

Deforestation: Causes And Consequences

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Abstract:

Forests are one of the most valuable eco-systems in the world, containing over 60% of the world's biodiversity. This biodiversity has multiple social and economic values, apart from its intrinsic value. Forests provide sustainable environment. Deforestation leads to disappearance of sustainable development. Deforestation takes place due to a number of reasons like, logging, growth of population, urbanization, grazing, logging, acid rain, construction of dams and reservoirs, habitat fragmentation, slash and burn method of farming, wild fire, global warming, hydro-electric projects, quarrying and mining etc. The consequences of deforestation are mainly negative. Many people lose their livelihood. Deforestation leads to loss of cultural diversity, loss of biodiversity and loss of carbon storage capacity. However, deforestation can be restricted and sustainable forestry can be achieved through the alternatives or feasible solutions. This paper focuses on not only the causes and consequences of Deforestation but also alternatives for Sustainable development.

Key words: *Deforestation, Unsustainable development, consequences, alternatives*

Introduction

Forests are one of the most valuable eco-systems in the world, containing over 60% of the world's biodiversity. This biodiversity has multiple social and economic values, apart from its intrinsic value. The continuous maintenance of quality environment for many years is called sustainable environment. Forests provide such an environment. Sustainable development involves the bringing together of social, environmental and economic issues into one overarching objective. Such an objective is lost in deforestation. In this study, causes of deforestation and the consequences that lead to the unsustainability and the alternatives or solutions are dealt in detail.

Importance of forests

The forests are the home to 70 % of the world's plants and animals. Forests influence the local and

global climates. They moderate the diurnal range of air temperatures and maintain atmospheric humidity levels. They absorb atmospheric carbon and replenish the oxygen in the air we breathe. Forests reduce soil erosion by slowing the runoff of water and also the hazard of flood and the silting of reservoirs and waterways. Forest woodlands are valued as sites of natural and cultural heritage. Well-managed natural forests regulate soil erosion, thus reducing sediment load. As a result, forests promote higher quality water with less sediment and fewer pollutants compared to other catchment areas.

Forests provide us with a wide range of industrial wood products that one use in daily life-timber, panels, posts, poles, pulp and paper. In addition to wood products, tropical forests give us

a wide range of non- timber forest products or minor forest products such as fibers, resins, latexes, fruits and traditional medicines, essential oils, spices, edible wild plants, gums, tanning materials, natural organic colouring materials, oxalic acid, fibers, insecticides, plants useful for paper and basket, beedi leaf, honey, ivory, wax, edible and medicinal plants, fruits, firewood, thatching and broom materials and many other goods. Forests are often important sources of foodstuffs, particularly in times of drought and famine when conventional agricultural crops have failed. For example in the state of Madhya Pradesh in India, tribal peoples rely on their forests for up to 25 % of their basic food requirements.

Deforestation

Deforestation is the conversion of forested areas into non-forest land use such as arable land; pasture land, urban use, logged area or wasteland. Generally, the removal or destruction of significant areas of forest cover has resulted in a degraded environment with reduced bio-diversity. In many countries, massive deforestation is ongoing and is shaping climate and geography.

Since about the mid 1800s the earth has experienced an unprecedented rate of destruction of forests worldwide. Forests in Europe are adversely affected by acid rain and very large areas of Siberia have been harvested since the collapse of the Soviet Union. In the last two decades Afghanistan has lost 70 % of the forests throughout the country. However only at the current time the world's great tropical rainforests where the destruction is most pronounced. The wholesale felling is having an adverse effect on biodiversity and contributing to the ongoing Holocene mass extinction.. Thus, the forests are being destroyed at an accelerating pace tracking the rapid pace of human population growth. The extent of deforestation has been most rapid in 1990-1995 in Brazil, Mexico, Malaysia and Indonesia. In percentage terms, the highest rate of deforestation is going on in Malaysia. Unless significant measures are taken on a worldwide basis to preserve them, by 2030 there will only be 10% remaining with another 10% in a degraded condition. 80% will have been lost and with them the irreversible loss of hundreds of thousands of species.

Causes for deforestation

Deforestation occurs not due to one single cause but multiple causes. They are direct and indirect.

