded Land		(000 ha)		
	1990	Annual %	1990	Annual %	1990	Annual %	1990	Annual %	1990	Annual %	Extent	% of	% That
	Extent	Change	Extent	Change	Extent	Change	Extent	Change	Extent	Change	1990	Closed Forest	Is Primary Forest
	(000 ha)	(1981-90)	(000 ha)	(1981-90)	(000 ha)	(1981-90)	(000 ha)	(1981-90)	(000 ha)	(1981-90)			
<b>Continental South and East Asia</b>	<b>123,400</b>	<b>(0.81)</b>	<b>77,484</b>	<b>(1.36)</b>	<b>75,239</b>	<b>(1.49)</b>	<b>2,245</b>	<b>7.77</b>	<b>45,916</b>	<b>0.29</b>	<b>304</b>	<b>0.5</b>	<b>76</b>
Cambodia	13,724	X	12,170	(0.97)	12,163	(0.97)	7	0.00	1,554	X	3	0.0	88
Lao People's Dem Rep	21,436	X	13,177	(0.89)	13,173	(0.89)	4	5.38	8,259	X	9	0.1	94
Myanmar	49,774	X	29,091	(1.16)	28,856	(1.22)	235	49.51	20,683	X	198	0.7	90
Thailand	14,968	X	13,264	(2.68)	12,735	(2.88)	529	12.55	1,704	X	37	0.5	45
Viet Nam	23,499	X	9,782	(0.83)	8,312	(1.42)	1,470	5.00	13,717	X	58	1.2	45
<b>Insular South East Asia</b>	<b>181,458</b>	<b>(0.77)</b>	<b>141,834</b>	<b>(1.01)</b>	<b>135,425</b>	<b>(1.25)</b>	<b>6,409</b>	<b>11.12</b>	<b>39,624</b>	<b>0.21</b>	<b>1,721</b>	<b>1.5</b>	<b>85</b>
Indonesia	145,108	X	115,674	(0.71)	109,549	(1.00)	6,125	11.82	29,434	X	1,223	1.4	86
Malaysia	22,248	X	17,664	(1.81)	17,583	(1.84)	81	35.00	4,584	X	455	2.6	85
Philippines	13,640	X	8,034	(2.82)	7,831	(2.88)	203	0.00	5,606	X	41	0.5	62
Singapore	4	X	4	0.00	4	0.00	0	X	0	X	X	X	X
<b>THE AMERICAS</b>	<b>2,009,006</b>	<b>(0.31)</b>	<b>1,424,206</b>	<b>(0.49)</b>	<b>959,704</b>	<b>(0.74)</b>	<b>7,765</b>	<b>7.09</b>	<b>584,801</b>	<b>0.17</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>Temperate North America</b>	<b>749,289</b>	<b>(0.04)</b>	<b>456,737</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>292,552</b>	<b>(0.11)</b>	<b>X</b>	<b>X</b>	<b>X</b>
Canada	453,300	0.00	247,164	X	X	X	X	X	206,136	X	X	X	X
United States	295,989	(0.11)	209,573	X	X	X	X	X	86,416	(0.35)	X	X	X
<b>Central America and Mexico</b>	<b>158,034</b>	<b>(0.50)</b>	<b>68,289</b>	<b>(1.39)</b>	<b>68,097</b>	<b>(1.40)</b>	<b>192</b>	<b>16.13</b>	<b>89,745</b>	<b>0.32</b>	<b>90</b>	<b>0.4</b>	<b>65</b>
Costa Rica	1,569	X	1,456	(2.44)	1,428	(2.57)	28	132.86	113	X	34	2.6	27
El Salvador	890	X	127	(1.85)	123	(2.06)	4	37.06	763	X	X	X	X
Guatemala	9,465	X	4,253	(1.58)	4,225	(1.61)	28	16.67	5,212	X	3	0.1	50
Honduras	6,054	X	4,608	(1.94)	4,605	(1.95)	3	101.11	1,446	X	2	0.1	19
Mexico	129,057	X	48,695	(1.21)	48,586	(1.22)	109	9.29	80,362	X	4	0.0	94
Nicaragua	7,732	X	6,027	(1.69)	6,013	(1.71)	14	143.85	1,705	X	45	0.9	92
Panama	3,266	X	3,123	(1.70)	3,117	(1.71)	6	14.00	143	X	3	0.1	71
<b>Caribbean Subregion</b>	<b>50,989</b>	<b>(0.10)</b>	<b>47,447</b>	<b>(0.22)</b>	<b>47,138</b>	<b>(0.25)</b>	<b>309</b>	<b>11.31</b>	<b>3,543</b>	<b>1.90</b>	<b>42</b>	<b>0.1</b>	<b>73</b>
Belize	2,117	X	1,998	(0.24)	1,996	(0.24)	2	0.00	119	X	3	0.2	5
Cuba	3,262	X	1,960	(0.19)	1,715	(0.92)	245	12.29	1,302	X	3	0.2	8
Dominican Rep	1,530	X	1,084	(2.43)	1,077	(2.46)	7	7.54	446	X	0	0.0	61
Guyana	18,755	X	18,424	(0.09)	18,416	(0.10)	8	171.82	331	X	9	0.0	91
Haiti	139	X	31	(1.91)	23	(3.95)	8	256.67	108	X	1	7.7	11
Jamaica	653	X	254	(5.08)	239	(5.29)	15	6.20	399	X	1	0.4	91
Suriname	15,093	X	14,776	(0.08)	14,768	(0.09)	8	4.41	317	X	11	0.1	94
