

# Causes and Effects of Deforestation

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**ABSTRACT:** *In every part of the planet, deforestation and forest destruction produce ecological problems. Deforestation is taking place at a rapid rate, particularly in tropical regions where every year millions of acres are cleanly cut. Pollution and selective logging activities that degrade the integrity of local habitats also cause the remaining forests to suffer. Forest degradation also impacts the quality of soil and water in the surrounding region and can have a detrimental impact on biodiversity through a number of interconnections. Forest destruction is a mechanism in which some factor or a combination of factors permanently diminishes the biological resources of a forest area. "This does not involve a reduction of the forest area, but rather a quality decrease in its condition." The forest is still there, but with fewer trees, or fewer types of trees, plants or animals, or some of them affected by plagues. The forest is made less valuable by this destruction and can contribute to deforestation. Forest degradation is a form of land degradation that is a more general concern.*

**KEYWORDS:** *Forest Degradation Monitoring, Climate change, Carbon, Deforestation.*

## INTRODUCTION

For many factors, deforestation or clearing occurs, to get an overview we might include the need for cash, both in terms of profitability and in most cases providing for one's family, along with lack of or no forest rules, need for land space for housing, etc. among a long list of other uses. Farmers fell trees primarily blamed on agricultural or pastoral use for growing space for agriculture and/or as fodder land for grazing and surviving livestock. Deforestation can also be seen as the destruction of forests leading ecologically and economically to many imbalances. If pursued at the current rate, what make deforestation worrying are the immediate and long-term consequences it is bound to inflict. Some forecasts state that if deforestation continues at its current rate, the rainforests of the world will be totally destroyed [1]. The tragic fact is that industrial palm oil's negative impacts are much greater than most consumers know.

Mass deforestation, corporate land grabbing, violations of human rights, iconic endangerment of wildlife and unregulated emissions are just a few of the conflicts surrounding the development of industrial palm oil, an industry primarily fuelled by consumer demand. One of the most important elements of the world on which we live is trees. For the climate, livestock, and, of course, for us humans, trees are important. They are important to the Earth's atmosphere, as they serve as carbon dioxide filters. Forests are recognized as habitats for millions of animals and as shelters. The trees on our planet are being depleted at a very rapid pace, however. More than 50 percent of the forest cover has vanished due to human activities [2].

Reduced emissions from deforestation and degradation (REDD) in developing countries will benefit from climate change mitigation. The REDD system is responsible for distilling the right conditions for forest management with sufficient reimbursement for overlooked sales, which in turn are connected to avoided deforestation (how many hectares of forests are saved) [3]. Although any forecast of deforestation rates (i.e. business-as-usual scenarios) is complicated, and any decided objective is subject to political control, these two approaches have so far been prioritized. In other words, policies based on a baseline (or cap)-and-trade strategy, the relevance of which is uncertain because, if estimates of prevented deforestation are not accurate, the resulting financial incentives are subject to unfairness. Instead of considering total (predicted and observed) deforestation, we argue that the REDD system will benefit from connecting compensation to specific efforts being made by developed countries to slow deforestation rates [4]. This will create more successful incentives to establish acceptable strategies and initiatives and implement them. The methodology we present to assess these efforts (labeled Paid Good Efforts) is based on the rationale that systemic factors are partly responsible for overall deforestation, and partly for domestic policies and initiatives. In the

literature, this typology varies from others, such as proximate / underlying causes or economic/institutional influences. Using an econometric model, approach estimates efforts that are

- (i) Independent of structural factors (economic development, population, initial forest area, agricultural export prices),
- (ii) Estimated ex post at the end of the crediting period, and
- (iii) With respect to other nations. The model is extended to a panel of 48 countries (Asia, Latin America, Africa) to demonstrate the technique. The Compensated Effective Efforts approach concludes on the viability of calculating prevented deforestation. This strategy ensures justice in addition to being conservative from an environmental point of view by accounting for drastic improvements over the commitment era [5].

## DEFORESTATION CAUSE GLOBAL WARMING

More carbon dioxide is emitted to the atmosphere by deforestation in tropical rainforests than the cumulative total of cars and trucks on world roads. Cars and trucks account for about 14 percent of global carbon emissions, according to the World Carfree Network (WCN), although most experts attribute upwards of 15 percent to deforestation. The explanation why logging is so bad for the environment is that the carbon they store in the atmosphere is emitted when trees are felled, where it combines with greenhouse gases from other sources and thus contributes to global warming. The implication is that we can do as much to avoid deforestation as we do to improve fuel efficiency and decrease the use of vehicles. Great volumes of greenhouse gases are released by burning forests to clear land for agriculture [6]. As our understanding of the role forests play in stabilizing the global climate improves, it becomes clear that their depletion only exacerbates climate change. If we are serious about solving this, then it must be a priority to protect our remaining ancient forests. Current and past deforestation is a serious problem around the globe, particularly in tropical areas.