Population growth and Deforestation

One of the main causes for deforestation is overpopulation in cities and developing countries. Population is continually growing in the third world. Population growth and increasing per capita demands for forest products are increasing pressures for forest exploitation and the conversion of forestlands to agriculture and other form of development, such as mining and fossil fuel extraction.

Agriculture

Due to population growth, the area under agriculture has increased from 118 million hectare in 1951 to 142 million hectare in 1999. Nearly 50% of land in India is used for cultivation of crops. The landless people have to move into the forests seeking farming areas. Cultivation near the forests and application of chemical pesticides have caused environmental hazards to wildlife.

Slash and burn

Slash and burn refers to the cutting and burning of forests or woodlands to create fields for agriculture or pasture for livestock or for a variety of purposes. It is sometimes part of shifting cultivation agriculture and of livestock herding. Historically, the practice of a slash and burn has been widely practiced throughout most of the world in grasslands as well as woodlands, and known by many names. In temperate regions, such as Europe and United States of America the practice has been mostly abandoned over the past few centuries. Today the term is mainly associated with tropical forests.

Logging

Logging is the major cause of global deforestation. The logging industry is fueled by the need for disposable products. 11 million acres a year are cut for commercial and property industries. The roads that loggers build to access the forests and generate hydroelectric power create an easy way for many people to try to manipulate the forest resources. The amount of damages that this adds to the forests cannot be measured nor can that of the illegal logging. Some

importers may even be buying illegally logged wood and not even have known it.

Cattle Grazing

Another force that operates deforestation is a cattle grazing. With the international growth of fast food chains this seems to be an evident factor in the clearing of trees today. Large corporations looking to buy beef for hamburger and even pet food seek cheap prices and are finding them with the growth of cattle grazing. Since cattle grazing brings large profit it cannot be turned down.

State Policies

State policies to encourage economic development, such as road and railway expansion projects have caused significant, unintentional deforestation. Agricultural subsidies and tax breaks have encouraged forest clearing. The distribution of forest lands by the government to the tribal people, on which agriculture cannot be done due to soil variety and at last the land is wasted leading to deforestation..

Habitat Fragmentation

It is a process of environmental change, important in evolution and conservation biology. It is the emergence of discontinuities in an

Organism's preferred environment. Habitat fragmentation can be caused by geographical process that slowly alter the layout of the physical environment on a much faster time scale

Habitat fragmentation is frequently caused by humans when native vegetation is cleared for human activities such as agriculture, rural development or urbanization. Habitats, which were once continuous, become divided into separate fragments. After intensive clearing, the separate fragments tend to be very small islands, isolated from each other by cropland, pasture, pavement, or even barren land.

Acid Rain

Acid rain or Acid precipitation is commonly used to wear the deposition of acidic components in rain, snow, dew or dry particles. Acid rain occurs when sulphur dioxide and nitrogen oxides are emitted into the atmosphere undergo chemical transformation and are absorbed by water droplets in clouds. The droplets then fall to earth as rain, snow, mist and dry dust. This increases the acidity of the soil.

The role of the Military

Weapon imports constitute one important socio-economic and thus ecological burden in many countries. War and violence themselves place a major direct and indirect burden upon forests. Opening up the forest and stimulating migration of people from the centre of the country to these isolated areas serves a strategic purpose. Oil and mineral exploitation within the nation is strategically important, even one has to attract foreign companies with conditions, which allows all profits to flow out of the country.

Global Warming

Most people assure that burning oil and gas causes global warming. But in fact 25% to 30% of the green house gases released into the atmosphere each year – 1.6 billion tones is- is caused by deforestation. Trees are 50% Carbon; when they are felled or burnt, the water they store escapes back into the air. Scientists believe that by the middle of the 21st century the content of Carbon dioxide in the atmosphere will triple the level.

Wild Fire

A wild fire, also known as a wild land fire, vegetation fire, grass fire, bush fire or hill fire is

an uncontrolled fire often occurring in wild land areas, but which can also consume houses or agricultural resources. Common causes are lightning, human carelessness, Arson and volcano eruption. Heat waves, droughts and cyclical climate changes can also have a dramatic effect on the risk of wildfires.