Trinidad and Tobago	236	X	168	(1.75)	155	(1.93)	13	1.21	68	X	3	1.8	4
<b>Nontropical South America</b>	<b>68,453</b>	<b>(0.53)</b>	<b>43,283</b>	<b>(0.47)</b>	<b>41,564</b>	<b>(0.62)</b>	<b>1,719</b>	<b>5.51</b>	<b>25,170</b>	<b>(0.62)</b>	<b>X</b>	<b>X</b>	<b>X</b>
Argentina	50,936	X	34,436	(0.57)	33,889	(0.59)	547	0.91	16,500	X	X	X	X
Chile	16,583	X	8,033	(0.07)	7,018	(0.79)	1,015	11.61	8,550	X	X	X	X
Uruguay	933	X	813	0.12	657	(0.15)	156	1.44	120	X	X	X	X
<b>Tropical South America</b>	<b>982,242</b>	<b>(0.47)</b>	<b>808,450</b>	<b>(0.68)</b>	<b>802,905</b>	<b>(0.71)</b>	<b>5,545</b>	<b>7.24</b>	<b>173,792</b>	<b>0.71</b>	<b>2,445</b>	<b>0.4</b>	<b>90</b>
Bolivia	57,977	X	49,345	(1.12)	49,317	(1.12)	28	5.44	8,632	X	12	0.0	71
Brazil	671,921	X	566,007	(0.58)	561,107	(0.61)	4,900	6.63	105,914	X	1,982	0.5	93
Colombia	63,231	X	54,190	(0.62)	54,064	(0.64)	126	23.96	9,041	X	108	0.2	94
Ecuador	15,576	X	12,007	(1.65)	11,962	(1.66)	45	4.85	3,569	X	152	1.3	96
Paraguay	19,256	X	12,868	(2.38)	12,859	(2.38)	9	35.00	6,388	X	49	1.8	19
Peru	84,844	X	68,090	(0.37)	67,906	(0.38)	184	9.21	16,754	X	89	0.1	85
Venezuela	69,436	X	45,943	(1.13)	45,690	(1.16)	253	19.16	23,493	X	54	0.1	39
<b>EUROPE</b>	<b>174,340</b>	<b>0.11</b>	<b>140,197</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>34,143</b>	<b>0.58</b>	<b>X</b>	<b>X</b>	<b>X</b>
Albania	1,449	0.01	1,046	X	X	X	X	X	403	X	X	X	X
Austria	3,877	0.38	3,877	X	X	X	X	X	0	X	X	X	X
Belgium	620	0.32	620	X	X	X	X	X	0	X	X	X	X
Bulgaria	3,683	0.22	3,386	X	X	X	X	X	298	X	X	X	X
Czechoslovakia (former)	4,491	0.04	4,491	X	X	X	X	X	0	X	X	X	X
Denmark	466	0.22	466	X	X	X	X	X	0	X	X	X	X
Finland	23,373	0.02	20,112	X	X	X	X	X	3,261	X	X	X	X
France	14,154	0.06	13,110	X	X	X	X	X	1,044	X	X	X	X
Germany	10,735	0.46	10,490	X	X	X	X	X	245	X	X	X	X
Greece	6,032	0.01	2,512	X	X	X	X	X	3,520	X	X	X	X
Hungary	1,675	0.51	1,675	X	X	X	X	X	0	X	X	X	X
Iceland	123	X	0	X	X	X	X	X	123	X	X	X	X
Ireland	429	1.26	396	X	X	X	X	X	33	X	X	X	X
Italy	8,550	X	6,750	X	X	X	X	X	1,800	X	X	X	X
Luxembourg	88	0.12	85	X	X	X	X	X	3	X	X	X	X
Netherlands	334	0.31	334	X	X	X	X	X	0	X	X	X	X
Norway	9,565	X	8,697	X	X	X	X	X	868	X	X	X	X
Poland, Rep	8,672	0.06	8,672	X	X	X	X	X	0	X	X	X	X
Portugal	3,102	0.47	2,755	X	X	X	X	X	347	X	X	X	X
Romania	6,265	0.00	6,190	X	X	X	X	X	75	X	X	X	X
Spain	25,622	0.00	8,388	X	X	X	X	X	17,234	X	X	X	X
Sweden	28,015	X	24,437	X	X	X	X	X	3,578	X	X	X	X
Switzerland	1,186	0.59	1,130	X	X	X	X	X	56	X	X	X	X
United Kingdom	2,380	1.13	2,207	X	X	X	X	X	173	X	X	X	X
Yugoslavia (former)	9,454	0.38	8,371	X	X	X	X	X	1,083	X	X	X	X
<b>U.S.S.R. (former)</b>	<b>941,530</b>	<b>0.01</b>	<b>754,958</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>186,572</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Belarus, Rep	6,256	0.46	6,016	X	X	X	X	X	240	X	X	X	X
Ukraine	9,239	0.27	9,213	X	X	X	X	X	26	X	X	X	X
<b>OCEANIA</b>	<b>200,971</b>	<b>(0.02)</b>	<b>88,254</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>112,717</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Australia	145,613	0.00	39,837	X	X	X	X	X	105,776	X	X	X	X
Fiji	859	X	853	0.17	775	(0.44)	78	18.26	6	X	X	X	X
New Zealand	7,472	X	7,472	X	X	X	X	X	0	X	X	X	X
Papua New Guinea	42,115	X	36,030	(0.30)	36,000	(0.30)	30	9.61	6,085	X	57	0.2	93
Solomon Islands	2,455	X	2,410	(0.18)	2,394	(0.19)	16	2.12	45	X	X	X	X

