
Appendixes

Status of Tropical Forests: Tables

Table A-I.—Closed Forests in Tropical Africa, America, and Asia, 1980
(thousands of hectares)

Country	Total area	Closed forest area	Percent of total	Country	Total area	Closed forest area	Percent of total
<i>Tropical Africa:</i>				Colombia	113,889	46,400	40.7
Zaire	226,760	105,750	46.6	Mexico	196,718	46,250	23.5
Congo	34,200	21,340	62.4	Bolivia	109,858	44,010	40.1
Gabon	26,767	20,500	76.6	Venezuela	91,205	31,870	34.9
Cameroon	47,544	17,920	37.7	Guyana	21,497	18,475	85.9
Madagascar	59,099	10,300	17.4	Surinam	16,382	14,830	90.5
Nigeria	92,377	5,950	6.4	Ecuador	27,067	14,250	52.6
Ivory Coast	32,246	4,458	13.8	French Guiana	9,100	8,900	97.8
Ethiopia	122,190	4,350	3.6	Nicaragua	13,000	4,496	34.6
Central African Republic	62,298	3,590	5.8	Guatemala	10,889	4,442	40.8
Zambia	75,261	3,010	4.0	Panama	7,708	4,165	54.0
Angola	124,670	2,900	2.3	Paraguay	40,675	4,070	10.0
Guinea	24,586	2,050	8.3	Honduras	11,209	3,797	33.9
Liberia	9,632	2,000	20.8	Costa Rica	5,090	1,638	32.2
Ghana	23,854	1,718	7.2	Cuba	11,450	1,455	12.7
Somalia	63,754	1,540	2.4	Belize	2,297	1,354	59.0
Tanzania	93,970	1,440	1.5	Dominican Republic	4,840	629	13.0
Equatorial Guinea	2,806	1,295	46.2	El Salvador	2,099	141	6.7
Kenya	58,037	1,105	1.9	Jamaica	1,142	67	5.9
Mozambique	78,303	935	1.2	Haiti	2,775	48	1.7
Uganda	19,684	765	3.9	Trinidad and Tobago	513	208	40.6
Sierra Leone	7,333	740	10.1	Total	1,679,121	678,655	40.4
Guinea-Bissau	3,613	660	18.3	<i>Tropical Asia:</i>			
Sudan	250,581	650	0.3	Indonesia	191,930	113,895	59.3
Chad	128,400	500	0.4	India	328,700	51,841	15.8
Togo	5,680	304	5.4	Papua New Guinea	46,170	34,230	74.1
Senegal	19,672	220	1.1	Burma	67,658	31,941	47.2
Zimbabwe	38,936	200	0.5	Malaysia	33,008	20,995	63.6
Malawi	11,858	186	1.6	Philippines	29,940	9,510	31.8
Rwanda	2,634	120	4.6	Thailand	51,352	9,235	18.0
Gambia	1,040	65	6.2	Viet Nam	33,433	8,770	26.2
Benin	11,262	47	0.4	Laos	23,680	8,410	35.5
Burundi	2,783	26	0.9	Kampuchea	18,104	7,548	41.7
Botswana	57,500	a	a	Pakistan	80,519	2,185	2.7
Namibia	82,429	a	a	Bhutan	4,660	2,100	45.1
Upper Volta	27,420	a	a	Nepal	14,080	1,941	13.8
Niger	126,700	a	a	Sri Lanka	6,558	1,659	25.3
Mali	120,383	a	a	Bangladesh	14,400	927	6.4
Total	2,176,279	216,634	10.0	Brunei	577	323	56.0
<i>Tropical America:</i>				Total	944,769	305,510	32.3
Brazil	851,111	357,480	42.0				
Peru	128,522	69,680	54.2				

*No data; in most cases this is where the areas are very small.

