

# **A STUDY ON DEFORESTATION AND ITS CONSEQUENCES**

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## **ABSTRACT**

One of the primary contributors to the deterioration of the environment is deforestation, which is exacerbated by activities carried out by individuals and businesses such as small farmers, ranchers, loggers, and plantation firms. There is a widespread agreement that the most significant contributor to deforestation is the growth of cultivated land and pastureland. The process of removing all tree cover over a prolonged period of time is referred to as "deforestation." The disappearance of forest cover has a direct impact on the climate and is a major factor in the decline of biodiversity. The siltation, floods, soil deterioration, and diminished wood supply all have a negative impact on the economic activities. This, in turn, puts people's ability to make a living in jeopardy. Deforestation occurs when trees in a forest are chopped down for a variety of reasons, including building, development, the harvesting of timber, and so on. Deforestation has a variety of unfavourable consequences on both the ecosystem and the species in it.

*Keywords: Deforestation, Birds, Plants*

## **INTRODUCTION**

Erosion is one of the most direct and immediate repercussions that results from deforestation. The process by which dirt is moved to a new area is known as erosion. When the roots of the trees are removed from the soil, the soil loses its ability to keep its position and becomes more susceptible to being moved by the wind, animals, or rain. Because of the movement of the ground, the forestry that is left in a formerly wooded area may become disturbed as a result of this movement. The upheaval that these trees are experiencing might have an effect on their root systems, which would then prevent them from properly receiving the essential nutrients. Even more tragically, the trees could get so restless that they topple over and die as a result.

When forests are cut down, it messes up the environments that many different kinds of species call home. As a result, deforestation may also result in a loss of biodiversity since it forces species to relocate to other habitats in order to maintain their populations.

In point of fact, we shouldn't be too concerned about the extinction of a few species of plants and animals since humans stand to lose far more. When we cut down tropical forests, not only do we put our own quality of life at risk, but we also jeopardise the consistency of the temperature and the local weather, we endanger the survival of other species, and we weaken the important benefits that are supplied by biological variety.

Although environmental degradation has not yet reached a point of crisis in the majority of regions, where entire ecological systems are failing, it is essential to investigate some of the effects of existing environmental impoverishment and to make some projections regarding some of the potential consequences of the loss of

forest cover. The ongoing destruction of natural ecosystems may leave human activities in the future more susceptible to unforeseen ecological effects.

The loss of ecological services given by tropical rainforests and ecosystems that are closely associated to them is one of the most direct effects of deforestation, which takes place at the local level. These kinds of habitats provide humans with useful benefits, such as the prevention of erosion and flooding, the control of flooding, the filtration of water, the protection of fisheries, and pollination. These are functions that are especially significant for the world's poorest people, who are dependent on natural resources for their day-to-day survival. In addition, the availability of renewable resources such as lumber, medicinal plants, nuts and fruit, and wildlife is diminished when forests are cut down.

Deforestation in tropical rainforests may have far-reaching effects, including those on the climate and biodiversity of the whole planet, if it is allowed to continue for an extended period of time. These changes typically happen over a longer time scale, making it more difficult to notice and predict them based on local impacts. Additionally, it may be difficult to evaluate how much these changes have occurred.

## **CAUSES FOR DEFORESTATION**

### **1. Agriculture**

The clearing of land for agricultural use in order to meet the ever-increasing demands of humans. It is estimated that 300 million people live as shifting cultivators. These individuals engage in slash-and-burn agriculture and are responsible for clearing more than 5 lakh acres of forests each year in order to make room for shifting cultivation. This technique is prevalent in the north-eastern region of India, as well as parts of Andhra Pradesh, Bihar, and Madhya Pradesh. It is responsible for approximately half of the yearly area of forest that is cleared.

