

Global Deforestation Analysis from 1990 to 2016

In this PDF, we report our findings about a dataset from the World Bank that includes forest area and total land area by country and year from 1990 to 2016, as well as a table of countries and the regions to which they belong.

We have used SQL to bring these tables together and to query them in an effort to find areas of concern as well as areas that present an opportunity to learn from successes.

1. GLOBAL SITUATION

According to the World Bank, the total forest area of the world was _____ 41282694.9 _____ sqkm _____ in 1990. As of 2016, the most recent year for which data was available, that number had fallen to _____ 39958245.9 _____ sqkm _____, a loss of _____ 1324449.0 _____, or _____ 3.31 _____ %.

The forest area lost over this time period is slightly more than the entire land area of _____ 1279999.9891 _____ listed for the year 2016 (which is _____ Peru _____).

2. REGIONAL OUTLOOK

In 2016, the percent of the total land area of the world designated as forest was _____ 31.37 _____. The region with the highest relative forestation was _____ Latin America & Caribbean _____, with _____ 46.16 _____ %, and the region with the lowest relative forestation was _____ Middle East & North Africa _____, with _____ 2.06 _____ % forestation.

In 1990, the percent of the total land area of the world designated as forest was _____ 32.42 _____. The region with the highest relative forestation was _____ Latin America & Caribbean _____, with _____ 51.02 _____ %, and the region with the lowest relative forestation was _____ Middle East & North Africa _____, with _____ 1.77 _____ % forestation.

Table 2.1: Percent Forest Area by Region, 1990 & 2016:

Region	1990 Forest Percentage	2016 Forest Percentage
Sub-Saharan Africa	30.67	28.78
Latin America & Caribbean	51.02	46.16
World	32.42	31.37

The only regions of the world that decreased in percent forest area from 1990 to 2016 were _____ Latin America & Caribbean _____ (dropped from _____ 51.02 _____ % to _____ 46.16 _____ %) and _____ Sub-Saharan Africa _____ (_____ 30.67 _____ % to _____ 28.78 _____ %). All other regions actually increased in forest area over this time period. However, the drop in forest area in the two aforementioned regions was so large, the percent forest area of the world decreased over this time period from _____ 32.42 _____ % to _____ 31.37 _____ %.

3. COUNTRY-LEVEL DETAIL

A. SUCCESS STORIES

There is one particularly bright spot in the data at the country level, _____ China _____. This country actually increased in forest area from 1990 to 2016 by _____ 527229.062sqkm _____. It would be interesting to study what has changed in this country over this time to drive this figure in the data higher. The country with the next largest increase in forest area from 1990 to 2016 was the _____ United States _____, but it only saw an increase of _____ 2.61% _____, much lower than the figure for _____ 33.55% _____.

_____ China _____ and _____ The United States _____ are of course very large countries in total land area, so when we look at the largest *percent* change in forest area from 1990 to 2016, we aren't surprised to find a much smaller country listed at the top. _____ Iceland _____ increased in forest area by _____ 213.66 _____ % from 1990 to 2016.

Based on the table you created, which regions of the world DECREASED in forest area from 1990 to 2016? Sub-Saharan Africa, Latin America & Caribbean

B. LARGEST CONCERNS

Which countries are seeing deforestation to the largest degree? We can answer this question in two ways. First, we can look at the absolute square kilometer decrease in forest area from 1990 to 2016. The following 3 countries had the largest decrease in forest area over the time period under consideration:

Table 3.1: Top 5 Amount Decrease in Forest Area by Country, 1990 & 2016:

Country	Region	Absolute Forest Area Change
Brazil	Latin America & Caribbean	541510
Indonesia	East Asia & Pacific	282193.9844
Myanmar	East Asia & Pacific	107234.0039
Nigeria	Sub-Saharan Africa	106506.00098
Tanzania	Sub-Saharan Africa	102320

The second way to consider which countries are of concern is to analyze the data by percent decrease.

Table 3.2: Top 5 Percent Decrease in Forest Area by Country, 1990 & 2016:

Country	Region	Pct Forest Area Change
Togo	Sub-Saharan Africa	75.44
Nigeria	East Asia & Pacific	61.79
Uganda	Sub-Saharan Africa	59.12
Mauritania	Sub-Saharan Africa	46.74
Honduras	Latin America & Caribbean	45.03

When we consider countries that decreased in forest area percentage the most between 1990 and 2016, we find that four of the top 5 countries on the list are in the region of

____ Sub-Saharan Africa _____. The countries are _____ Togo _____,
_____ Nigeria _____, _____ Uganda _____, and

_____Mauritania_____. The 5th country on the list is _____Honduras_____, which is in the _____Latin America & Caribbean_____ region.

From the above analysis, we see that _____Nigeria_____ is the only country that ranks in the top 5 both in terms of absolute square kilometer decrease in forest as well as percent decrease in forest area from 1990 to 2016. Therefore, this country has a significant opportunity ahead to stop the decline and hopefully spearhead remedial efforts.

C. QUARTILES

Table 3.3: Count of Countries Grouped by Forestation Percent Quartiles, 2016:

Quartile	Number of Countries
1	85
2	72
3	38
4	9

The largest number of countries in 2016 were found in the _____first_____ quartile.

There were _____9_____ countries in the top quartile in 2016. These are countries with a very high percentage of their land area designated as forest. The following is a list of countries and their respective forest land, denoted as a percentage.

Table 3.4: Top Quartile Countries, 2016:

Country	Region	Pct Designated as Forest
Suriname	Latin America & Caribbean	98.25
Micronesia, Fed. Sts.	East Asia & Pacific	91.85
Seychelles	Sub-Saharan Africa	88.41
Gabon	Sub-Saharan Africa	90.03

Palau	East Asia & Pacific	87.6
American Samoa	East Asia & Pacific	87.5
Guyana	Latin America & Caribbean	83.9
Lao PDR	East Asia & Pacific	82.1
Solomon Islands	East Asia & Pacific	77.86

5. RECOMMENDATIONS

- *From the data, unfortunately, deforestation in the world has escalated since 1990. Two regions that have a high rate of deforestation are Latin America & the Caribbean and Sub-Saharan Africa. Although, some countries substantially increased their forest land such as China, Iceland, Vietnam, and India. Specifically, we can observe a remarkable improvement in South Asia. Moreover, most of the countries in the world belong to the first and second quartile i.e. percent forest < 50%.*
- *The countries in Latin America & the Caribbean and Sub-Saharan Africa are the main concerns. Especially Brazil, which has lost around 540000 square kilometers of its own forest land since 1990. We should also be concerned about Indonesia and Myanmar, which have lost around 400000 square kilometers of their forest land in total since 1990.*