



A Review On Deforestation and Its Disastrous Effect On Natural Ecosystem

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ABSTRACT

Deforestation is the purposeful or regular clearing of woodlands on a gigantic scale, frequently bringing about harm to the nature of the land and antagonistic ecological impacts. This review paper provides brief overview about different causes of deforestation and its ecological impacts on environment. Tropical forests are vanishing at a very faster rate in the developing countries. Major causes of deforestation in the developing countries are expanded agriculture, urbanization, population pressure, dependence on fuel wood, wild fires, and lack of management at government level. All this lead to have drastic impact on environment including erosion of soil, decrease in biodiversity, habitat loss and economic loss. The possible solution of deforestation is to stop cutting trees at minimum level, artificial forestation should be enhanced to decrease the level of deforestation. Also the government should take action against illegal degradation of forests. Recycling of paper waste should be enhanced to save the trees.

Keyword: *causes of deforestation, tropical forests, perspectives, environmental effects, recycling.*

INTRODUCTION

Deforestation is the purposeful or regular clearing of woodlands on a gigantic scale, frequently bringing about harm to the nature of the land and antagonistic ecological impacts [1]. Our forests still cover around 30% of the world's property region, but clears at an average rate of 75,625 km² area per year. If the deforestation continues at this rate, the world's rain woodlands could totally vanish in a hundred years [2].

Forests are the important factor for the sustainability of environment both in developed as well as in underdeveloped countries. But, during last few decades, cutting of forests has been increased worldwide, which is a serious threat to environmental stability. Globally, forests are depleting at a very faster rate than they grow [2,3]. Both natural and anthropogenic factors are responsible for degradation and depletion of forests throughout the world. Human activities are the major cause of deforestation for short term economic benefits[4]. Population growth, urbanization and other socio- economic factors are involved in exploiting forest resources for their personal needs as well as for commercial purposes [5].

The biggest reason of global deforestation is the increased use of wood by worlds population to meet their energy needs. Almost 2.5 million people depend on wood biomass for their domestic energy requirements [6]. Developing countries consume more wood as compared to developed countries. Because the people in developing countries have low income levels and also they live close to the forestlands [6,7]. This ruthless cutting of forests also causes several environmental and health related problems. Most of the people faces different respiratory diseases due to wood smoke such as asthma, breathing problems, wheezing, sinus problems and so on [8,9].

Pakistan is also a developing country in which major source of income for people is agriculture. Forest cover in Pakistan is less than 5% of the total land area [8]. According to IUCN, these forests are declining day by day, especially in mountainous regions. The deforestation rate in Pakistan is 1.5%, which is very dangerous and considered as the second highest deforestation rate in the world [10]. Hence, according to FAO report, if the present rate of deforestation persists for a longer time, Pakistan's forests may die out within 10-15 years [10,11,12].

Degradation of forests directly effects quality of soil,

biodiversity, water cycle, loss of habitat etc. other indirect effects include environmental instability, agricultural and cultural displacement and financial losses [11]. In this review we focus on impact of deforestation on environment and their possible outcomes for decreasing deforestation.

Causes of Deforestation

According to the United Nations, in most of the developing countries, agriculture is responsible for 48% of forest degradation, with commercial agriculture causes 32% of deforestation, and commercial logging is responsible for only 14% of deforestation, removal of wood for fuel and charcoal comprise less than 6% of deforestation [12]. All these activities are responsible for forest degradation. These causes are discussed in detail as follows:

Agricultural Activities

The conversion of forest for agriculture in the developing countries is one of the biggest drivers of deforestation. Each year farmers cut down trees in a few acres area to enhance their crop production. They also use the wood for slash and burn techniques. Others, clear forests to build farm and other food growing areas [12,13]. Grazing of livestock by farmers in the rangelands also causes decrease in forests distribution. In all developing countries, there is a dilemma that no management is present for forests. Forestry departments and livestock departments took no action against the ruthless cutting of trees. All these factors contribute to the deforestation [13].

Urbanization and infrastructure

Urbanization is another driving force for deforestation. Cities are expanding day by day due to increased human population. Tropical forests are the major source of infra-structure development. Humans cut forests for oil exploitation, mining, for road construction, railways, bridges etc [14]. The improvement of these infra-structure ventures are of overall concern, since tropical forests clearing represents approximately 20 for each penny of anthropogenic carbon outflows decimating all inclusive huge carbon sinks and around 21 for each penny of tropical woodlands have been lost worldwide since 1980 [15].

