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Aid to the Bottom Billion: A Cautionary Tale

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The world's tropical forests nations present severe problems to the industrial world. Despite wanting to help in any way to preserve reserves of carbon and biodiversity for the future, they have a number of governance issues that have received little attention in the academic literature. The Bottom Billion are the one billion countries whose populations earn the least in per capita income. These nations are prominent in many ways, as the forest data show [1]. In this paper, I propose an exploratory use of four groups of low-income nations that allow these countries to be compared, one with another, and with industrial nations. These results may be of interest to students of forest policy and of efforts to improve conservation of biodiversity and carbon. It is important to stress that treating a region as large as Brazil or DRC as a single country is problematic. Its proportions surely vary widely in many of these indexes. As this is an exploratory study we only offer highlights. Statistical analysis is kept to a minimum. Those interested in particular countries may consult any recent issue of the International Forestry Review.

Keywords: Forests, Deforestation, Socioeconomic Drivers

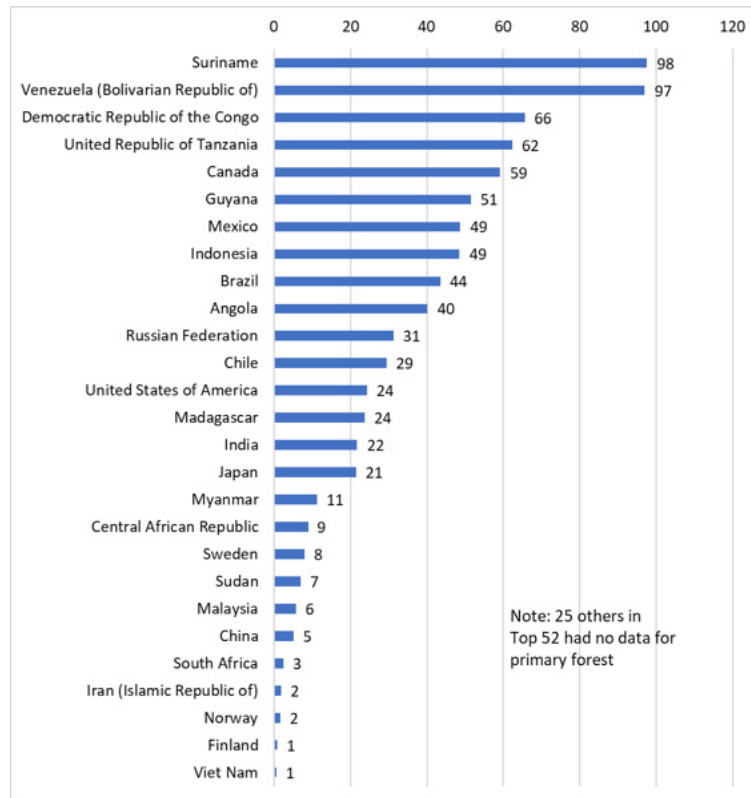
Methods

As a reminder, we offer Table 1, showing the distribution of forest area by continent. These continental boundaries often do not relate well to ecological conditions but we can see that at least 1.7 billion ha, or 35%, lies in the principal tropical regions.

Continent	No. Countries	M ha
World	236	4,058,931
Africa	58	636,639
Asia	48	622,687
Europe*	50	1,017,461
North and Central America	41	752,710
Oceania	25	185,248
South America	14	844,186
* Europe includes all of Russia. Source: FAO (2020).		

Table 1: Total area of forests by major continents

The question of whether a forest is primary – displaying little or no influence of timber harvesting is another key trait (Figure 1). This partial dataset shows that Canada, Russia, the USA, the three Nordic countries, and South Africa have varying quantities but the rest are tropical nations.



Source: FAO (2021a).

Figure 1: Percent of Forest that is Judged Primary 2020

To evaluate this issue for these poorer nations, we first obtained from the websites the data of their members. Then we obtained the FAO data on forest area. The four groups of nations were all nations with important resources and recipients of various programs for improving forest productivity in one of several dimensions. The data on four different lists of countries (Table 2) were matched with their forest area. Various analyses were then conducted to see how the countries compare according to those indices. The full membership are given in the appendix.