Sources: Food and Agriculture Organization of the United Nations and the United Nations Economic Commission for Europe.

Notes: a. Ethiopia includes Eritrea. Subregional totals may include countries not listed.

0 = zero or less than half the unit of measure; X = not available; numbers in parentheses indicate increase in forest area.

For additional information, see Sources and Technical Notes.

# Data Table 9.3 Wood Production and Trade, 1981–93

	Roundwood Production						Processed Wood Production						Paper Production		Avg. Annual Net Trade in Roundwood (a) (000 cubic meters)	
	Total		Fuel and Charcoal		Industrial Roundwood		Sawnwood		Panels							
	(000 cubic meters)	Percent Change Since 1981-83	(000 cubic meters)	Percent Change Since 1981-83	(000 cubic meters)	Percent Change Since 1981-83	(000 cubic meters)	Percent Change Since 1981-83	(000 cubic meters)	Percent Change Since 1981-83	(000 cubic meters)	Percent Change Since 1981-83				
	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1981-83	1991-93		
WORLD	3,411,547	15	1,855,709	19	1,555,838	10	441,589	2	128,838	28	247,320	44				
AFRICA	539,683	32	480,752	34	58,931	13	8,219	8	1,593	(1)	2,558	33	(4,130)	(4,216)		
Algeria	2,305	33	2,006	32	298	41	13	0	50	0	91	(13)	X	X		
Angola	6,382	31	5,483	32	899	26	5	(38)	11	(68)	0	(100)	X	X		
Benin	5,374	35	5,075	35	299	45	25	178	X	X	X	X	X	X		
Botswana	1,399	36	1,312	36	86	36	X	X	X	X	X	X	X	X		
Burkina Faso	9,254	30	8,836	30	418	29	2	0	X	X	X	X	X	X		
Burundi	4,484	34	4,431	34	53	44	3	200	X	X	X	X	X	X		
Cameroon	14,483	35	11,490	37	2,993	28	481	(0)	78	7	5	0	(428)	(732)		
Central African Rep	3,628	16	3,185	22	443	(12)	63	(3)	2	(84)	X	X	X	X		
Chad	4,164	25	3,569	25	595	26	2	100	X	X	X	X	X	X		
Congo	3,438	45	2,155	34	1,283	70	53	(23)	36	(50)	X	X	X	X		
Cote d'Ivoire	13,370	13	10,498	46	2,872	(38)	606	(12)	229	40	X	X	(2,254)	(323)		
Egypt	2,352	27	2,243	27	109	28	X	X	76	110	203	67	232	74		
Equatorial Guinea	613	16	447	2	166	88	10	(43)	7	400	X	X	X	X		
Eritrea	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Ethiopia (b)	44,937	28	43,227	29	1,711	1	12	(77)	9	(36)	5	(46)	0	0		
Gabon	4,345	39	2,712	41	1,633	37	32	(70)	140	(26)	X	X	X	X		
Gambia, The	948	17	927	16	21	26	1	0	X	X	X	X	X	X		
Ghana	16,965	16	15,512	13	1,453	63	407	71	60	(7)	X	X	X	X		
Guinea	4,359	35	3,792	36	567	28	66	(27)	0	(100)	X	X	(13)	(15)		
Guinea-Bissau	572	3	422	0	150	15	16	0	X	X	X	X	X	X		
Kenya	37,324	41	35,513	41	1,811	38	185	26	52	133	148	124	(8)	0		
Lesotho	635	30	635	30	X	X	X	X	X	X	X	X	X	X		
Liberia	6,000	41	5,040	34	960	86	411	132	8	85	X	X	(236)	(234)		
Libya	646	2	536	0	110	16	31	0	X	X	6	20	45	(1)		
Madagascar	8,600	33	7,793	37	807	0	235	1	5	275	5	7	X	X		
Malawi	9,730	57	9,235	57	496	46	44	26	17	108	X	X	X	X		
Mali	5,955	35	5,575	35	380	37	13	117	X	X	X	X	X	X		
Mauritania	13	30	8	33	5	25	X	X	X	X	X	X	X	X		
Mauritius	15	(54)	2	(90)	13	30	5	40	0	X	X	X	1	16		
Morocco	2,296	38	1,426	28	869	58	83	(37)	34	(67)	106	10	213	376		
Mozambique	15,980	12	15,022	13	958	(0)	21	(56)	4	22	2	(17)	(5)	(7)		
Namibia	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Niger	5,292	38	4,965	38	326	38	2	X	X	X	X	X	X	X		
Nigeria	114,704	35	106,441	38	8,263	5	2,723	2	109	(48)	63	373	(59)	(49)		
Rwanda	5,647	10	5,392	11	255	(4)	27	248	2	0	X	X	X	X		
Senegal	4,953	34	4,281	33	672	40	23	109	X	X	X	X	X	X		
