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The Impact of Deforestation and The Question of Logging on The Environment: An Analysis

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Abstract: The environmental impacts of deforestation have emerged as a major concern of world community. These impacts may be observed in terms of climatic change, degradation of soil, irregularity in carbon cycle and increase in global warming. This paper analysed the impact of deforestation and the question of logging on the environment. Deforestation affects economic activity and threatens the livelihood and cultural integrity of forest-dependent people. However, in this paper, the researcher adopts the expository method in carrying out the work. The paper argues that cutting down trees for business has done more harm than good without proper reforestation. Deforestation is one of the major problems that can lead to global warming and the extinction of medicinal trees. Therefore, it is advised to review the policies made long ago to ban logging.
Keywords: Deforestation, Environment, The question of logging, Impact

INTRODUCTION

There has been an age-old, inseparable relationship between humans and forests since pre-civilization. Before gaining knowledge of agriculture, men were solely dependent on forests for their livelihood. This relationship continues to exist in these days of Science and technology. Forests provide humans with a wide variety of highly valuable ecological, economic, and social services in regard to the conservation of biological diversity, carbon storage, soil and water conservation, the provision of employment and enhanced livelihoods, the enhancement of agricultural production systems, and the improvement of urban and peri-urban living conditions (Asamoah et al., 2020).

Two types of loss may be observed in forests: permanent loss and temporary loss. In the former, natural regeneration may be expected, while in the latter, it is not feasible. The long-term or permanent conversion of land from forest to non-forest uses may be defined as deforestation. There are many factors behind deforestation; however, the United Nations Framework Convention on Climate Change (UNFCCC) secretariat summarises that the overarching direct cause of deforestation is agriculture. Sometimes we observe that some particular trees have been reshaped, which we knew before when we went to that place where we used to see them; it happens that that particular tree is no longer there (Brack, 2019). Again, we normally observe that certain areas of the land are used as farmland. Which before has been left like that without torching that forest or that land either to reshape or do anything that will hamper the life of some of the trees there. What does it imply? We are trying to draw attention to the definition of the concept of deforestation.

Deforestation is the cutting down of trees in the reserve. Economic trees, when cut, are sent to industries for making furniture and sometimes to supply fuel (do Prado Capanema, 2020). It is the removal of a forest or stand of trees where the land is thereafter converted to a non-forest use. The term deforestation can be misused when applied to describe a tree harvesting method in which all trees in an area are removed (Clear Cutting) [3]. However, in temperate climates, this method is in conformance with sustainable forestry practises and is currently described as regeneration harvest. Deforestation occurs for many reasons: trees are cut down to be used or sold as fuel (sometimes in the form of charcoal) or timber, while cleared land is used as pasture for livestock, plantations of commodities, and settlement. It has adverse impacts on the biosequestration of atmospheric carbon dioxide.

In addition, Gursharn Singh and Beant Singh (Singh and Singh, 2017) point out that the deforestation of trees not only lessens the amount of carbon stored but also releases carbon dioxide into the air. This is because when trees die, they release the stored carbon. Deforestation has also been used in war to deprive the enemy of cover for its forces and vital resources (Essien and Njok, 2019). Modern

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examples of this were the use of Agent Orange by the British Military in Malaya during the Malayan Emergency and the United States Military in Vietnam during the Vietnam War (Olson and Cihacek, 2022). Disregard for ascribed value, lax forest management, and deficient environmental laws are some of the factors that allow deforestation to occur on a large scale (Anthony and Essien, 2018).

In many countries, deforestation, both naturally occurring and human-induced, is an ongoing issue (Essien and Anthony, 2017). Deforestation causes extinction changes to climate conditions, desertification, and displacement of populations as observed by current conditions, and in the past, through the fossil record, more than half of all plant and land animal species in the world lived in tropical forests (Oljirra, 2019). Further, subsistence farming is responsible for 48% of deforestation. Commercial agriculture is responsible for 32% of deforestation (Rezapour and Alipour, 2017). Logging is responsible for 14% of deforestation, and fuel wood removals make up 5% of deforestation (Huang et al., 2021).

ANALYSIS OF THE IMPACT OF DEFORESTATION ON THE ENVIRONMENT

Some soils in the forest areas, mainly the tropical soils, are actually very thin and poor in nutrients. During the course of forest clearing for farming, the trees and vegetation are burned in order to create a fertilising layer of ash. After this slash-and-burn deforestation, the soil loses its nutrient reservoir, flooding and erosion rates are accelerated, and the crop-supporting capacity of the soils is diminished in just a few years (Osborne, 1989). When the ground in such an area is turned into cattle pasture, this may become compacted as well, and consequently, forest recovery is slowed down or prevented. This process paves the way for desertification (Lasanta et al., 2019).