Index or Data Source	Compiled By	No. Countries	No. Data Elements or Indicators	No. Years of Data
Forest Data	FAO	237	4	1990-2020
Corruption Perceptions Index	Transparency International	177	numerous	1970s to 2020
EPI	Yale and Columbia	179	numerous	32
Fragile States Index	The Fund for Peace	179	numerous	2006-2021
Democracy Index	Economist EIU	165	5 principal factors	2006-2021
Informality Index	ILO	90	1	various years
Criminality	Global Initiative Transnational Against Organized Crime	193	350	2021
Sub Groups				
Mo Ibrahim Index (Africa)	Mo Ibrahim Foundation	54	237 elements; 79 indicators	2010-2019
Bottom Billion	Paul Collier	57	several development traps	"early 00's"
ITTO Tropical Producers	ITTO	37	numerous	current
Illicit Drugs prod/transit	US Dept. of State	22	multiple sources	2021
FCPF	World Bank	47	n.a.	n.a.

Table 2: Summary of Data Sources on Forests and Governance

The Mo Ibrahim Index evaluates governance in Africa. It deals with 53 nations, but here only the top 20 will be used. The smaller ones often have weaker forest information. The Bottom Billion is a group of the 54 poorest nations assessed by noted author Paul Collier. The ITTO Tropical Producers (37 members) and the Forest Carbon Partnership Facility (45 countries) are multinational efforts aimed at ambitious conservation and climate goals. As one might suspect, there is considerable overlap among these.

Socioeconomic variables are self-explanatory. But the EPI And FSI may not be familiar. The EPI is an index for broadly defined environmental policies designed to capture all resources that include air, water, land use, biodiversity and others, for a total of 58 subindices.. Forests are only four. The FSI is an index made up of numerous subindices to show the extent to which a state is fragile.

Results: The Four Groups

These four groups include many smaller nations not in the Top 52, which are the largest 52 nations. They include all that exceed 10 million hectares of forest. Measured by forest area, the largest is the ITTO Tropical Producers, and smallest is the Mo Ibrahim Index, which applies only to Africa. The FCPF includes participants in a forest carbon program by the World Bank. The Bottom Billion includes many small countries and has 724 million ha of forest.

This section briefly explores selected governance indicators for these groups and then compares them with those for the Top 52 – another group of potential interest, not considered here, is the Rainforest OPEC. The COP 27 at Sharm el Sheik in Egypt in Fall 2022 saw the floating of an idea of a “Rainforest OPEC” consisting of Brazil, Indonesia, and the DRC; together they account for 714 million ha of forest, or 19% of the globe’s total. None rank well on corruption. As to CPI’s, they rank as follows: Brazil, 54th; Indonesia, 118th; and DRC, 125th.

Africa: Mo Ibrahim Index of Governance (MIIG)

The Mo Ibrahim Foundation presents its own index based on detailed analysis and regional consultation. It covers a list of 54 African nations [4]. The largest 20 countries in the MIIG by forest area encompass 564 million ha of forest and 145 million ha of primary forest. When ranked by MIIG quintiles, 27% of area is in the top 2 MIIG quintiles, whereas 51% is in the lowest two quintiles (Table 3). Governance is a critical issue in Africa since many nations there are involved in carbon storage and forest retention projects, as well as ambitious planting programs [5,6]. Africa has been studied more carefully by Transparency International (2025) [7]. At this writing, the Economist EIU ratings show only one African nation – Mauritius – as a full democracy; six others are rated as flawed democracies

	Country	All Forest	Primary	MIIG	Percent Primary
1	Dem. Rep. Congo	126,155	82,752	31.7	66%
2	Angola	66,607	26,743	40.0	40%
3	Tanzania	45,745	28,508	53.0	62%
4	Zambia	44,814		52.0	
5	Mozambique	36,744		49.0	
6	Gabon	23,531		47.7	
7	Cent. African Rep.	22,303		30.7	
8	Congo	21,946		36.1	
9	Nigeria	21,627		45.5	
10	Cameroon	20,340		43.5	
11	Sudan	18,360	1,284	32.5	7%
12	Zimbabwe	17,445		46.1	
13	Ethiopia	17,069		46.6	
14	South Africa	17,050	428	65.8	3%
15	Botswana	15,255		66.9	
16	Mali	13,296		46.6	
17	Madagascar	12,430	2,950	44.4	24%
18	Senegal	8,068	2,019	63.2	25%
19	Ghana	7,986	385	64.3	5%
20	Liberia	7,617		47.9	

Note: Senegal, Ghana and Liberia are not in the Top 52.