Sierra Leone	3,227	26	3,106	28	121	(18)	9	(56)	X	X	X	X	X	X		
Somalia	8,761	28	8,655	28	106	19	14	0	0	(100)	X	X	0	0		
South Africa	19,747	(1)	7,146	1	12,601	(2)	1,792	8	350	(11)	1,735	25	(72)	(1,066)		
Sudan	24,108	34	21,877	34	2,231	32	3	(68)	2	0	3	(67)	X	X		
Swaziland	2,297	3	560	0	1,737	4	103	(1)	8	14	X	X	(199)	0		
Tanzania	34,911	42	32,849	40	2,062	74	156	72	15	150	25	X	(0)	(9)		
Togo	1,265	80	1,072	90	192	38	3	100	X	X	X	X	0	(1)		
Tunisia	3,324	26	3,169	25	155	42	10	222	102	61	67	150	33	40		
Uganda	15,099	35	13,103	35	1,996	36	64	180	4	160	3	X	0	0		
Zaire	43,252	48	40,101	49	3,151	34	105	1	28	(8)	2	0	(62)	(111)		
Zambia	13,778	44	12,952	43	826	70	106	137	81	1,513	3	(23)	9	(4)		
Zimbabwe	8,033	17	6,269	12	1,764	35	250	42	79	103	86	33	(9)	(6)		
EUROPE (c)	319,100	(5)	50,672	(7)	268,428	(4)	76,383	(10)	34,710	12	68,233	36	15,668	13,669		
Albania	2,556	10	1,556	(3)	1,000	39	382	91	16	33	44	450	X	X		
Austria	13,759	(0)	2,860	102	10,899	(12)	7,015	13	1,896	54	3,214	87	2,651	5,205		
Belarus, Rep	10,714	X	819	X	9,895	X	1,619	X	525	X	221	X	X	X		
Belgium (d)	4,412	X	550	X	3,862	X	1,204	X	2,503	X	1,176	X	2,615	1,424		
Bosnia and Herzegovina	X	X	X	X	X	X	X	X	X	X	X	X	0	(2)		
Bulgaria	3,599	(26)	1,695	(2)	1,904	(39)	564	(62)	268	(55)	188	(57)	340	(101)		
Croatia, Rep	2,131	X	710	X	1,421	X	671	X	90	X	X	X	X	(270)		
Czech Rep	10,306	X	996	X	9,310	X	2,650	X	739	X	656	X	X	(1,425)		
Denmark	2,245	(24)	493	35	1,752	(32)	688	(17)	294	(1)	330	16	(962)	(80)		
Estonia, Rep	2,293	X	928	X	1,365	X	300	X	140	X	42	X	X	X		
Finland	37,663	(6)	3,320	(0)	34,343	(6)	7,111	(10)	1,044	(30)	9,304	52	3,882	5,144		
France	43,617	15	10,450	0	33,167	20	10,181	13	3,514	26	7,652	48	(1,176)	(2,421)		
Germany	36,245	X	3,795	X	32,450	X	13,295	X	9,067	X	12,998	X	X	(5,825)		
Greece	2,726	2	1,502	(21)	1,224	56	354	2	372	(1)	508	84	213	102		
Hungary	5,094	(21)	2,310	(19)	2,784	(23)	717	(41)	387	0	335	(28)	406	(945)		
Iceland	X	X	X	X	X	X	X	X	X	X	X	X	17	13		
Ireland	1,795	115	50	15	1,745	121	465	96	244	578	36	17	(376)	(385)		
Italy	9,240	6	4,750	12	4,490	0	1,797	(23)	3,670	51	5,951	31	5,047	6,719		
Latvia, Rep	3,515	X	700	X	2,815	X	593	X	190	X	28	X	X	X		
Lithuania, Rep	X	X	X	X	X	X	X	X	200	X	50	X	X	(187)		
Macedonia, former Yugoslav Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Moldova, Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Netherlands	1,397	55	156	65	1,241	54	400	47	105	(10)	2,851	71	177	40		
Norway	10,516	7	934	19	9,582	6	2,329	(1)	564	(7)	1,812	34	653	749		
Poland, Rep	18,314	(19)	2,975	5	15,339	(22)	3,822	(42)	1,666	(12)	1,128	(4)	(975)	(981)		
Portugal	11,409	42	598	7	10,811	45	1,176	(45)	1,085	106	904	69	(150)	(43)		
Romania	12,110	(45)	2,396	(45)	9,714	(45)	2,384	(49)	835	(46)	359	(56)	(30)	62		
Russian Federation	244,488	X	56,738	X	187,750	X	46,685	X	6,909	X	5,115	X	X	(11,098)		
Slovak Rep	5,003	X	521	X	4,482	X	80	X	X	X	X	X	X	(374)		
Slovenia, Rep	1,470	X	314	X	1,157	X	422	X	327	X	407	X	X	(106)		
Spain	15,216	7	1,990	3	13,226	7	2,784	13	2,361	28	3,458	29	237	1,800		
Sweden	59,907	17	4,424	0	55,483	18	12,110	9	912	(41)	8,503	39	3,525	4,266		
Switzerland	4,571	7	825	(11)	3,746	11	1,554	(14)	856	33	1,299	43	236	(189)		
Ukraine	X	X	X	X	X	X	X	X	X	X	X	X	0	2		
United Kingdom	6,197	50	263	88	5,934	48	2,139	32	1,907	201	5,115	56	(193)	377		
Yugoslavia, Fed Rep	X	X	X	X	X	X	X	X	X	X	X	X	940	(299)		