SOURCE: Food and Agriculture Organization/United Nations Environment Programme, Tropical Forest Resources Assessment Project (GEMS) Tropical Africa, Tropical Asia, Tropical America, 4 vols. (Rome 1981)

Table A-2.—Condition of Closed Forests in Tropical Africa, America, and Asia, 1980

Country	Undisturbed (%)	Logged (%)	Managed (%)	Physically unproductive (%)	Parks and protected areas
Tropical Africa:					
Zaire	75		a	19	5
Congo	48	16	a	35	1
Gabon	52	45	a	3	a
Cameroon	39	55	a	5	a
Madagascar	16	49	a	26	9
Nigeria	6	44	a	50	
Ivory Coast	4	69	a	12	15
Ethiopia	15	23	a	62	a
Central African Republic	87	10	a	3	a
Zambia	11	65	a	16	7
Angola	0	84	a	16	a
Guinea	56	15	a	29	a
Liberia	45	21		34	
Ghana	a	9	68		23
Somalia		6	a	94	
Tanzania	17	40	a	14	28
Equatorial Guinea	61	18		22	
Kenya	22	16	6	4	52
Mozambique	7	41		49	3
Uganda	13		58	5	8
Sierra Leone		30	a		a
Guinea-Bissau	54	11		36	a
Sudan		45	8	47	a
Chad	100		a		a
Togo	15	68	a	17	
Senegal	6	a	a	65	29
Zimbabwe	a		a	100	
Malawi	a	22	a	a	78
Rwanda	a	47	a	40	13
Gambia		8	a	92	a
Benin	30	70	a		
Burundi	a	23	a	15	62
Botswana	a	a	a	a	a
Namibia	a	a	a	a	a
Upper Volta	a	a	a	a	a
Niger	a	a	a	a	a
Mali	a	a	a	a	a
Total	55	20	- i	20	4
Tropical America:					
Brazil	81	3	a		1
Peru	54	9	a	36	1
Colombia			a	10	5
Mexico	28	25	a	47	1
Bolivia	40	27	a	32	
Venezuela		36	a	26	14
Guyana	66		a	27	a
Surinam	81	3	a	12	4
Ecuador	76	1	a	21	2
French Guiana	84	2	a	15	a
Nicaragua	80	5	a	9	a
Guatemala	27	41	a	31	1
Panama	51	20	a	29	
Paraguay	14	61	a	23	2
Honduras	21	57	2	20	
Costa Rica	20	47	a	13	20
Cuba	a	55	14	32	a
Belize		66	a	34	a
Dominican Republic	38	53	a	9	a
El Salvador		18	a	82	
Jamaica	61		a	30	3
Haiti	19	33	a	48	a
Trinidad and Tobago	a	64	7	29	a
Total	67	10	a	21	2

Table A-2.—Condition of Closed Forests in Tropical Africa, America, and Asia, 1980—Continued

Country	Undisturbed (%)	Logged (%)	Managed (%)	Physically unproductive (%)	Parks and protected areas
Tropical Asia:					
Indonesia	34	31		30	5
India	12	8	63	4	13
Papua New Guinea	40	1		59	a
Burma		18	11	24	1
Malaysia	36	26	12	21	5
Philippines	32	41	a	20	7
Thailand	50		a	26	24
Viet Nam	18	25	1	50	6
Laos	43		a	57	a
Kampuchea	61	11		28	a
Pakistan	19	10	19	51	1
Bhutan	57	30	a	13	a
Nepal	46	20	a	18	17
Sri Lanka	1	73		14	12
Bangladesh	5	1	86	3	6
Brunei	84	5	a	10	1
Total	33	20	13	28	6

*No data, in most cases this is where the areas are very small.

SOURCE Food and Agriculture Organization/United Nations Environment Programme, Tropical Forest Resources Assessment Project (GEMS) Tropical Africa, Tropical Asia, Tropical America, 4 vols. (Rome: 1981).

Table A.3.—Open Forest and Shrubland in Tropical Africa, America, and Asia, 1980
(thousands of hectares)