Source: MIIG database.

Table 3: Largest 20 African Nations Rated by MIIG, 2020. (M ha)

ITTO Tropical Producers

The ITTO lists 37 nations as producer members. Of these, 23 are in the Top 52. By continents they are, Africa, 14; Asia and Pacific, 10; and Latin America, 13. These 37 nations include about 1.5 billion ha of total forest area, including 46 million ha of planted forests. For the group as a whole, the average CPI is 33; 31% of the forest area is in the lowest 2 quintiles of CPI. The average Fragile States Index is 75, ranging from the least fragile (Costa Rica) at 40.2 to 109.4 for the DRC, the highest index in 2020. The two most fragile quintiles contain 19% of the forest area of this group but almost none of the planted area. (Figure 2) Sixteen of the tropical producers are in the Bottom Billion.

By CPI they rate fairly low, as they do by EPI.

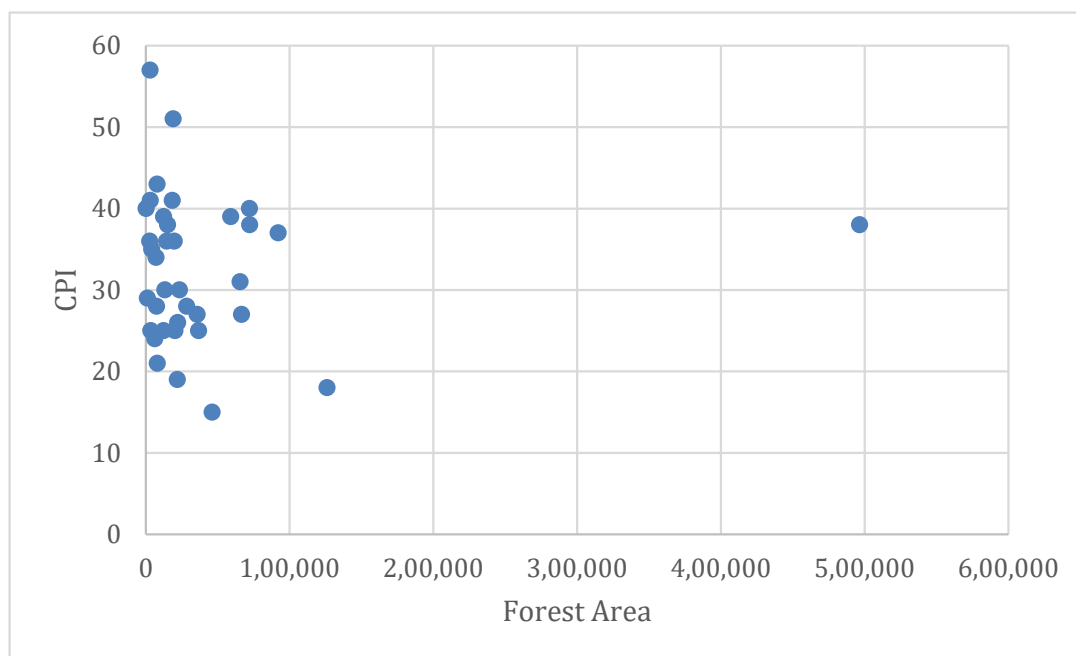


Figure 2: ITTO: Forest Area by CPI

Countries	2020 Forest Area	CPI	FSI	EPI
Venezuela (Bolivarian Republic of)	46,231	15	40.2	53.3
Gabon	23,531	30	69.9	53.3
Brazil	496,620	38	87.3	53
Colombia	59,142	39	109.4	49.7
Guyana	18,415	41	75.3	49
Peru	72,330	38	80.3	46.5
Thailand	19,873	36	66	45.7
Mexico	65,692	31	76.6	44.2
Congo	21,946	19	64.2	41.6
Malaysia	19,114	51	76.8	41
Angola	66,607	27	107.5	40.1
Democratic Republic of the Congo	126,155	18	72.5	39.5
Mozambique	36,744	25	89.7	39
Central African Republic	22,303	26	69.1	39
Cameroon	20,340	25	79.2	38.6
Papua New Guinea	35,856	27	32	36.9
Indonesia	92,133	37	73	33.6
India	72,160	40	97.9	27.6
Myanmar	28,544	28	69.4	27.1
	1,343,737			

Source: ITTO and website for CPI, FAS, and EPI.