Logging and Fuel Wood

Logging does not really cause deforestation. Be that as it may, logging can truly destroy forests. Logging in Southeast Asia is more concentrated and can be very damaging [15,16]. However,

logging gives get to streets to take after on pioneers and log scales can help fund the cost of clearing remaining trees and planning land for planting of yields or field. Logging along these lines catalyzes deforestation [16].

Fuel wood gathering is regularly moved in tropical dry woodlands and degraded forests regions [17]. Fuel wood isn't typically the significant reason for deforestation in the humid tropics in spite of the fact that it can be in some populated districts with diminished woodland territory, for example, in the Philippines, Thailand and parts of Central America. Fuel wood gathering was thought to be the fundamental driver of deforestation in Asia [18]. In the drier zones of tropics, Fuel wood gathering can be a noteworthy reason for deforestation and corruption [18,19].

Air Pollution

Air contamination is related with degradation of some European and North American woodlands. The disorder is called "Waldsterben" or woodland demise. In 1982, 80% of all West German trees displayed harm that rose to around 52% by 1987 [19] and half of the trees announced passing on of Waldsterben in the Alps [19,20]. High elevation demonstrate the most punctual harm incorporating forests in the north-east and focal United States

Corruption and Political Cause

The FAO distinguished forest crime and corruption as one of the fundamental driver of deforestation in its 2001 report and cautioned that quick consideration must be given to unlawful exercises and debasement on the planet's forests in numerous nations [21]. Unlawful deforestation practices may incorporate the endorsement of illicit contracts with private ventures by ranger service officers, unlawful offer of gathering grants, under-announcing volumes cut in broad daylight timberland, underpricing of wood in concessions, gathering of secured trees by business corporations, smuggling of forests items crosswise over borders and permitting illicit logging, preparing forest crude materials without a permit [22,23].

Environmental Effects of Deforestation

Deforestation has numerous hurtful impacts on the earth and furthermore drives environmental change. Without assurance from sun because of the tree cover the moist soils in the woodlands rapidly dry out. In the meantime trees additionally help propagating water cycle by returning water once more into the air as vapors. Along these lines, many woods terrains can rapidly end up plainly infertile deserts without trees to fill these parts [21,22,23]. The expulsion of trees denies the forests from shield, which hinders the sun oriented beams amid the day and holds the warmth around evening time. This issue prompts more extraordinary temperatures which can be destructive to creatures and plants. Some of harmful environmental effects are discussed in the following:

Soil Erosion

Soil disintegration, as a characteristic procedure is continually being quickened by deforestation. Trees and plants offer a characteristic boundary to the water stream in the land by roots to grapple the dirt and keep it from washing without end because of the stoppage of water stream [24]. In addition, trees additionally capacity to hold water and topsoil, which gives the rich supplements to maintain solid forest life. At the point when deforestation happens, it comes about into the dirt presentation to the sun, retaining less water, getting to be noticeably dry rapidly, loss of different supplements, and fruitless [25]. Moreover, during rainfall whatever is left of the supplements are washed away with the water into conduits. Eventually, this land will wind up plainly inconceivable for development and the land ends

up noticeably futile [26].

Decreased Biodiversity and Habitat Loss

Woodlands particularly those in the tropics fill in as storage facilities of biodiversity and subsequently deforestation, discontinuity and degradation demolishes the biodiversity in general and territory for transient species including the endangered ones, some of which have still to be indexed. Tropical forests contains around 66% of every single known specie and contain 65 % of the world's 10, 000 endangered species [27].

The biodiversity misfortune and related substantial changes in woods cover could trigger sudden, irreversible and destructive changes. These incorporate territorial environmental change including criticism impacts that could hypothetically move rainforests to savannas and the rise of new pathogens as the developing exchange bush meat builds contact amongst people and animals [28].

Economic Losses

The tropical woodlands crushed every year adds up to a misfortune in timberland capital value at US \$ 45 billion [29]. By decimating the forests, all potential future incomes and future business that could be gotten from their maintainable administration for timber and non-timber items vanish.