Country	Open forest	Percent of total area	Shrubland	Percent of total area	Country	Open forest	Percent of total area	Shrubland	Percent of total area
Tropical Africa:					Colombia	5,700	5.0	5,500	4.8
Zaire	71,640	31.7	11,300	5.0	Venezuela	3,300	3.6	2,120	2.3
Angola	50,700	40.7	16,150	13.0	Mexico	2,100		59,500	30.3
Sudan	47,000	18.8	87,000	34.7	Peru	1,120	3.1	3,150	2.4
Tanzania	40,600	43.2	13,800	14.7	Surinam	690	4.2	200	1.2
Botswana	32,560	56.6	20,000	34.8	Ecuador	550	2.0	1,050	3.9
Central African Republic					Honduras	200	1.8	1,220	10.9
Zambia	26,500	35.2	3,200	4.2	Costa Rica	160	3.1	120	2.4
Ethiopia	22,600	18.7	25,000	20.5	Guatemala	100	0.9	1,505	13.8
Zimbabwe	19,700	50.6	900	2.3	Belize	92	4.0	46	2.0
Namibia	18,420	22.3	37,315	45.3	French Guiana	70	0.8	7	0.1
Mozambique	14,500	18.5	29,000	37.0	Guyana	25	0.1	115	0.5
Chad	13,000	10.1	9,750	7.6	Haiti	a	a	53	1.9
Senegal	10,825	55.0	1,365	6.9	Dominican Republic	a	a	54	1.1
Nigeria	8,800	9.5	36,800	39.8	Nicaragua	a	a	210	1.6
Mali	8,800	7.3	6,000	5.0	Panama	a	a		
Guinea	8,600	35.0	7,000	28.5	Jamaica	a	a	227	19.9
Cameroon	7,700	16.2	9,500	20.0	Trinidad and Tobago	a	a		1.2
Somalia	7,510	11.8	53,000	83.1	Cuba	a	a	305	2.7
Upper Volta	7,200	26.3	3,000	10.9	El Salvador	a	a	293	14.0
Ghana	6,975	29.2	300	1.3	Total	278,647	16.6	145,881	8.7
Ivory Coast	5,376	16.7	60	0.2	Tropical Asia				
Uganda	5,250	26.7	100	0.5	Thailand	6,440	12.5	500	1.0
Malawi	4,085	34.4	380	3.2	India	5,393	1.6	5,378	1.6
Benin	3,820	33.9	3,075	27.3	Laos	5,215	22.0	735	3.1
Madagascar	2,900	4.9	4,000	6.8	Kampuchea	5,100	28.2	400	2.2
Niger	2,900	2.3	6,000	4.7	Papua New Guinea	3,945	8.5	85	0.2
Guinea-Bissau	1,445	40.0	17	0.5	Indonesia	3,000	1.6	23,900	12.4
Togo	1,380	24.3	2,265	39.9	Viet Nam	1,340	4.0	330	1.0
Sierra Leone	1,315	17.9	3		Pakistan	295	0.4	1,105	1.4
Kenya	1,255	2.2	37,500	64.1	Nepal	160	1.3	230	1.6
Gambia	150	14.4	360	34.6	Bhutan	40	0.9	25	0.5
Rwanda	110	4.2	90	3.4	Malaysia	a	a	a	a
Gabon	75	0.3			Philippines	a	a	a	
Liberia	40	0.4	100	1.1	Brunei	a	a		
Burundi	14	0.5	a		Sri Lanka	a	a	215	3.3
Congo	a	a	1,400	4.1	Burma	a	a	2,600	3.8
Equatorial Guinea	a	a	10	0.4	Bangladesh	a	a	a	a
Total	486,445	22.4	442,740	20.3	Total	30,948	3.3	35,503	3.8
Tropical America:									
Brazil	211,200	24.8	61,200	7.2					
Paraguay	28,640	70.4							
Bolivia	24,700	22.5	9,000	8.2					

^aNo data; in most cases this is where the areas are very small.

SOURCE: Food and Agriculture Organization/United Nations Environment Programme, *Tropical Forest Resources Assessment Project (GEMS): Tropical Africa, Tropical Asia, Tropical America*, 4 vols. (Rome: 1981).