Table 4: ITTO Nations and Several Indicators of Governance

Forest Carbon Partnership Facility

The World Bank's Forest Carbon Partnership Facility assists 45 countries for long-term forest carbon storage projects. These total nearly 1 billion ha of forest area; 23 are in the Top 52 by forest area. A few lack data on one or more of the governance indices. The list includes no full democracy. The 45 rated countries are evenly split among the autocracies (37%), flawed democracies (42%), and hybrid polities (21%) (Table 5). The FCPF nations clearly face governance issues: 49% of the forest area in this group is in the bottom two quintiles of the CPI, formerly known as the "rampant corruption" category. The highest CPI in the list rates a 53, the lowest rates a 22.

Category	No. Countries	Forest Area M ha	Percent
Authoritarian	14	355,251	37%
Flawed Democracy	15	407,064	42%
Hybrid	16	201,962	21%
Full Democracy	0	0	0%
Totals	45	964,277	100%

Source: Economist Intelligence Unit, and FAO (2021b).

Table 5: Forest Carbon Partnership Facility Nations by Democracy Category

Country	Acres	EPI
Gabon	23,531	53.3
Colombia	59,142	49.7
Chile	18,211	49.6
Guyana	18,415	49
Argentina	28,573	47
Peru	72,330	46.5
Thailand	19,873	45.7
Bolivia (plurinational state of)	50,834	45.3
Mexico	65,692	44.2
United Republic of Tanzania	45,745	43.6
Congo	21,946	41.6
Democratic Republic of the Congo	126,155	39.5
Sudan	18,360	39.1
Mozambique	36,744	39
Central African Republic	22,303	39
Cameroon	20,340	38.6
Nigeria	21,627	37.9
Papua New Guinea	35,856	36.9
Ethiopia	17,069	36.3
Indonesia	92,133	33.6
Total	814,878	

Source: worldbank.org

Table 6: FCPF: Forest Area and EPI

The Bottom Billion

Economist Paul Collier identified a group of 58 nations he called the "Bottom Billion" – a billion people living in the poorest of the poor low-income countries [1]. These face serious development traps, including landlocked locations, lack of resources, and weak infrastructure. Apart from Moldova in eastern Europe and Haiti in the Caribbean, all are in Asia or Africa. They include 18% of the world's population and a similar percentage of the world's forest area, 725 million ha. They also contain 14 million ha of planted forest. Overall, these nations increased in population twice as fast as the world as a whole. Nine African nations, mostly in the drylands, increased at 3% or more per year. Most are small; only 19 of these nations are in the Top 52, for a total of 613 million ha. These 19, however, account for 85% of the forest in the Bottom Billion (this chart does not have CPIs for North Korea, Somalia, and Yemen).

Quintile by MIIG	Forest Area	Percent	Range	Average CPI
Highest Quintile	113,125	16%	38 to 68%	44
Second Quintile	127,790	18%	31 to 37%	33
Middle Quintile	143,751	20%	27 to 30%	29
Lower quintile	149,721	21%	21 to 27%	25
Lowest quintile	177,940	25%	16 to 21%	19
Total	712,326	100%	n.a.	30

Table 7: Bottom Billion Ranked by CPI Quintiles

Highest are least corrupt.

The index of criminality follows the rating for corruption across countries.

Country	Ha	Criminality	EPI
Democratic Republic of the Congo	126,155	7.35	39.5
Angola	66,607	5.50	40.1
Bolivia (plurinational state of)	50,834	4.95	45.3
United Republic of Tanzania	45,745	6.20	43.6
Zambia	44,814	4.73	46.7
Mozambique	36,744	6.20	39.0
Myanmar	28,544	8.15	27.1
Central African Republic	22,303	6.75	39.0
Congo	21,946	4.78	41.6
Nigeria	21,627	7.28	37.9
Cameroon	20,340	6.27	38.6
Guyana	18,415	5.97	49.0
Sudan	18,360	6.37	39.1
Zimbabwe	17,445	5.47	51.6
Ethiopia	17,069	5.68	36.3
Lao People's Democratic Republic	16,596	6.12	26.3
Mongolia	14,173	4.02	37.2
Mali	13,296	5.93	34.5
Madagascar	12,430	5.58	30.1
Cambodia	8,068	6.85	31.2
Total	621,510		