In the process of transpiration, trees draw groundwater up through their roots, and then it is released into the atmosphere. A considerable quantity, about 30%, of rain is the result of the recycling of water performed by the rainforests (Cuartas et al., 2019). During the continuous self-watering cycle, water first evaporates from the soil and vegetation, then is condensed into clouds, and finally falls again on the earth as rain. Over half of all the water circulating through the region's ecosystem remains within the plants (Murdiyarso and Sheil, 2009). Deforestation, inevitably, would affect this process of the water cycle, and ultimately the rainfall would be affected. In addition, the evaporation cools the Earth’s surface, and as such, the change in vegetation cover would be associated with a change in the temperature on the earth’s surface. Various experiments on environmental models on computers performed by replacing tropical forests with a landscape of pasture and crops surmise that in the event of such a situation, the future climate would be a drier and hotter one in the tropics (Seymour and Busch, 2016).

Human health depends on two major determinants: the quality of the environment and the nature of development (Anthony et al., 2019). Deforestation has both direct and indirect effects on the environment, and these effects have the potential to adversely impact health status. Infectious diseases are as much a part of any ecosystem as predator-prey or plant-herbivore relationships. Usually, host and microparasite (the disease-causing viruses, bacteria, and protozoans) coexist peacefully, as highly pathogenic genotypes can attack only susceptible hosts lacking acquired or native immunity (Ray, 2023). As such, disease emergence may be viewed as a transient phenomenon in a human population and may be attributed to rapid social and environmental change or instability. Forest area change has the potential to facilitate such a phenomenon.

Although infectious disease transitions have been occurring at the regional level since olden days, their upsurges in current days are quite notable from the viewpoints of the speed, scale, and global dimension of the disease's transition. The occurrence of the disease in the era of modern biomedicine and public health programmes depicts its severity. A good number of studies on emerging infectious diseases (EID) have identified changes in land cover and land use, including forest cover change, along with urbanisation and agricultural intensification, as major factors contributing to the upsurge in infectious diseases. Furthermore, recent studies have revealed links between deforestation and forest fragmentation and the emergence of new infectious diseases such as HIV, the Ebola virus, the COVID-19 virus, etc., which often originate in animals (Priyadarsini et al., 2020).

Both deforestation and emerging infectious diseases are simultaneously occurring in tropical regions with extended global impacts. Out of approximately 250 EIDs, 15 percent of pathogens show a direct association with forests (Morris et al., 2016). In the context that modern science has not been able to conquer infectious diseases till this day, it is enviable that the historical orientation of forest medicine towards understanding disease natural history and ecology be continued (Huesemann and Huesemann,

2011). A potentially serious consequence of deforestation is an increase in zoonotic and vector-borne diseases such as yellow fever, dengue, malaria, filariasis, and arboviral infections. When the vectors are forest dwellers, it is possible that the clearing of forests can decrease the rate of vector transmission due to the resulting loss of their habitats. However, this is only an exception, and in the majority of cases, clearing forest land results in an increase in vector diseases. The conversion of forests into agricultural land causes water logging; dragging logs through the forests can cause water-filled furrows.

These logging operations can provide ideal breeding places for vectors. Removal of growth along stream edges, slowing of water runoff by debris, and impoundment for water supplies all increase the vector breeding potential (Walsh et al. 1993). The destruction of animal habitats and the resulting decline in the number of wild animals force mosquitoes to feed on domestic animals and humans. The frequency of human feeding has an apparent influence on malarial transmission. An increase in mosquito breeding habitat due to forest clearing and the associated increase in human settlement would certainly result in an increase in the prevalence of arbovirus disease.

Many countries that have agriculture as their backbone in their economic development will affirm strongly that deforestation will go a long way towards providing land for cultivation (Agboola and Bekun, 2019). Trees have been cut down to obtain land for cultivation, both for subsistence and commercial farming. On the other hand, deforestation causes carbon sinks, which are huge stores of carbon, e.g., Swamps and forests. Although Njora and Yilmaz, (2022) observed that deforestation is not only caused by human intervention but can also be caused by other natural causes, For instance, when natural fires occur, large swathes of land covered by forests can be decimated within a short period of time (Blumstein, 2010). Forests are crucial for conversation and human survival. In business-oriented countries, many industries require a lot of land. Industrialization is the fulcrum of every country; it is the gale of large tracts of forest (Makwela, 2022). The majority of animals need forests as their habitats. These forests not only provide a place for the animals to roam day and night but also provide their food and act as a source of protection from predators through camouflage. Destruction of the animals' habitats literally kills the animals (Seymour and Busch, 2016).

While the above needs are important and have to be satisfied, cutting down trees is not the most probable solution to these problems. Why? This is because most people who cut down trees do not plant others in their place. Also, if all the above needs are to be met by cutting down trees, even planting two for every tree cut will not prevent desertification. This is because trees take so long to grow and mature, especially hardwood trees. Going further, Gachelin et al. (2017) observed that some trees are used as herbs. Trees such as the Cinchona have been used as treatments against Malaria since time immemorial. The destruction of these forests leads to the destruction of medicinal plants that could be used as treatments for various ailments.

