

Report for ForestQuery into Global Deforestation, 1990 to 2016

ForestQuery is on a mission to combat deforestation around the world and to raise awareness about this topic and its impact on the environment. The data analysis team at ForestQuery has obtained data 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.

The data analysis team has 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 41282694.9km² in 1990. As of 2016, the most recent year for which data was available, that number had fallen to 39958245.9km², a loss of 1324449km², or 3.2%.

The forest area lost over this time period is slightly more than the entire land area of Peru listed for the year 2016 (which is 1279999.98km²).

2. REGIONAL OUTLOOK

In 2016, the percent of the total land area of the world designated as forest was 31.38%. The region with the highest relative forestation was Latin America & Carribean, with 46.16%, and the region with the lowest relative forestation was Middle East & North Africa, with 2.07% 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 & Carribean, with 51.03%, and the region with the lowest relative forestation was Middle East & North Africa, with 1.78% forestation.

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

Region	1990 Forest Percentage	2016 Forest Percentage
Latin America and Caribbean	51.03%	46.16%
Europe and Central Asia	37.28%	38.04%
North America	35.65%	36.04%
World	32.42%	31.38%
Sub-Saharan Africa	30.67%	28.79%
East Asia & Pacific	25.78%	26.36%
South Asia	16.51%	17.51%
Middle East & North Africa	1.78%	2.07%

The only regions of the world that decreased in percent forest area from 1990 to 2016 were _____ Latin America and Caribbean _____ (dropped from _____ 51.03 _____ % to _____ 46.16 _____ %) and _____ Sub-Saharan Africa _____ (_____ 30.67 _____ % to _____ 28.79 _____ %). 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 _____ 31.38 _____ %.

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 _____ 527229.06km² _____. 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 ____79200km²_____, much lower than the figure for _____China_____.

_____China_____ and _____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.

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 and Carribean	541510km ²
Indonesia	East Asia and Pacific	282193.98km ²
Myanmar	East Asia and Pacific	107234km ²
Nigeria	Sub-Saharan Africa	106506km ²
Tanzania	Sub-Saharan Africa	102320km ²

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	75.45%
Nigeria	Sub-Saharan Africa	61.8%
Uganda	Sub-Saharan Africa	59.27%

Mauritania	Sub-Saharan Africa	46.75%
Honduras	Latin America and 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 and 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
0-25	85
25-50	72
50-75	38
75-100	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 and Caribbean	98.26
Micronesia, Fed. Sts.	East Asia and Pacific	91.86
Gabon	Sub-Saharan Africa	90.04
Seychelles	Sub-Saharan Africa	88.41
Palau	East Asia and Pacific	87.61
American Samoa	East Asia and Pacific	87.5
Guyana	Latin America and Caribbean	83.9
Lao PDR	East Asia and Pacific	82.11
Solomon Islands	East Asia and Pacific	77.86

5. RECOMMENDATIONS

Write out a set of recommendations as an analyst on the ForestQuery team.

- *What have you learned from the World Bank data?*
- *Which countries should we focus on over others?*

We can see that most of the regions have an increase in forest area, for example, north america, Middle East and North Africa, etc. However, the total forest area in the world has an overall decrease of around 3.2%. Countries like Brazil, Indonesia have a large decrease in forest area as seen in Figure 3.1. We should focus on these countries since they contributes global decrease, we can also focus more on China and United States, where they have a high percentage of increase in forest area.