Table 8: Forest Carbon Partnership

In some of these nations, ambitious programs of forest planting have been undertaken to deal with environmental and social needs [5]. Less than 2% of the Bottom Billion's forests are planted, totaling some 725,000 ha. But individual nations claim substantial planting efforts, including Azerbaijan, Burundi, Lesotho, Moldova, Rwanda, and Uzbekistan. So, poverty by itself is not always a barrier to planting. Six of the countries noted are former Soviet Republics, which are in generally arid areas and for which reported planting statistics may be of uncertain accuracy. Three of the Bottom Billion did not have CPI ratings: North Korea, Somalia, and Yemen. A summary of the 55 with CPI ratings shows 46% of the forest in the Bottom Billion in the lowest 2 quintiles; that is, below 27 on the CPI. A similar percentage of their forest area – 52% – is in the most fragile two quintiles by the Fragile State Index. None of this is encouraging for the long-term success of forestry programs.

Summary

Tables 9 and 10 supply a brief summary of Democracy, CPI, FSI, and EPI. They show averages for the first 3, and then the averages for the Top 52 for EPI. These show the countries in this study to be well below the world averages.

	No. Countries	Total 2020 Forest Area M ha	Democracy % D & FD	Average CPI	Average FSI
Top 52	52	3,747,389	54%	42	68
MIIG	54	635,860	4%	32	84
ITTO Producers	37	1,468,345	32%	33	75
FCPF	47	965,996	32%	35	75
Bottom Billion	58	724,885	3%	30	86
Source: FAO (2021b), Economist Intelligence Unit, and Fragile State Indexes.					

Table 9: Averages for Country Groupings

	EPI	Forest Area
Top quintile	75.7	925,476
Second quintile	51.2	1,572,144
Third quintile	43.5	344,524
Fourth Quintile	35.4	558,218
Fifth Quintile	29.9	347,027
Grand Total		3,747,389
Source: Yale and Columbia Universities, calcs, by author.		

Table 10: Average EPI and Forest Area Top 52

Discussion

Averaging selected indices allows comparison between the four groupings and the Top 52 (Table 9, 10). One important difference is size – all of these countries and the Bottom Billion are much smaller and contain few high-income nations or countries of northern latitudes. Notably, none of the special groups contains a single democracy, only flawed ones, although authoritarian regimes occur in all groups. The four special groups differ little among themselves in CPI or state fragility, due to their similar memberships. Yet, they differ materially from the averages of the Top 52. The financial flows intended to conserve forests and sequester more carbon and preserve biodiversity will have to flow from wealthy countries that are more politically stable, far less authoritarian, have less perceived corruption, and less fragile than the recipient nations

These economies have several features that render them distinctly difficult to manage when protecting forest is concerned.

Informality is the extent to which the government knows about you. Formal employment implies that the government has a name and address for every citizen and can thus reach you for taxes, law enforcement, and social benefits. Unfortunately, while we have only partial data on this, it is not high in tropical countries. Informality ranges from 97.3% in DRC to 52% in Brazil and 42% of workers in Mongolia. This matters for example, when canvassing chainsaw sawmills in West Africa [9].

Further, many of these nations are roiled by internal and external migration of refugees. According to the Refugee Data Center (2026), the total is 117.3 million people, of whom 73.5 million are internal [10]. Venezuela, Syria, Ukraine, Afghanistan, and Sudan total about 25 million.

The Geneva Academy (n.d.) lists 114 armed conflicts worldwide, in several cases multiple conflicts within one country's borders. Just within the lowest 16 nations ranked by governance, 9 contain such conflicts. Internal conflict is often both a cause of, and a result of, weak governance [11-16].

Several nations with important forest resources are plagued by illegal mining operations. Examples in Venezuela are coming to light, detected only by remote imaging [17]. Other nations are Brazil, Myanmar, and the Democratic Republic of Congo. Mining concessions on a large scale may be awarded by suspicious methods or may operate in defiance of government approvals or property rights and mining for "blood diamonds" [18-22]. Illegal mining has been on the upswing around the world and with the price of copper and many other precious metals at all-time highs, artisanal mining has been difficult to resist [23]. Attempts to corral it by means of certifications cannot be relied upon [24,25]. Illegal mining has been reviewed by Interpol (2022) as a forestry issue as well [23].significant issue. They estimate that at least 80 million people are employed in artisanal mining.