Data Table 9.3 continued

	Roundwood Production						Processed Wood Production						Paper Production		Avg. Annual Net Trade in Roundwood (a)	
	Total		Fuel and Charcoal		Industrial Roundwood		Sawnwood		Panels		(000 cubic meters)		(000 cubic meters)		(000 cubic meters)	
	(000 cubic meters)	Percent Change Since	(000 cubic meters)	Percent Change Since	(000 cubic meters)	Percent Change Since	(000 cubic meters)	Percent Change Since	(000 cubic meters)	Percent Change Since	(000 cubic meters)	Percent Change Since	(000 cubic meters)	Percent Change Since	(000 cubic meters)	Percent Change Since
	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1991-93	1981-83	1981-83	1991-93
<b>NORTH &amp; CENTRAL AMERICA</b>	<b>730,441</b>	<b>20</b>	<b>155,803</b>	<b>7</b>	<b>574,637</b>	<b>24</b>	<b>165,733</b>	<b>39</b>	<b>38,264</b>	<b>19</b>	<b>94,943</b>	<b>31</b>	<b>(17,551)</b>	<b>(25,723)</b>		
Belize	188	48	126	41	62	63	14	(25)	X	X	X	X	X	(1)	(2)	
Canada	172,703	20	6,834	18	165,869	20	56,044	41	6,538	38	16,900	28	(1,215)	601		
Costa Rica	4,168	25	3,134	32	1,034	10	661	63	65	32	19	24	1	2		
Cuba	3,142	(5)	2,531	(10)	611	18	130	22	149	130	78	(20)	X	X		
Dominican Rep	982	4	976	4	6	(18)	0	X	X	X	9	0	42	2		
El Salvador	6,362	17	6,216	17	146	30	70	60	X	X	17	6	X	X		
Guatemala	11,263	21	11,142	22	121	(34)	78	(36)	16	161	14	(26)	4	1		
Haiti	6,052	21	5,813	22	239	0	14	0	X	X	X	X	0	0		
Honduras	6,298	27	5,672	39	626	(28)	362	(28)	13	77	X	X	X	X		
Jamaica	539	819	385	4,178	154	211	27	11	0	(100)	4	(74)	2	18		
Mexico	22,940	22	15,449	25	7,491	16	2,696	49	645	(10)	2,828	45	21	(210)		
Nicaragua	3,569	7	3,269	33	300	(66)	69	(80)	5	(70)	X	X	2	0		
Panama	1,018	9	910	23	109	(45)	30	(43)	18	45	28	(35)	3	6		
Trinidad and Tobago	65	(20)	22	10	43	(30)	46	65	X	X	X	X	5	3		
United States	491,000	19	93,300	(2)	397,700	26	105,489	38	30,816	16	75,045	31	(16,406)	(26,191)		
<b>SOUTH AMERICA</b>	<b>362,400</b>	<b>26</b>	<b>243,585</b>	<b>20</b>	<b>118,815</b>	<b>39</b>	<b>26,411</b>	<b>17</b>	<b>4,287</b>	<b>21</b>	<b>8,344</b>	<b>50</b>	<b>(738)</b>	<b>(7,611)</b>		
Argentina	11,660	18	4,447	(12)	7,214	49	1,298	22	326	(15)	972	28	7	(1,002)		
Bolivia	1,530	15	1,377	28	153	(40)	208	146	55	622	0	(100)	0	(1)		
Brazil	268,879	22	191,166	21	77,713	24	18,628	13	2,552	2	5,051	54	(14)	(443)		
Chile	29,066	117	8,979	58	20,087	161	3,117	107	492	267	537	68	(760)	(6,005)		
Colombia	20,619	22	16,936	21	3,683	31	813	(0)	177	45	582	53	0	(1)		
Ecuador	7,435	(4)	4,218	(25)	3,218	55	892	(14)	220	128	150	354	X	X		
Guyana	175	(15)	14	(11)	161	(15)	12	(83)	2	X	X	X	(28)	(9)		
Paraguay	8,502	25	5,396	23	3,106	29	313	(52)	127	79	13	0	X	X		
Peru	8,031	3	6,981	8	1,050	(21)	511	(3)	32	(45)	327	42	1	1		
Suriname	149	(40)	19	37	131	(45)	42	(31)	7	(69)	X	X	(27)	(2)		
Uruguay	4,015	40	3,034	16	981	290	248	356	7	(49)	80	85	1	(129)		
Venezuela	2,086	74	954	56	1,132	94	312	20	292	130	633	29	106	13		
<b>ASIA (c)</b>	<b>1,122,978</b>	<b>20</b>	<b>849,658</b>	<b>21</b>	<b>273,320</b>	<b>18</b>	<b>99,785</b>	<b>6</b>	<b>39,094</b>	<b>99</b>	<b>63,606</b>	<b>108</b>	<b>34,702</b>	<b>48,013</b>		
Afghanistan, Islamic State	7,327	20	5,683	24	1,644	10	400	0	1	0	X	X	0	(3)		