Table A-4.—Forest Fallow in Tropical Africa, America, and Asia, 1980 (thousands of hectares)

Country	Forest fallow	Ration of forest fallow to closed forest	Country	Forest fallow	Ration of forest fallow to closed forest
Tropical Africa:			Paraguay	3,270	0.8
Sierra Leone	3,860	5.2	Mexico	26,000	0.6
Ghana	6,500	3.8	Cuba	700	0.5
Liberia	5,500	2.8	Dominican Republic	267	0.4
Ivory Coast	8,400	1.9	Belize	525	0.4
Angola	4,850	1.7	Venezuela	10,650	0.3
Nigeria	7,750	1.3	Trinidad and Tobago	57	0.3
Sudan	600	0.9	Nicaragua	1,370	0.3
Equatorial Guinea	1,165	0.9	Colombia	8,500	0.2
Togo	250	0.8	Ecuador	2,350	0.2
Guinea	1,600	0.8	Honduras	680	0.2
Mozambique	500	0.5	El Salvador	22	0.2
Burundi		0.5	Peru	5,350	0.1
Zambia	900	0.3	Brazil	46,420	0.1
Cameroon	4,900	0.3	Guatemala	360	0.1
Madagascar	3,500	0.3	Costa Rica	120	0.1
Guinea-Bissau	170	0.3	Surinam	270	a
Rwanda	25	0.2	Bolivia	1,100	a
Benin	7	0.2	French Guiana	75	a
Tanzania	100	0.1	Guyana	200	a
Gabon	1,500	0.1	Panama	124	a
Zaire	7,800	0.1	Total	108,612	0.2
Central African Republic	300	0.1	Tropical Asia:		
Congo	1,100	0.1	Viet Nam	10,750	1.2
Ethiopia	300	0.1	Brunei	237	0.7
Kenya	55	0.1	Laos	5,000	0.6
Uganda	a	a	Burma	18,100	0.6
Somalia	a	a	Sri Lanka	853	0.5
Zimbabwe	a	a	Philippines	3,520	0.4
Botswana	a	a	Bangladesh	315	0.3
Namibia	a	a	Malaysia	4,825	0.2
Malawi	a	a	India	9,470	0.2
Chad	a	a	Indonesia	13,460	0.1
Gambia	a	a	Thailand	800	0.1
Mali	a	a	Nepal	110	0.1
Niger	a	a	Bhutan	205	0.1
Senegal	a	a	Papua New Guinea	1,380	a
Upper Volta	a	a	Kampuchea	200	a
Total	61,646	0.3	Pakistan	a	a
Tropical America:			Total	69,225	0.2
Jamaica	159	2.4			
Haiti	43	0.9			

^aNo data; in most cases this is where the areas are very small.

[†]Forest fallow island that has been cleared for cultivation and subsequently abandoned so that it may again have woody vegetation.

SOURCE Food and Agriculture Organization/United Nations Environment Programme, *Tropical Forest Resources Assessment Project (GEMS): Tropical Africa, Tropical Asia, Tropical America*, 4 vols (Rome: 1981)

Table A-5.—Forest Plantations in Tropical Africa, America, and Asia, 1980

Country	Total land area (1,000 ha)	Area of plantations (ha)	Industrial plantations (%)	Nonindustrial plantations (%)
Tropical Africa:				
Madagascar	58,693	266,000	42	58
Sudan	250,658	187,850	31	69
Kenya	58,272	180,900	87	13
Nigeria	92,361	163,300	90	10
Angola	124,680	157,200	43	57
Zimbabwe	38,936	100,250	71	29
Ethiopia	122,187	98,200	1	99
Tanzania	94,239	97,750	69	31
Malawi	11,847	60,300	97	
Ghana	23,856	75,250		65
Uganda	23,607	45,700	30	70
Ivory Coast	32,243	44,900	84	16
Zambia	75,261	38,000	88	
Rwanda	2,635	29,000	12	88
Mozambique	78,311	25,400	63	37
Zaire	234,628	22,500	84	16
Burundi	2,721	19,500	33	67
Gabon	26,766	19,000	63	37
Benin	11,261	19,000	41	59
Cameroon	47,541	18,500	56	44
Congo	34,199	16,800	100	0
Senegal	19,671	12,500	28	72
Upper Volta	27,418	12,000	0	100
Togo	5,685	11,300	67	33
Somalia	63,732	11,000	0	100
Liberia	11,135	6,300	100	0
Niger	126,638	6,000	0	100
Sierra Leone	7,334	5,800	91	9
Chad	128,449	3,200	0	100
Guinea	23,852	2,850	75	
Mali	120,383	1,900	11	89
Gambia	1,040	1,300	100	0
Central African Republic	62,298	500		100
Guinea-Bissau	3,613	350	14	14
Namibia	82,416	300	100	0
Botswana	57,496	a	—	—
Equatorial Guinea	2,805	a	—	—
Total	2,189,595	1,780,600	56	44
Tropical America:				
Brazil	770,064	3,855,000	51	49
Mexico	197,266	159,000	45	55
Cuba	11,448	157,000	100	0
Venezuela	91,209	124,500	97	3
Colombia	113,880	95,000	100	0
Peru	128,517	84,000	39	61
Ecuador	27,067	43,000	100	0
Bolivia	109,866	25,900	23	77
Trinidad and Tobago	513	16,000	100	0
Guatemala	10,889	15,800	100	0
Jamaica	1,141	12,800	100	0
Surinam	16,382	8,500	100	0
Dominican Republic	4,838	5,700	0	100
Panama	7,709	4,000	100	0
Belize	2,297	3,100	100	0
Paraguay	40,674	3,000	63	37
Costa Rica	5,091	2,800	100	0
El Salvador	2,098	1,500	100	0
Nicaragua	13,928	1,300	100	0
Guyana	21,497	1,200	100	0
Haiti	2,775	1,000	0	100
French Guyana	9,100	450	100	0
Honduras	11,209	a	—	—
Total	1,564,667	4,620,550	55	45