In the drylands, wood for fuel is critical for life support, as is the fodder supplied by trees and shrubs. In recent years, though, fieldwork in the drylands has found where local and regional fuelwood markets have been cartelized by local armed gangs or "mafias" which control harvesting, deliveries, and prices [26]. In the Triangle, and elsewhere, criminal

organizations have begun adding timber to their portfolio of products in response to the shortage in the south of Thailand. Finally, these countries span a range of GDP/ Capita and population trends.

Conclusion

- The level of corruption has little to do with the area of forest, for the 170 or so nations FAO assists, at least by countries. This is at least in part caused by the huge and remote areas in some countries. As the Chinese say, "the Emperor is far away."
- Further studies should study regional area more intensively, such as drylands nations or the Congo Basin and the Amazon Basin.
- For this sample consisting mostly of low-income places, corruption is relevant. Corruption is associated with many challenges of forest and forest industry in these lands.
- The index of criminality suggests that the effects of organized crime are significant and will affect the accountability for government funds, the ability to mobilize revenues, and to enforce other laws relevant to forestry.
- The problem is that it is hard to find information on a national basis that would enable relevant distinctions to be made to determine which practices are in fact sustainable and which are not.
- The indices should be used in general comparisons only and usually in the form of quintiles. The difference between a CPI rating of 50 versus 54 can be ignored, while the differences between the top quintile and the third quintile cannot.

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	Area
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Cameroon	20,340
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Zimbabwe	17,445
Ethiopia	17,069
South Africa	17,050
Botswana	15,255
Mali	13,296
Madagascar	12,430
Senegal	8,068
Ghana	7,986
Liberia	7,617
South Sudan	7,157
Namibia	6,639
Burkina Faso	6,216
Guinea	6,189
Somalia	5,980
Morocco	5,742
Chad	4,313
	Area
Kenya	3,611
Benin	3,135
Côte d’Ivoire	2,837
Sierra Leone	2,535
Equatorial Guinea	2,448
Uganda	2,338
Malawi	2,242
Guinea-Bissau	1,980
Algeria	1,949
Togo	1,209
Niger	1,080
Eritrea	1,055
Tunisia	703
Eswatini	498
Mauritania	313
Burundi	280
Rwanda	276
Gambia	243
Libya	217
São Tome and Principe	52
Cabo Verde	46
Egypt	45

Mauritius	39
Lesotho	35
Seychelles	34
Comoros	33
Djibouti	6
File: MIIG. 2022	

Appendix Table 1: Mo Ibrahim Index Nations: Covers Africa only

Country/Region	Total Forest 2020	Planted Forest 2020	Percent Planted	CPI Score
Brazil	496,620	11,224	2.3%	38
Democratic Republic of the Congo	126,155	58	0.0%	18
Indonesia	92,133	4,526	4.9%	37
Peru	72,330	1,088	1.5%	38
India	72,160	13,269	18.4%	40
Angola	66,607	807	1.2%	27
Mexico	65,692	100	0.2%	31
Colombia	59,142	427	0.7%	39
Venezuela	46,231	1,358	2.9%	15
Mozambique	36,744	74	0.2%	25
Papua New Guinea	35,856	61	0.2%	27
Myanmar	28,544	427	1.5%	28
Gabon	23,531	30	0.1%	30
Central African Republic	22,303	2	0.0%	26
Congo	21,946	60	0.3%	19
Cameroon	20,340	61	0.3%	25
Thailand	19,873	3,537	17.8%	36
Malaysia	19,114	1,697	8.9%	51
Guyana	18,415	0	0.0%	41
Suriname	15,196	14	0.1%	38
Viet Nam	14,643	4,349	29.7%	36
Mali	13,296	568	4.3%	30
Ecuador	12,498	111	0.9%	39
Madagascar	12,430	312	2.5%	25
Cambodia	8,068	604	7.5%	21
Ghana	7,986	297	3.7%	43
Liberia	7,617	27	0.4%	28
Philippines	7,189	381	5.3%	34
Honduras	6,359	0	0.0%	24
Panama	4,214	66	1.6%	35
Guatemala	3,528	152	4.3%	25
Benin	3,135	23	0.7%	41
Costa Rica	3,035	87	2.9%	57
Côte d'Ivoire	2,837	14	0.5%	36
Togo	1,209	61	5.0%	29
Fiji	1,140	207	18.1%	
Trinidad and Tobago	228	81	35.4	40
	1,468,345	46,159	3.1%	33