Armenia	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Azerbaijan	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Bangladesh	31,751	26	31,021	28	730	(23)	79	(56)	9	(10)	97	(9)	X	X		
Bhutan	1,460	8	1,333	25	127	(54)	35	518	13	X	X	X	X	X		
Cambodia	6,782	38	5,726	31	1,057	86	127	195	2	0	0	X	X	X		
China	291,046	22	196,149	22	94,897	21	21,702	(6)	11,819	367	20,757	173	9,929	6,449		
Georgia, Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
India	282,384	22	257,813	22	24,571	15	17,460	32	442	19	2,505	86	(3)	571		
Indonesia	185,426	26	146,342	22	39,084	45	8,471	38	10,359	325	2,206	589	(4,871)	(1,466)		
Iran, Islamic Rep	7,405	11	2,511	7	4,894	13	177	8	304	262	200	156	118	41		
Iraq	153	19	103	30	50	0	8	0	3	50	13	(54)	X	X		
Israel	113	(4)	13	18	100	(7)	X	X	177	16	209	69	X	X		
Japan	34,110	6	372	(36)	33,738	7	27,267	(14)	8,228	(8)	28,380	61	42,255	46,485		
Jordan	11	32	7	62	4	0	X	X	X	X	20	247	X	X		
Kazakhstan, Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X	(25)	
Korea, Dem People's Rep	4,783	9	4,183	11	600	0	280	0	X	X	80	0	71	(89)		
Korea, Rep	6,485	(23)	4,491	(27)	1,994	(14)	3,584	13	1,634	4	5,410	195	5,916	9,327		
Kuwait	X	X	X	X	X	X	X	X	X	X	X	X	21	58		
Kyrgyz Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Lao People's Dem Rep	4,681	42	4,132	34	549	158	231	998	13	192	X	X	X	X		
Lebanon	487	3	479	7	8	(70)	10	(67)	46	0	42	(7)	16	30		
Malaysia	52,906	31	9,157	30	43,750	32	9,249	43	3,288	145	531	810	(18,369)	(15,681)		
Mongolia	1,063	(56)	535	(60)	528	(49)	173	(63)	3	(17)	X	X	X	X		
Myanmar	22,566	20	18,715	24	3,851	4	308	(56)	16	4	12	23	(233)	(1,352)		
Nepal	19,595	30	18,975	31	620	11	620	182	X	X	13	550	X	X		
Oman	X	X	X	X	X	X	X	X	X	X	X	X	10	(0)		
Pakistan	27,019	45	24,379	37	2,640	214	1,497	495	80	54	214	194	25	79		
Philippines	39,137	12	35,149	27	3,988	(46)	631	(48)	433	(35)	484	79	(1,637)	256		
Saudi Arabia	X	X	X	X	X	X	X	X	X	X	X	X	227	89		
Singapore	160	X	160	X	X	X	27	(89)	361	(38)	85	132	633	(218)		
Sri Lanka	9,247	11	8,588	13	659	(3)	5	(81)	10	(32)	26	28	(181)	(16)		
Syrian Arab Rep	74	62	23	21	52	91	9	0	27	0	1	(67)	73	(1)		
Tajikistan, Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Thailand	37,619	10	34,854	15	2,765	(32)	910	(2)	611	168	1,138	249	(167)	1,466		
Turkey	15,317	(29)	9,750	(35)	5,567	(15)	5,133	15	1,121	146	924	93	(41)	1,539		
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	X	X	0	36		
Uzbekistan, Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Viet Nam	33,008	25	28,407	24	4,601	31	861	120	39	26	116	158	39	(193)		
Yemen, Rep	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
<b>OCEANIA</b>	<b>44,140</b>	<b>25</b>	<b>8,748</b>	<b>11</b>	<b>35,392</b>	<b>29</b>	<b>5,827</b>	<b>1</b>	<b>1,766</b>	<b>48</b>	<b>2,803</b>	<b>31</b>	<b>(8,248)</b>	<b>(13,521)</b>		
Australia	19,860	17	2,896	38	16,964	14	3,028	(8)	901	9	2,007	39	(5,745)	(6,470)		
Fiji	307	31	37	48	270	29	108	25	17	58	X	X	(2)	(230)		
New Zealand	15,110	51	50	0	15,060	51	2,527	14	802	134	796	13	(1,093)	(4,685)		
Papua New Guinea	8,188	9	5,533	0	2,655	36	117	(6)	46	142	X	X	X	X		
Solomon Islands	468	(9)	138	26	330	(18)	16	(4)	0	(100)	X	X	X	X		