Globally, only change is constant; this implies that the world's population increases every day. Consequently, humans need land to build houses and live, so deforestation becomes very much required (Morris et al., 2016). On the other hand, we need to know that cutting down trees makes soil prone to erosion by agents such as wind and water. The roots of trees hold the particles of soil together, thus preventing the fertile top soil from being carried away. Soil erosion leads to a loss of productivity due to the loss of mineral nutrients and soil microorganisms (Tripathi et al., 2020).

The environment is significantly impacted by logging and deforestation. Deforestation is the practise of removing trees and other vegetation to make room for land uses such as infrastructure, agriculture, and urban development. Harvesting trees for lumber and other items is part of the logging process (Asamoah et al., 2020). The loss of wildlife habitat is the most visible effect of deforestation and logging. Several species depend on trees for food and refuge; when they are cut down, these species must shift or become extinct. As the extinction of one species may disrupt the supply of food and resources for other species, this may have an impact on the entire ecosystem. Logging and deforestation are further factors in climate change. Carbon dioxide from the atmosphere is absorbed by trees (Gatti et al., 2021).

Finally, logging and deforestation may result in less biodiversity (Giam, 2017). The diversity of species in the area reduces as trees are cut down because certain species might not be able to live in the new environment. The ecosystem's health may be impacted in the long run by this. Overall, logging and deforestation have a serious negative effect on the environment. These may result in a reduction in biodiversity, the loss of wildlife habitat, a contribution to climate change, soil erosion, and water contamination. To maintain the ecosystem, it is crucial to take action to lessen logging and deforestation.

A FORESTATION ARGUMENT BETWEEN PROFIT LOGGING AND FOREST LEAVING

Experts do not agree on whether industrial logging is an important contributor to global deforestation. Some argue that poor people are more likely to clear forests because they have no alternatives; others argue that the poor lack the ability to pay for the materials and labour needed to clear forests. One study found that population increases due to high fertility rates were the primary driver of tropical deforestation in only 8% of cases. Other causes of contemporary deforestation may include corruption of government institutions, the inequitable distribution of wealth and power, population growth, overpopulation, and urbanisation. For instance, according to Iyyer (2009).

> The role of population dynamics in a local setting may vary from decisive to negligible, and deforestation can result from "a combination of population pressure and stagnating economic, social, and technological conditions. The degradation of forest ecosystems has also been traced to economic incentives that make forest conversion appear more profitable than forest concentrations on many important forest functions, which have no markets and hence no economic value that is readily apparent to the forest owners or the communities that rely on forests for their well-being.

From the perspective of the developing world, the benefits of forests as carbon sinks or biodiversity reserves go primarily to richer developing nations, and there is insufficient compensation for these services. Developing countries feel that some countries in the developed world, such as the United States of America, cut down their forests centuries ago and benefited greatly from this deforestation, and that it is hypocritical to deny developing countries the same opportunities that the poor should not have to hear the cost of preservation when the rich crated the problem.

Thorough evaluation of the economic and environmental Wood harvesting for commercial purposes has been a long-standing practise. It is a means of earning money and giving individuals access to resources. On the other hand, preserving the forest intact is a strategy to safeguard the ecosystem and the local fauna. The debate over whether to clear forests for commercial purposes or to leave them in their natural state is challenging. Wood harvesting for commercial purposes can generate income and resources for people, but it also has the potential to harm the environment and destroy habitats (Umotong, 2021).

The specific situation should ultimately determine whether to log the woods for commercial gain or leave them as a forest. Leaving the region as a forest may be the best choice if it is home to endangered species or is crucial to the ecology. The best solution may be to log the woods for commercial gain if the area does not contain any threatened or endangered species and the resources can be put to good use. In the end, the choice should be made after carefully weighing the economic and environmental implications of both possibilities.

EVALUATION/CONCLUSION

Most everything that has merit also has demerits. It is worthy of note that not only poor people cut down trees for their personal interests. Both the rich and poor cut down trees for many purposes. We need to look at deforestation from various angles: not limiting it to only development, using the trees to build, and so on. This is because it will reach certain stages where some of the particular trees will not be found again. And that particular tree may be relevant to our lives, e.g., for herbal healing, etc. Again, some insects and plants are enough for our warfare, but in nutrient aspects and other ways. It will be a big challenge in that situation where it has gone in the name of development.

In a nutshell, in my view, deforestation serves a lot, but before an individual is enabled to do anything like this, he or she must follow a good procedure so as to maximise the merit value rather than the demerit. Because in a situation where the demerit of something is greater than the merit, it means that it is unbeneficial.

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