### **2. Commercial logging**

This industry (which feeds the global market with woods like as meranti, teak, mahogany, and ebony) is responsible for the destruction of trees and also opens up forest land for agricultural use. The felling of trees for use as fuel wood and construction material, the extensive trimming of foliage for use as forage, and the extensive grazing of saplings by domestic animals such as goats are all factors that contribute to deforestation.

### **3. Mining**

This results in negative environmental effects such as the creation of sinkholes and erosion, as well as the loss of biodiversity and the pollution of soil, groundwater, and surface water with chemicals that are used in the mining process. In certain instances, extra logging of forests is carried out in the neighbourhood of mines in order to expand the amount of space that is available for the storage of the manufactured trash and dirt.

If contamination brought on by the leaking of chemicals is not effectively regulated, it has the potential to also impact the health of the surrounding people. Coal fires are one of the most extreme forms of pollution that may be caused by mining operations. Coal flames can linger for years or even decades, and they can cause enormous amounts of harm to the environment.

#### **4. Increase in population**

In addition, the requirements continue to grow and consume more resources from the woods. In order to satisfy the needs of a population that is quickly expanding, the surrounding woods are being permanently cleared to make way for agricultural fields and towns.

#### **5. Urbanization and industrialization**

As a result of the need for land for the expansion of industrialization and urbanisation, significant portions of forested land are cleared in order to facilitate the expansion of these two processes. This has a negative impact on the ecosystem as well as the biological balance of the forest.

#### **6. Construction of dam reservoirs**

The construction of major dams necessitates the destruction of massive areas of forested land, which upsets the delicate ecological equilibrium of the surrounding area. In places like these, natural disasters like floods, droughts, and landslides are more likely to occur. By destroying these forests, we are going to lose these species even before we get the chance to learn about them. Forests are the repository of important treasures that nature has bestowed upon us in the form of biodiversity. There is a possibility that some species have significant commercial or therapeutic worth. These treasure troves of species, which have developed over the course of millions of years, are wiped out in a single swoop as a result of deforestation.

#### **7. Forest fires**

They may be natural or manmade, and cause huge forest loss.

#### **8. Overgrazing**

Overgrazing happens when plants are subjected to heavy grazing for lengthy periods of time or when there are insufficient periods of time set aside for the plants to recuperate. Either overpopulation of native or non-native wild animals, or cattle in agricultural applications that are poorly managed, may lead to this condition. It is also possible for it to be caused by both.

The loss of the land's utility, production, and biodiversity as a result of overgrazing is one of the factors that contributes to desertification and erosion. It is believed that overgrazing contributes to the proliferation of weeds and non-native plant species that are considered invasive.

### **DEFORESTATION AND ITS IMPACT ON ENVIRONMENT**

When a significant number of trees are removed from an area of land for a variety of reasons, this is known as "clearing." Because of our chopping down trees, setting fire to, or otherwise harming the woods, there has been a tremendously negative influence on the ecosystem, and there will be dreadful consequences for future generations as a result of our actions. In this essay, I am going to study the factors that lead to deforestation as well as the effects that it has on the surrounding ecosystem. I will also investigate any steps that have been made to reduce deforestation in order to stop the loss of rainforests all around the world and guarantee that there will be resources for future generations. Despite the fact that it has a negative impact on the surrounding ecosystem, there are several factors that contribute to deforestation. As a result of urbanisation in some

regions, people require lumber and wood from the trees in order to manufacture paper, homes, and other things. In addition to its usage in industry, it also has a commercial use. Aesthetic, recreational, economic, historical, cultural, and religious significance to humans have all been attributed to the importance of trees. Both domestically and internationally, the economic significance of timber and other forest products cannot be overstated. In addition, those who work in the wood harvesting industry benefit economically from deforestation. As a result of deforestation, there are many additional products of the forest that may be utilised besides wood, such as by herbalists, rubber tappers, hunters, and collectors of fungus, nuts, bamboo, and berries. Some examples of these items include:

Other kinds of non-wood forest goods include medicinal substances, dyes, and textiles, and they come from the forest. There are a great number of people that make their living off of forests and other types of woodlands. Wood is a key source of energy for one third of the world's population, who use it for heating and cooking. The demand for financial resources is exacerbated in less developed tropical nations by the presence of global economic competition. At the national level, governments sell timber concessions in order to earn funds for projects, pay off foreign debt, or expand industry. These goals can be accomplished through the sale of these concessions. In 1995, Brazil owed other countries a total of 159 billion dollars, and it was required to make payments on this debt annually. The objective of the logging firms is to clear the forest in order to maximise their profits from the selling of precious hardwoods (like mahogany) and pulp. Peasant farmers are frequently the ones responsible for deforestation since they are driven by the most fundamental need of humans, which is the desire to eat. The majority of tropical nations suffer from severe levels of poverty, and agriculture provides a significant portion of the people with their primary means of subsistence. The farmers in these nations do not have enough money to buy the things they need, therefore they are forced to grow crops not just for themselves but also to sell. The expansion of roadways is one of the primary factors contributing to deforestation in the Amazon. Recent growth in certain areas of the Amazon has necessitated the construction of new roads and highways in the region. Over the course of the past two decades, the construction of new roadways has made it much simpler to reach formerly inaccessible forest regions. This expansion, in combination with government incentives for development of the region, made it possible for activities that cause rapid deforestation, such as land speculation, cattle ranching, timber extraction, clearing for cash crops like rubber, cocoa, and sugar cane, and exploration for oil and minerals. These activities include:

Unsuccessful farmers have a tendency to be unstable people who sell out and move on to other frontiers where they will deforest again. This is something that is quite visible in satellite photographs of the Amazon rainforest. The question now is not how to stop people from migrating to the Amazon from other parts of the country; rather, it is how to make sure that the farmers who are already living in the Amazon stay on the land that has been cleared of trees. In turn, this would minimise migration, which would in turn prevent future deforestation inland. The impoverished farmers who live in the Amazon region are wholly reliant on the resources that may be harvested from the jungle. Land is essential for agriculture; trees are cut down, burned, and used both as fuel and as feed for their livestock. The Amazonians do not have a significant amount of expertise with agriculture, and they do not have a significant amount of technology. They practise simple slash-and-burn agriculture under the mistaken idea that regenerating the land via setting fire to the surrounding vegetation (which holds true for some forests). It is true that fire may assist in the dispersal of seeds and that heat can assist in the release of nutrients in the soil in some pine forests; however, this does not occur in rain forests. Since 1996, there has been a rise of 28%, resulting in an expansion of 20,469 new forests in the Amazon. The land eventually becomes completely worthless due to its extreme aridity, and the

farmers move on to clear another section of woodland. In the past several years, there has been a 28% growth in the number of international businesses searching for rare and exotic woods. This is one of the other causes of deforestation, although it is not the result of farmers.

A large number of Asian firms invest in logging operations in the Amazon region that already have permits and then start cutting down large tracts of forest. Deforestation may have a variety of negative effects on the environment. Because of things like forest fires, chopping down trees, and other similar activities, tens of thousands, if not hundreds of thousands, of different species are wiped off every year. Deforestation is another factor that contributes to the acceleration of global warming. When trees decay, they release the carbon dioxide (CO<sub>2</sub>) that they received while growing in order to produce carbs, lipids, and proteins. When a significant number of trees are cut down in a given area, it can lead to soil erosion since there is no longer any vegetation there to cushion the blow of intense rainfall on the ground and there are no roots to keep the soil in place. It leads to the formation of deserts (arable land is transformed to desert). A further risk associated with deforestation is the possibility of landslides and avalanches. If trees are chopped down, this threatens the supply of freshwater, which is one of the fundamental requirements for life. If forests are cleared, it will have an impact on the climate, and it will also reduce the amount of oxygen in the air. When there are fewer trees, there are also fewer employment available for those who work in the forest, and there are less potential customers for ecotourism.