Source: Food and Agriculture Organization of the United Nations.

Notes: a. Imports of roundwood are shown as positive numbers; exports are shown as negative numbers (in parentheses). b. Ethiopia includes Eritrea. c. Regional totals do not include countries of the former Soviet Union. d. Includes Luxembourg. World and regional totals include countries not listed.

0 = zero or less than half the unit of measure; X = not available; negative numbers are shown in parentheses. For additional information, see Sources and Technical Notes.



## Sources and Technical Notes

Data Table 9.1  
Land Area and Use, 1981–93

**Sources:** Land area and use: Food and Agriculture Organization of the United Nations (FAO), *FAOSTAT-PC*, on diskette (FAO, Rome, 1995); United States Central Intelligence Agency (CIA), *The World Factbook 1994* (CIA, Washington, D.C., 1994); population density: calculated from FAO land area data and population figures provided by United Nations (U.N.) Population Division, *Interpolated National Populations (The 1994 Revision)*, on diskette (U.N., New York, 1994).

*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. Refer to the 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 latest *FAO Production Yearbook*.

Land area data are for 1993. They exclude major inland water bodies, national claims to the continental shelf, and Exclusive Economic Zones. (See Chapter 11, "Biodiversity," Data Table 11.4, Marine Biodiversity.)

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 1995 published by the United Nations Population Division and land area data for 1993 from FAO. Although the population figures were published in 1994, actual censuses and estimates were made in prior years. For additional information on population and methodology, see the Technical Notes to Data Table 8.1, Size and Growth of Population and Labor Force, 1950–2025, in Chapter 8, "Population and Human Development."

*Domesticated land as a percent 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. 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. These data are not comparable with forest and other wooded land data presented in Data Table 9.2.

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

Data Table 9.2  
Forest Resources, 1981–90

**Sources:** Food and Agriculture Organization of the United Nations (FAO), Forest Resources Division, *Forest Resources Assessment 1990: Global Synthesis* (FAO, Rome, 1995); FAO, Forest Resources Division, *Forest Resources Assessment 1990: Tropical Countries* (FAO, Rome, 1993); United Nations Economic Commission for Europe (UN/ECE) and FAO, *The Forest Resources of the Temperate Zones. Volume I: General Forest Resource Information* (UN/ECE-FAO, Geneva, 1993).

The FAO and UN/ECE-FAO used slightly different definitions in their assessments, each adapting its definitions to the respective forest ecosystem (forests in tropical and temperate developing countries versus forests in temperate developed countries). For this reason, these data are not strictly comparable between temperate developed countries (which include the former Soviet Union but not China) and the remaining countries of the world. 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.

UN/ECE-FAO defines a forest as land where tree crowns cover more than 20 percent of the area. Also included are open forest formations; forest roads and firebreaks; small, temporarily cleared areas; young stands expected to achieve at least 20 percent crown cover upon maturity; and windbreaks and shelterbelts exceeding 0.5 hectare in size. Under this definition, forest land in temperate developed countries includes both natural forest and plantation.

*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.

*Plantation* refers to forest stands established artificially by afforestation and reforestation for industrial 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 rate as estimated by FAO. Plantation extent differs from figures pre-

sented in *World Resources 1994–95*, which did not include an adjustment for estimated survival rate.

The category *other wooded land* encompasses forest fallows (closed and open forests) and shrubs in tropical countries. In the temperate zone, other wooded land consists of open woodland and scrub, shrub, and brushland. The category also includes wooded areas used for rangeland, but excludes orchards, wood lots under 0.5 hectare, and tree hedges.

*Annual change* figures in parentheses (negative change) 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. As defined here, deforestation does not include other alterations, such as selective logging (unless the forest cover is permanently reduced to less than 10 percent), that can substantially affect forests, forest soil, wildlife and its habitat, and the global carbon cycle. Positive annual change figures reflect net afforestation within a country or region.