According to GRID-Arendal, the United Nations Environment Programmed Collaborating Centre, countries with major deforestation include Thailand, Brazil, the Congo and Indonesia, as well as parts of Eastern Europe [7]. According to a World Resources Institute study, deforestation affects the physical environment of the planet by causing soil erosion, low water quality, decreased food security and impaired flood control. Since forests are the source of jobs and food for many individuals, mass migration to cities can be caused by their destruction. Deforestation may cause altered weather patterns with the impact that tropical forests have on weather, especially rain. A big cause of the higher concentrations of greenhouse gases in the environment is deforestation. Deforestation causes elevated levels of carbon dioxide in particular: it is released when forests are burnt or decomposed, and levels increase when trees that used to take in this carbon dioxide are cut down. Greenhouse gases are stored in the atmosphere and serve as a heat shield that would otherwise be released into space; as a consequence, global temperatures are increasing and rainfall patterns, ice cover, and sea levels are shifting [8].

## DEFORESTATION AND CLIMATE CHANGE

One of the biggest contributors to climate change is deforestation. After fossil fuel combustion, it is the second largest anthropogenic source of carbon dioxide in the atmosphere. Via burning of forest biomass and decomposition of residual plant material and soil content, deforestation and forest depletion contribute to atmospheric greenhouse gas emissions. It used to account for more than 20% of carbon dioxide emissions, but it's somewhere around the 10% mark at present. By 2008, deforestation accounted for 12% of total CO<sub>2</sub>, or 15% if peat lands are included. These proportions are likely to have fallen since given the continued rise of fossil fuel use. Averaged over all land and ocean surfaces, temperatures warmed roughly 1.53 °F (0.85 °C) between 1880 and 2012, according to the Intergovernmental Panel on Climate Change. In the Northern Hemisphere, 1983 to 2012 were the warmest 30-year period of the last 1400 years[9].

*DISRUPTION OF THE WATER CYCLE*

Trees contribute greatly to the management of the water cycle. From their roots, they draw up water, which is then released into the atmosphere. For example, a large part of the water that circulates in the rainforest ecosystem stays within the plants. It results in the environment getting drier in that area when these trees are cut down. The tables of groundwater are affected and soon become exhausted. The trees help keep water from flowing away and help the soil retain the water that flows. When there are no trees, water just runs off, leaving no chance for the groundwater tables to absorb more water. Thus, ultimately leading to reduction in water resources [10].

*LOSS OF BIODIVERSITY*

On a scale which is much unparalleled, the unique biodiversity of different geographical areas is being lost. While tropical rainforests make up just 6 percent of the Earth's surface area, there are around 80-90 percent of the entire world's species. Around 50 to 100 species of animals are killed each day due to the widespread feeling of trees. The result of this is the massive extinction of animals and plants. It has a very heartbreaking impact on animals. Not only are they losing their habitat and protective shelter, they are being forced to extinction. Several magnificent beings, both animals and plants, have disappeared from the face of the earth.

**CONCLUSION & DISCUSSION**

Governments at the national level also have a much broader range of financial incentives at their disposal, including the establishment of market access for non-wood forest products, the promotion of agroforestry, the creation of payments for environmental services schemes, and the decentralization of management in the form of community-based forest management. Forests have enormous potential to serve as a tool to tackle climate change, protect people and livelihoods, and create a basis for the international and national-level system for preparing how best to deal with this ever-changing and ever-challenging challenge to sustainable economic and social growth that we all face. Together, they have sustainable forest management.

**REFERENCES**

- [1] U. Shanker, "Deforestation in india and climate change," vol. 7, no. 4, pp. 631–659, 2018.
- [2] E. Oladipo, "Global Impact of Environmental Sustainability on Deforestation," vol. 6, no. 9, pp. 103–115, 2015.
- [3] J. Wajim, "Impacts Of Deforestation On Socio-Economic Development And Environment In Nigeria," *Int. J. Soc. Sci. Humanit. Invent.*, vol. 7, no. 03, pp. 5852–5863, 2020, doi: 10.18535/ijsshi/v7i03.04.
- [4] C. Agarwal Green, G., Grove, J.P., Evans, T., and Schweik, C. *et al.*, "Drivers of Deforestation and Forest Degradation," *Environ. Sci. Policy*, 2013, doi: 10.1126/science.1239402.
- [5] D. Skole and C. Tucker, "Tropical deforestation and habitat fragmentation in the amazon: Satellite data from 1978 to 1988," *Science (80-. )*, 1993, doi: 10.1126/science.260.5116.1905.
- [6] G. Bala *et al.*, "Combined climate and carbon-cycle effects of large-scale deforestation," *Proc. Natl. Acad. Sci. U. S. A.*, 2007, doi: 10.1073/pnas.0608998104.
- [7] K. R. Kirby *et al.*, "The future of deforestation in the Brazilian Amazon," *Futures*, 2006, doi: 10.1016/j.futures.2005.07.011.
- [8] D. Lawrence and K. Vandecar, "Effects of tropical deforestation on climate and agriculture," *Nature Climate Change*. 2015, doi: 10.1038/nclimate2430.
- [9] K. S. Andam, P. J. Ferraro, A. Pfaff, G. A. Sanchez-Azofeifa, and J. A. Robalino, "Measuring the effectiveness of protected area networks in reducing deforestation," *Proc. Natl. Acad. Sci. U. S. A.*, 2008, doi: 10.1073/pnas.0800437105.
- [10] P. G. Curtis, C. M. Slay, N. L. Harris, A. Tyukavina, and M. C. Hansen, "Classifying drivers of global forest loss," *Science (80-. )*, 2018, doi: 10.1126/science.aau3445.