Social Consequences

Deforestation, as such, is a declaration of social shamefulness [30]. The social outcomes of deforestation are numerous, regularly with obliterating long term impacts. For indigenous groups, the landing of human advancement generally implies the change of their traditional way of life and the breakdown of their social establishments for the most part with their removal from their genealogical zone [31, 32, 33]. The interruption of outsiders destroys customary ways of life, traditions and religious convictions which heightens with infra-structure improvement like development of streets which comes about into frontier extension frequently with social and land clashes [35].

CONCLUSION

The absence of consideration at the administration level, riches and influence because of collecting of the wealth of the forests, population development and urbanization are a portion of the regular causes of deforestation. Other most regular causes are; business purposes, agribusiness, brushing land, utilized for fuel, and unlawful logging. Additionally outlined the antagonistic impacts of deforestation in the nation including; soil disintegration, disturbance of water cycle, biodiversity misfortune, flooding and drought, environmental change and an unnatural weather change, expanded ozone harming substances, annihilation of countries and social relocation, rural and monetary misfortunes, all this lead to deforestation.

RECOMMENDATIONS

The speediest answer for deforestation would be essentially screen and quit chopping down trees. Artificial forestation ought to be planted with a specific end goal to adjust the uncontrolled deforestation. Additionally there is a massive and pressing need to create gatherings of multi-partners at government, common and neighborhood levels to audit the forest advancement at ground substances. Previously, woodland approaches have been set up in segregation from population planning, water, the vitality parts, fisheries, natural life, horticulture, tourism, and training. There is a need to create relationships with different segments for reasonable asset administration and advancement.

At last, keeping in mind the end goal to adapt to the expanding demand of the paper business, government ought to build up a strategy to augment the reusing of paper waste. Moreover, there

ought to be constrained interval in cutting of trees which ought to be the length of a tree sets aside opportunity to re-develop. Against the cutting of a tree planting of 10 new trees ought to be practically implemented.