*Annual logging of closed broadleaf forest* provides averages of the total area of *primary* (undisturbed) and thus secondary (previously logged) forest logged each year. Note that many “primary” forests are essentially old secondary forests.

Data for tropical and temperate developing countries are based on FAO’s 1990 Forest Resources Assessment Project. This project provided a consistent estimate of developing country forest extent and rates of forest area change between 1981 and 1990 by using a model to adjust baseline forest inventory data from each country to a common year (1990). Existing forest inventory data on national and subnational scales were carefully reviewed, adjusted to a common set of classifications and concepts, and finally combined in a database. FAO used a geographic information system to integrate statistical and map data for this purpose. The model used forest area adjustment functions that correlated the share of forest cover for each subnational unit to population density and growth, initial forest extent, and ecological zone. This relation is expressed through the differential equation  $dY/dP = b_1 \times Y^{b_2} - b_3 \times Y$ , where  $Y$  is the percentage of nonforest area,  $P$  is the natural log of  $(1 + \text{population density})$ , and  $b_1$ ,  $b_2$ , and  $b_3$  are the model parameters. The shape of the respective adjustment curves differed for each ecological zone; for example, there was a logistic function for the wet zones and an inverted j-function for the dry zones.

The reliability of these modeled estimates hinges partly on the quality of the primary data sources feeding into the model. 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 highlighted. Whereas good forest resources data are hard to find for Africa, better data are available for Latin America, and the best information obtainable is that for Asia.

Although there were forest cover estimates for two periods for 136 of the 143 developing countries assessed (97 percent), forest data, on average, were almost 10 years old. Refer to the Technical Notes to Chapter 19, “Forests and Rangelands,” in *World Resources 1994–95*, for details on forest cover and change data quality for the tropical countries.

Although the forest change 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; and for some countries, socioeconomic factors may have played a larger role in deforestation—for example, livestock projects in Central America and resettlement schemes in Indonesia. 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 the shortcomings of the FAO methodology, readers are encouraged to refer to those country inventories that use satellite data or extensive ground data for estimates of forest cover and deforestation. Data for several independent country assessments are presented in the Technical Notes to Chapter 19, “Forests and Rangelands,” in *World Resources 1994–95*.

The 1980 forest extent estimates for tropical and temperate developing countries presented in this data table are taken from the 1990 assessment and therefore are not comparable with estimates for that year presented in previous editions of *World Resources*. Past estimates were taken from two earlier FAO studies on forest extent. FAO’s 1980 assessment covered 76 tropical developing countries and used subnational statistical data on population and socioeconomic variables, maps on vegetation and ecofloristic zones, forest survey data, and remote-sensing images to determine forest area. In many cases, FAO

adjusted data to fit common definitions and to correspond to the baseline year of 1980. FAO’s 1988 *Interim Report* expanded the country coverage of the 1980 assessment to 53 more developing countries (covering the whole developing world and overseas territories of developed countries), keeping 1980 as the reference year. In that document, FAO evaluated the overall reliability of data on closed forest areas and deforestation rates for the original 76 developing countries. The 1990 assessment incorporated previously unavailable baseline inventory data to improve on 1980 country estimates.

The UNECE–FAO 1990 survey of temperate zone countries covers all forests in the 32 countries of the ECE region (Europe, North America, and the former Soviet Union), as well as forests in Japan, Australia, and New Zealand. Data for this study were obtained mainly from official sources in response to a questionnaire, although there are estimates by experts in some countries. Recent ECE and FAO publications, country reports, official articles, and estimates by the professional staff conducting the study are also included. Most data refer to the period around 1990, although data for Belgium are based on 1980 figures, data for Iceland cover 1970–85, and estimates for several other countries are from the mid-to-late 1980s.

Data Table 9.3  
Wood Production and Trade, 1981–93

**Source:** Food and Agriculture Organization of the United Nations (FAO), *FAOSTAT-PC*, on diskette (FAO, Rome, April 1995).

*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, veneer logs, sleepers, pitprops, pulpwood, and other industrial products.

*Processed wood production* includes sawnwood and panels. *Sawnwood* is wood that has been sawn, planed, or shaped into products such as planks, beams, boards, rafters, or railroad ties. Wood flooring is excluded. Sawnwood generally is thicker than 5 millimeters. *Panels* include all wood-based panel commodities such as veneer sheets, plywood,



particle board, and compressed or noncompressed fiberboard.

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

*Average annual net trade in roundwood* is the balance of imports minus exports. 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. All trade data refer to both coniferous and nonconiferous wood. Imports

are usually on a cost, insurance, and freight basis. Exports are generally on a free-on-board basis.

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 population data and country-specific, per capita consumption figures to estimate fuelwood and charcoal production. Consumption of nonconiferous fuelwood ranges from a low of 0.0016 cubic meter per capita per year in Jordan to a high of 0.9783 cubic meter per capita per year in Benin. Consumption was also estimated for coniferous fuelwood. For both coniferous and nonconiferous fuelwood, the per capita consumption estimates were multiplied by the number of people in the country to determine national totals.