After the trees have been cut down, the topsoil is more susceptible to damage from intense precipitation and sunshine. As a result, it takes significantly longer for the forest to regrow, and the area becomes unfit for agricultural use. The disappearance of forests poses a risk to the traditional way of life as well as the very existence of some indigenous peoples. These communities include the Waorani, who live in the tropical rainforest of the Amazon, the Sami, who live in the taiga of Lapland, and the Kiyuquot, who live in the temperate rainforest of Vancouver Island. Before clear cutting begins in a forest region, the stakeholders in that area are not always consulted, and this happens rather frequently. This has occasionally resulted in both non-violent and violent conflict, and it has fueled intense rivalries between people of the region, those working in the timber industry, and environmentalists. Because of the loss of forest cover, the weather becomes more volatile. Both the frequency and severity of droughts and floods are expected to rise. Large quantities of carbon are stored in forests; this carbon is released when trees in a forest are felled or burned. Between the years 1990 and 2025, deforestation and the burning of biomass will be responsible for 15 percent of the greenhouse impact.

Some species may become more vulnerable to the effects of insects, pollution, illness, and fire as a result of the stress caused by these kinds of environmental changes. The rising sea levels that are a consequence of global warming have the potential to put at risk the sites of a great number of large cities, a significant amount of land that is suitable for agricultural use, the quality of freshwater supplies, and the very existence of certain countries. Erosion and the risk of landslides both rise when forested land is cut down and used for other purposes. The deforested land's topsoil can be used to replenish water supplies in reservoirs built by dams. Because of this, a dam's ability to generate hydroelectricity and supply irrigation would be greatly diminished, as well as its future capability to do so. The administration of fisheries is greatly aided by the presence of forests. The practise of logging has affected spawning sites in both a direct and indirect manner, as well as restricted river channels, increased water temperatures, and produced severe fluctuations in water levels in streams. The depletion of fuel wood results in the depletion of nutrients in the soil, which ultimately leads to the reduction of forest cover. This results in a rise in the amount of rainfall as well as an increased

danger of floods and erosion of the soil. The cutting down of trees results in an increase in the concentration of CO<sub>2</sub> and other greenhouse gases, which, in turn, has the effect of making the temperature rise.

As more trees are chopped down, the watershed protection provided by the forest is diminished, which results in excessive floods and damage estimated to be in the billions of dollars. Deforestation also results in a drier environment, which raises the probability that forest fires may break out. Deforestation has a profound impact on the environment, including problems such as pollution caused by an excess of carbon dioxide in the atmosphere, soil erosion, stream erosion, loss of fisheries and water supplies, as well as the loss of recreational opportunities. The soil is protected from the wind and rain by the trees. After trees are felled, the nutrients in the soil are lost because the rain washes them away, and the soil itself is blown away by the wind. Even if the trees are transplanted, it is possible that they will not be able to thrive in the soil since it is so depleted. In tropical rainforests, almost half of the precipitation is lost as water through evaporation from the soil and foliage, as well as through transpiration by the plants themselves. The remaining portion flows into nearby streams and rivers before finally making its way into the ocean. When trees are felled, the process of recycling water becomes less effective, which in turn leads to a decrease in the amount of precipitation that falls in the area.

## **CONSEQUENCES OF DEFORESTATION**

The establishment of communities has been made feasible, in certain cases, as a result of deforestation, although this obviously depends on the requirements of the particular social group in question. Clearing of forest to create space for housing developments, office buildings, and manufacturing facilities. The ability of governments to construct roads allows for the facilitation of trade and transportation, which in turn provides inhabitants with more convenience.

In certain contexts, the term "deforestation" refers to the process of converting forested territory into agriculturally productive land. As a consequence, this leads to an improvement in the quality as well as the quantity of the production of food and materials, effectively doing away with times of deficiency. In terms of the economy, deforestation has been a significant factor in allowing a great number of communities the chance to make constructive changes in their lives. Sadly, the negative repercussions of deforestation much exceed the favourable effects it may have had on the environment.