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REFERENCES

1. Ali, J., Benjaminsen, T.A., Hammad, A.A., & Dick, O.B. (2005). The road to deforestation: An assessment of forest loss and its causes in Basho Valley, Northern Pakistan. *Global Environmental Change-Human and Policy Dimensions*, 15(4), 370-380.
2. Amjad, M. S., Arshad, M., & Chaudhari, A. (2014). Structural diversity, its components and regenerating capacity of lesser Himalayan forests vegetation of Nikyal valley District Kotli (A.K), Pakistan. *Asian Pacific J. Tropical Medicine*, 7(3), 454-460.
3. Anonymous. (2001). *State of the World's Forest*. FAO, Rome: Italy.
4. Anonymous. (2005). *Ecosystems and Human well-being: synthesis. Millennium ecosystem Assessment*. Island Press, Washington DC.
5. Bawa, K. S., Nadkarni, N., Lele, S., Raven, P., Janzen, A., Lugo, A., Ashton, P., & Lovejoy, T. (2004). Tropical ecosystems into the 21st Century. *Science*, 306, 227-230.
6. Becek, K., & Odihi, J.O. (2008). Identification and assessment of factors affecting forest depletion in Brunei Darussalam. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences XXXVII, 5(2), 209-214.
7. Boy, E., Bruce, N., & Delgado, H. (2002) Birth weight and exposure to kitchen wood smoke during pregnancy in rural Guatemala. *Environmental Health Perspectives*, 110(1), 109-114.
8. Bruce, N., Perez-Padilla, R. & Albalak, R. (2000). Indoor air pollution in developing countries: a major environmental and public health challenge for the new millennium. *Bulletin of the World Health Organization*, 78(9), 1078-1092
9. Chomitz, K. M., Buys, P., Luca, G. D., Thomas, T. S., & Kanounnikoff, S. (2007). At loggerheads? Agricultural expansion, poverty reduction and environment in the tropical forests. *World Bank Policy Research Report*, World Bank: Washington DC.
10. Colchester, M. & Lohmann, L. (1993). *The Struggle for land and the fate of forest*. Zed books: London.
11. Contreras, H.A. (2000). *The underlying causes of forest decline. CIFOR Occasional Paper No. 30*. CIFOR, Bogor: Indonesia.
12. Costa, M. H., S. N. M., Yanagi, P., Ribeiro, A., & Rocha, E.P. (2007). Climate change in Amazonia caused by soybean cropland expansion, as compared to caused by pastureland expansion. *Geoph. Res. Letters*, 34(7), 45-56.
13. F. A. O. (1998). *Asia and the Pacific, National Forest Program, Regional Office for Asia and Pacific Publications*. FAO: Rome.
14. Forestry Department, (2010). *Global Forest Resources Assessment FRA2010/158*. Rome: Italy.
15. Geist, H., & Lambin, E. (2003). Is poverty the cause of deforestation? *The International Forestry Review*, 5(1), 64-67.
16. Government of Pakistan, (2014). *Flood series worst recently*. Islamabad: Pakistan.
17. Hansen, C. P. (1997). Making available information on the conservation and utilization of forest genetic resources. *The FAO Worldwide Information System on Forest genetic resources*
18. Kaimowitz, D., & Angelsen, A. (1998). Economic models of tropical deforestation. A review. *Center for International Forestry Research*, Bogor: Indonesia.
19. Laurance, W. F. (1999). Reflections on the tropical deforestation crisis. *Bio. Conservation*, 91(2-3), 109-117.
20. Lean, G. (1990). *World Wildlife Fund Atlas of the Environment*. Prentice Hall, New York.
21. Myers, N., & Mittermeier, R. A. (2000). Biodiversity hotspots for conservation priorities. *Nature*, 403, 853-854.
22. Portal, P. W. (2013). Monsoon 2011: Backlash of the floods? - *History of Pakistan floods in Detail Pakistan Weather Portal (PWP)*.
23. Putz, F. E., Blate, G. M., Redford, K. H., Fimbel, R., & Robinson, J. (2001). Tropical forest management and conservation of biodiversity: An overview. *Conservation Biology*, 15, 7-20.
24. Raloff, J. (1989). *Where Acids Reign*. Science News July 22. Pp 56-58
25. Repetto, R. (1988). *The forest for the trees? Government policies and the misuse of forest resources*. World Resource Institute, Washington DC.
26. Repetto, R. (1990). *Deforestation in the Tropics*. Scientific American April, p. 37.
27. Saghir, J. (2006). Energy and poverty, myths, links and policy issues. Energy Working Notes No. 4 Washington, D.C: World Bank.
28. Schmink, M., & Wood, C. (1992). *Contested Frontiers in Amazonia*. Columbia University Press, New York.
29. Shakoor, U., Saboor, I., Ali, A.Q., Mohsin, A. (2011). Impact of climate change on agriculture: Empirical evidence from arid region. *Pakistan J. Agr. Sci*, 48(4), 327-333.
30. Tasleem, A., Zahoor, U., Mir, H.K., & Nazli, R. (2007). Chronic bronchitis in women using solid biomass fuel in rural Peshawar, Pakistan. *Chest*, 06 (2529), 1472-1476.
31. Treydte, K. S., Schleser, G., Helle, D., Frank, M., Winiger, G., Haug, J., & Esper, J. (2006). The twentieth century was the wettest period in northern Pakistan over the past millennium. *Nature*, 440(7088), 1179-1182.
32. Vance, C. & Iovanna, R. (2006). Analyzing spatial hierarchies in remotely sensed data: insights from a multilevel model of tropical deforestation. *Land Use Policy*, 23(3), 223-238.
33. Yao, Y. J., Liang, J., Cheng, Y., Lin, K., & Liu, M. (2014). Impacts of Deforestation and Climate Variability on Terrestrial Evapotranspiration in Subarctic China. *Forests*, 5(10), 2542-2560.
34. Yu, L. X., Zhang, J., Tang, T.X., Liu, K., Bu, F., Yang, J. (2015). The effect of deforestation on the regional temperature in Northeastern China. *Theoretical and Appl. Climatol*, 120(3-4), 761-771.
35. Zubair, M., Garforth, S., Hussain, D., Zahid, M. S., Baloch, F. R., & Hussain, N. (2011). Farm forestry in Pakistan: an application of theory of planned behavior by probing into the measurement issues. *Pakistan J. Botany*, 43(1), 705-714.

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