Appendix Table 2: ITTO tropical producing nations

Country	Acres
Democratic Republic of the Congo	126,155
Indonesia	92,133
Peru	72,330
Mexico	65,692
Colombia	59,142
Bolivia (plurinational state of)	50,834
United Republic of Tanzania	45,745
Mozambique	36,744
Papua New Guinea	35,856
Argentina	28,573
Gabon	23,531
Central African Republic	22,303
Congo	21,946
Nigeria	21,627
Cameroon	20,340
Thailand	19,873
Guyana	18,415
Sudan	18,360
Chile	18,211
Ethiopia	17,069
Lao People's Democratic Republic	16,596
Paraguay	16,102
Suriname	15,196
Viet Nam	14,643
Madagascar	12,430
Cambodia	8,068
Ghana	7,986
Liberia	7,617
Burkina Faso	6,216
Nepal	5,962
Panama	4,214
Pakistan	3,726
Kenya	3,611
Guatemala	3,528
Nicaragua	3,408
Costa Rica	3,035
Côte d'Ivoire	2,837
Bhutan	2,725
Uganda	2,338
Dominican Republic	2,144
Hungary	2,053
Uruguay	2,031
Belize	1,277
Togo	1,209
Fiji	1,140
El Salvador	584
Vanuatu	442

Appendix Table 3: FCPF

Country	Planted Forest	Total Forest	Percent Planted
Afghanistan	0	1,208	0.0%
Angola	807	66,607	1.2%
Azerbaijan	306	1,132	27.0%
Benin	23	3,135	0.7%
Bhutan	21	2,725	0.8%
Bolivia	63	50,834	0.1%
Burkina Faso	177	6,216	2.8%
Burundi	113	280	40.4%
Cambodia	604	8,068	7.5%
Cameroon	61	20,340	0.3%
Central African Republic	2	22,303	0.0%
Chad	20	4,313	0.5%
Comoros	0	33	0.6%
Congo	60	21,946	0.3%
Côte d'Ivoire	14	2,837	0.5%
Democratic People's Republic of Korea	987	6,030	16.4%
Democratic Republic of the Congo	58	126,155	0.0%
Djibouti	0	6	3.4%
Equatorial Guinea	125	2,448	5.1%
Eritrea	43	1,055	4.1%
Ethiopia	1,203	17,069	7.0%
Gambia	2	243	0.7%
Ghana	297	7,986	3.7%
Guinea	57	6,189	0.9%
Guinea-Bissau	1	1,980	0.1%
Guyana	0	18,415	0.0%
Haiti	32	347	9.2%
Kazakhstan	421	3,455	12.2%
Kenya	153	3,611	4.2%
Kyrgyzstan	229	1,315	17.4%
Lao People's Democratic Republic	1,771	16,596	10.7%
Lesotho	9	35	25.1%
Liberia	27	7,617	0.4%
Madagascar	312	12,430	2.5%
Malawi	76	2,242	3.4%
Mali	568	13,296	4.3%
Mauritania	44	313	13.9%
Mongolia	8	14,173	0.1%
Mozambique	74	36,744	0.2%
Myanmar	427	28,544	1.5%
Nepal	221	5,962	3.7%
Niger	123	1,080	11.3%
Nigeria	216	21,627	1.0%
Republic of Moldova	219	387	56.6%
Rwanda	150	276	54.3%
Senegal	32	8,068	0.4%
Sierra Leone	21	2,535	0.8%
Somalia	3	5,980	0.1%
Sudan	130	18,360	0.7%
Tajikistan	117	424	27.7%

Togo	61	1,209	5.0%
Turkmenistan	0	4,127	0.0%
Uganda	465	2,338	19.9%
Tanzania	553	45,745	1.2%
Uzbekistan	2,267	3,690	61.4%
Yemen	0	549	0.0%
Zambia	52	44,814	0.1%
Zimbabwe	108	17,445	0.6%
	13,931	724,885	1.9%
Source FAO.			

Appendix 4: Bottom Billion nations, as listed by Paul Collier (1,000 ha)