### **1. Food problems:**

The land that used to be wooded is no longer suitable for protection. The majority of the land that has been cleared of trees is really unfit for long-term agricultural uses like ranching and farming since the trees have been removed. The condition of the land quickly deteriorates when it is stripped of its forest cover, and it loses both its fertility and its capacity to be farmed.

It is not possible to grow annual crops in the soil of many of the deforested regions because the soil lacks the necessary nutrients. Because a significant portion of the grassy regions are not as productive in comparison to the more arable soils, these areas are not suitable for the long-term grazing of cattle.

### **2. Exposing soil to heat and rain:**

In the clearings of tropical rain forests, the topsoil is swiftly degraded as a result of high levels of both precipitation and sunshine. If this occurs, it will take the forest considerably more time to regenerate, and the area will not be fit for agricultural use for a considerable amount of time after that.

### **3. Flooding:**

Watersheds may become unable to maintain and manage the flow of water from rivers to streams as a consequence of deforestation, which may have this effect. Trees are extremely efficient in absorbing large amounts of water, which helps to keep the volume of water in watersheds at a level that can be effectively managed. In addition to this, the forest acts as a cover that prevents erosion. When they are no longer there, an excessive amount of water can lead to downstream floods, the likes of which have been responsible for numerous disastrous events in various places of the world.

The fertile top soil is being eroded and washed down into the lower regions. As a result of the sedimentation brought on by the flooding, numerous coastal fisheries and coral reefs are being negatively impacted. As a consequence, this has a detrimental impact on the financial sustainability of a great deal of businesses and causes deaths among populations of wildlife.

### **4. Loss of biodiversity:**

This is almost certainly the most significant repercussion of deforestation. Simply said, it implies the destruction and extinction of a great number of plant and animal species, the majority of which do not yet have a home and the advantages of which will not be found until much later.

### **5. Displacement of indigenous communities:**

The logging industry is destroying many native forests, which puts their way of life and their existence in jeopardy. When there are fewer trees, labourers in the forest have a more secure future.

### **6. Climate change:**

The climatic conditions may grow more severe as a direct result of deforestation. It does so by adding more CO<sub>2</sub> to the atmosphere, which in turn contributes to the warming of the planet.

### **7. Economic loss:**

The occurrence of floods and droughts, as well as their severity, have an effect on the economy. It also results in the destruction of potential markets for ecotourism. It is common for the value of a forest to be greater when it is allowed to remain standing as opposed to when it is harvested for its timber.

### **8. Health issues:**

Some species may become more vulnerable to the effects of illnesses, pollutants, and insects as a result of the stress caused by changes in their habitat.

## **CONCLUSION**

The destruction of forests often has unfavourable effects on the natural world. The destruction of habitat for millions of different species is the most severe consequence. Eighty percent of the animals and plants that live on land on Earth call forests their home, and many of these species are unable to survive when their habitats are destroyed by deforestation. Deforestation is another major contributor to climate change. Therefore, the topic of deforestation is an essential one that has to be explored. It will have a negative impact on the lives of all living things. As a result of the rapid decrease in the world's forest cover, one of the most pressing issues facing modern society is deforestation. Cutting down trees is necessary not only for the production of paper goods but also for farming cattle and other purposes. Trees and forests are being cleared to make way for agricultural land in order to meet the demands of an ever-increasing global population. This has evolved into a hazard to the entire planet, and it has been seen that the rates of deforestation are accelerating at an alarmingly quick rate. Because of this, the world has been warming up, which has caused temperatures to rise. If the essential measures to stop deforestation are not done, this cycle will repeat itself for the years to come after they have already passed. Fewer trees are growing as a direct result of deforestation. It has also contributed significantly to the eradication of important ecosystems around the earth.

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