Table A-5.—Forest Plantations in Tropical Africa, America, and Asia, 1980—Continued

Country	Total land area (1,000 ha)	Area of plantations (ha)	Industrial plantations (%)	Nonindustrial plantations (%)
Tropical Asia:				
India	328,742	2,061,300	74	26
Indonesia	191,914	1,918,000	1	99
Philippines	29,981	300,000	2	98
Viet Nam	33,433	204,000	8	92
Pakistan	80,519	160,000	0	100
Bangladesh	14,284	128,000	100	0
Thailand	68,152	114,000	55	45
Sri Lanka	6,560	112,300	100	0
Malaysia	33,068	26,000	25	75
Papau New Guinea	46,172	21,700	0	100
Nepal	14,140	18,700	74	26
Burma	67,801	16,000	3	97
Laos	23,679	11,000	70	30
Bhutan	4,662	7,000	100	—
Kampuchea	18,105	6,800	59	41
Brunei	576	a	—	—
Total	944,841	5,111,500	66	34

SOURCE: Food and Agriculture Organization/United Nations Environment Programme, *Tropical Forest Resources Assessment Project* (GEMS) *Tropical Africa, Tropical Asia, Tropical America*, 4 vols (Rome: 1981)

Table A-6.—Deforestation—Tropical Africa, America, and Asia, 1981-85

Country	Annual deforestation of closed forests (1,000 ha)	Percent deforested per year	Country	Annual deforestation of closed forests (1,000 ha)	Percent deforested per year
Tropical Africa:					
Ivory Coast	300	6.5	Haiti	2	3.8
Nigeria		5.0	El Salvador	5	3.2
Rwanda	3	2.7	Jamaica	2	3.0
Burundi	1	2.7	Nicaragua	121	2.7
Guinea-Bissau	17	2.6	Honduras	90	2.4
Benin	1	2.6	Ecuador	34	2.4
Liberia	46	2.3	Guatemala	90	2.0
Guinea	36	1.8	Colombia	820	1.8
Kenya	19	1.7	Mexico	595	
Angola	44	1.5	Panama	36	0.9
Madagascar	150	1.5	Belize	9	0.7
Ghana	22	1.3	Dominican Republic	4.0	0.6
Uganda	10	1.3	Brazil	1,480	0.4
Zambia	40	1.3	Peru	270	0.4
Mozambique	10	1.3	Trinidad and Tobago	1	0.4
Sierra Leone	6	0.8	Venezuela	125	0.4
Togo	2		Bolivia	87	0.2
Tanzania	10	0.7	Cuba	2	0.1
Sudan	4	0.6	Surinam	3	0.0
Chad	2	0.4	French Guiana	1	0.0
Cameroon	80	0.4	Guyana	3	0.0
Zaire	182	0.2	Total	4,339	0.6
Somalia	4	0.2	Tropical Asia:		
Ethiopia	8	0.2	Nepal	84	4.3
Equatorial Guinea	3	0.2	Sri Lanka	58	3.5
Central African Republic	5	0.1	Thailand	252	2.7
Congo	22	0.1	Brunei	5	1.6
Gabon	15	0.1	Laos	100	1.2
Botswana	a	a	Malaysia	255	1.2
Namibia	a	a	Philippines	91	1.0
Zimbabwe	a	a	Bangladesh	8	0.9
Mali	a	a	Viet Nam	65	0.7
Malawi	a	a	Indonesia	600	0.5
Upper Volta	a	a	Pakistan	7	0.3
Senegal	a	a	India	147	0.3
Niger	a	a	Kampuchea	25	0.3
Gambia	a	a	Burma	105	0.3
Total	1,332	0.6	Bhutan	2	0.1
Tropical America:			Papua New Guinea	22	0.1
Paraguay	190	4	Total	1,826	0.6
Costa Rica	65	4.0			