Hydro- electric projects and Dams.

Hydroelectric projects, dams, reservoirs submerge large forest tracts. They uproot thousands of forest dwellers from their area of residence much before the construction of a dam. A lot of land is cleared for providing residence for the workers for which wood and other forest products are used up. While constructing huge dams vast area of forests and human settlements have been destroyed. It leads to social problems e.g.: the dams being constructed across the rivers Narmada and Ganga .

Quarrying and mining

In forested and hilly areas mining and quarrying are harmful. They spoil vegetation over large areas due to mine dust, ore and mine wastes.

Consequences of Deforestation

The social consequences of deforestation are many. For indigenous communities the arrival of civilization usually means the destruction of their traditional life style and the breakdown of their social institutions. Individual and collective rights to the forest resource have been frequently ignored and local communities have typically been excluded from the decisions that directly impact upon their lives. The people living around forests and other natural resources lose their livelihood.

Due to deforestation water sheds that once provided drinking water and irrigation water have become subject to extreme fluctuations in water flow. That loss of safe water puts the health of the people at risk.

In economic terms, the tropical forests destroyed each year represent a loss in forest capital valued at billion of dollars. All potential future revenues and future employment opportunities disappear.

Another serious consequence of deforestation is the loss of biodiversity i.e. the extinction of thousands of species and varieties of plants and animals.

Global warming is another consequence of deforestation. The negative consequences of global warming are catastrophic- increasing drought and desertification, crop failures, melting of the polar ice caps, coastal flooding and displacement of major vegetation regimes.

The impact of deforestation on the soil resource can be severe. The slash and burn farming exposes the soil to the intensity of the tropical sun. This can affect the soil by increasing its compaction and reducing its organic material.

In the dry forest zones, deforestation also results in desertification. It affects about 3,000 to 3,500 million hectares about one –quarter of the world's land area, and threatens the livelihoods of 900 million people in 100 countries of the developing world.

Food security is threatened as irrigation water becomes scarcer. The high sedimentation loads carried by the river devastate fresh water and coastal fisheries. It is also one of the principal causes of the decline of coastal coral reefs. Due to non-retention of water in the water shed areas sudden furious flood occur during the rainy season.

Deforestation leads to excessive heating during summer and excessive cooling during winter. There is reduced rainfall and more dust storms.

Shrinking forest cover lessens the landscapes capacity to intercept, retain and transport precipitation.

Alternatives for Sustainable Development

- To arrest deforestation, it is important to create a network of protected areas where the forests are protected from encroachment
- Improving the quality of resource information. New technologies offer considerable promise in improving resource assessment. Remote sensing using radar imagery, geographic positioning systems and geographic information system can assist in assessing forest cover and identifying problem areas.
- Improvements in forest management require sincere commitments on the part of both government and industry to make real changes.
- Promoting the use of agro forestry i.e. the practice of growing trees with agricultural crops or livestock on the same parcel of land
- Industrial plantation of fast-growing trees have a great potential for satisfying much of the demand for forest products and at the same time, reducing the need to exploit the natural forest. Tree planting and the protecting of existing vegetation from fire, grazing and land clearing should be encouraged and the appropriate incentives should be offered.
- True participation of all interest groups like communities, companies, local government, and other land users is needed in planning and execution of policies.
- More support is needed for national and international Research into

forestry and other land uses for combating deforestation

- Highest priority should be given to reforms to natural resource policies and other policies affecting forestlands. More support must be given to public education and awareness building campaigns about forest sector issues.

Conclusion

Fast deteriorating health of physical environment due to unorganized and indiscriminate use of natural resources has given rise to problems which make environmental management necessary. Sustainable forestry can be achieved by correctly managing forest resources through the various alternatives like improved protection and management of the remaining forests through well –targeted socio-economic development programmes through policy and institutional reforms. Nature and environment should be respected and given importance so that the human race could survive in a happy and healthy atmosphere.

“The sky is like a father, the earth is like a mother and the space is like their son. This universe consisting of the three is like a family. Any kind of damage to anyone of the three, throws the universe off balance.”

-Rig Veda.

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