^aNo data. in most cases this is where the areas are very small.

SOURCE: Food and Agriculture Organization/United Nations Environment Programme, *Tropical Forest Resources Assessment Project (GEMS): Tropical Africa, Tropical Asia, Tropical America*, 4 vols. (Rome: 1981)

Table A-7.—Per Capita Open Forest Areas in Tropical Africa, America, and Asia, 1980

Country	Open forest area (1,000 ha)	Hectares of open forest per capita	Country	Open forest area (1,000 ha)	Hectares of open forest per capita
Tropical Africa:			Surinam	690	1.8
Botswana	32,560	40.3	Brazil	211,200	1.7
Namibia	18,420	18.3	French Guiana	70	1.1
Central African Republic	32,300	14.1	Belize	92	0.6
Angola	50,700	7.2	Venezuela	3,300	0.2
Zambia	26,500	4.6	Colombia	5,700	0.2
Chad	13,000	2.9	Peru	1,120	0.1
Zimbabwe	19,700	2.7	Ecuador	550	0.1
Sudan	47,000	2.6	Honduras	200	0.1
Zaire	71,640	2.5	Costa Rica	160	0.1
Guinea-Bissau	1,445	2.5	Guyana	25	b
Tanzania	40,600	2.3	Cuba	a	b
Senegal	10,825	1.9	Dominican Republic	a	b
Guinea	8,600	1.7	Trinidad and Tobago		b
Somalia	7,510	1.6	Mexico	2,100	b
Mozambique	14,500	1.4	Panama		b
Mali	8,800	1.3	Guatemala	100	b
Benin	3,820	1.1	Haiti	a	b
Upper Volta	7,200	1.0	El Salvador	a	b
Cameroon	7,700	0.9	Jamaica	a	b
Malawi	4,085	0.7	Nicaragua	a	b
Ethiopia	22,800	0.7	Total	278,647	0.9
Ivory Coast	5,376	0.7	Tropical Asia:		
Ghana	6,975	0.6	Laos	5,215	1.4
Niger	2,900	0.5	Papua New Guinea	3,945	1.3
Togo	1,380	0.5	Kampuchea	5,100	0.8
Sierra Leone	1,315	0.4	Thailand	6,440	0.1
Uganda	5,250	0.4	India	5,393	b
Madagascar	2,900	0.3	Bhutan	40	b
Gambia	150	0.2	Philippines	a	b
Gabon	75	0.1	Bangladesh		b
Kenya	1,255	0.1	Viet Nam	1,340	b
Nigeria	8,800	0.1	Indonesia	3,000	b
Congo	a	b	Pakistan	295	b
Equatorial Guinea	a	b	Burma	a	b
Liberia	40	b	Brunei	a	b
Rwanda	110	b	Malaysia	a	b
Burundi	14	b	Nepal	180	b
Total	486,445	1.4	Sri Lanka	a	b
Tropical America:			Total	30,948	b
Paraguay	28,640	9.0			
Bolivia	24,700	4.4			

^aNo data in most cases this is where the areas are very small.

^bLess than 0.05 forest hectares per capita.

SOURCE: Population Reference Bureau, 1983 *World Population Data Sheet*, Washington, D.C.; Food and Agriculture Organization/United Nations Environment Programme, *Tropical Forest Resources Assessment Project (GEMS) Tropical Africa, Tropical Asia, Tropical America*, 4 vols. (Rome, 1981)