

Raniganj Girls' College

Course Name: Environmental Studies

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A Project Report

Submitted by Semester-I Students

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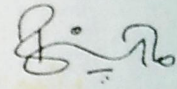
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# DEFORESTATION

Introduction :- Deforestation is the permanent destruction of indigenous forests and woodlands. The term does not include the removal of industrial forests such as plantations. It has resulted in the reduction of indigenous forests to  $\frac{1}{5}$  of their pre-agricultural area.

Deforestation is a problem that is caused largely by greed and want for property, money and possibly status. In many parts of world the forest is taken for granted as a replenish able resource, which it is. The problem is that the tree cannot be re grown and replanted at the rate at which they are being cut down. For this reason the forests are declining at an incredible rate and there is no foreseeable future for places like the Amazon which remained untouched for 20 000 years and now could be destroyed in less than a human's life time.

Deforestation is a problem with far reaching consequences ranging from a barren landscape to a higher carbon dioxide levels in the air. The underlying points is the air. That we have to pull together to stop the destruction of the world's woodlands and forests.

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in areas which leads to shrinkage of forest. Deforestation occurs at great extent in order to meet the requirements like building of house, construction of roads & highways etc. overpopulation directly impact the forests and thus causes deterioration.

1.8. Livestock Ranching: - The Major disruptive effects on mangrove forest environment are occurring due to increasing livestock ranching. Almost 340 million tons of carbon dioxide is emitted into the atmosphere due to the deforestation that is caused by cattle ranching globally and it contributes to approximately 3.4% of current global emissions.

1.9. Lack of Public Awareness: - The deterioration of mangrove forest is greatly linked with failure of proper management policies which includes: Failure of institutions to effectively manage coastal mangrove resources and conflicting activities, poor planning and knowledge of coastal land use and implementation of development plans that does not include environmental protection principles, lack of skilled and well-trained officials. Thus, due to lack of proper management policies and poor knowledge of mangrove ecosystem in leading to destruction of the resources in this forest.

## Solution : —

Deforestation refers to the removal of trees resulting in cleared land.

There are several consequences of deforestation :-

1. Changes in soil:
  - ②. Loss of nutrients in the soil that are derived from breakdown of tree leaves.
  - Increased soil erosion by wind and rain.
  - Increased flooding due to a lack of water absorption by trees.
  - Decreased ability to support other plants due to nutrient loss.
2. Loss of biodiversity:
 

Animals and plants that are unable to grow outside of a forest environment face extinction.
3. Climate change:
 

Increased greenhouse gases (such as carbon dioxide) present in the air.

when trees are not available to absorb them.

Decreased cooling of land from water evaporation in forests.
4. Impacts on humans:
 

Decreased availability of wood for cooking and heating.

# Acknowledgement

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# SUNDARBAN DEFORESTATION

## 1. Meorial & Methods :-

1.1. Study Area :- The location of Sundarbans is in the south-west of Bangladesh between the river Baleswar in the East and the Hasinbanga in the west, which eventually falls in the world. It lies between Latitude  $21^{\circ} 27' 30''$  and  $22^{\circ} 30' 00''$  North and longitude  $89^{\circ} 02' 00''$  and  $90^{\circ} 00' 00''$  East and with a total area of  $10,000 \text{ km}^2$  in which 60% of the area lies in Bangladesh and the rest of it is in India. The land area, including exposed Sandbars, occupies  $414,259 \text{ ha}$  (70%) with water bodies covering  $187,413 \text{ ha}$  (30%).

1.2. Data Sources :- This study is based on data obtained primarily from governmental & Non-governmental organizations along with field level survey conducted in the locality of Sundarbans and some residents living in city of Khulna.



## CONCLUSION

Deforestation of Sundarban can lead serious consequences like sea level rise, biodiversity loss, extinction of different species and it will directly affect the economy. To save this forest it is very important to identify the existing problems along with the reasons behind it. The study conducted provides some historical data that show the various degradation sectors and also shows people's perception on how and at what degree the Sundarban is getting destroyed. We recommend in this paper to provide researchers with true data for analysis and promote in depth public participation for conserving this mangrove forest.

**Increased Greenhouse Gases :-** In addition to the loss of habitat, the lack of trees also allows a greater amount of greenhouse gases to be released into the atmosphere. Healthy forests absorb carbon dioxide from the atmosphere, acting as valuable carbon sinks. Deforested areas lose that ability and released more carbon.

**Water in the Atmosphere :-** The trees also help control the level of water in the atmosphere by helping to regulate the water cycle. In deforested areas, there is less water in the air to be returned to the soil. This then causes dryer soil and the inability to grow crops.

**Soil Erosion and Flooding :-** Further effects of deforestation include soil erosion and coastal flooding. Trees help the land to retain water and top soil, which provides the rich nutrients to sustain additional forest life.

Without forests, the soil erodes and washes away. Causing farmers to move on land perpetuate the cycle. The barren land which is left behind in the wake of these unsustainable agricultural practices is then more susceptible to flooding, specifically in coastal regions.

Deforestation alters land and so that many of animals do not survive. Removal of trees thins the forest canopy and thus sun rays are blocked during the day and holds in the heat at night. Such kind of disruption leads to extreme temperature swings that are harmful for the animals. Many wonderful species of animals have been lost, and many others remain endangered. Animals like Panthera Tigris (The Royal Bengal Tiger) are losing their habitats and have become endangered and may even go extinct. Since each species of an ecosystem depends on other so loss of one species can have negative consequences for other species.

## Environmental Effects of Deforestation

Loss of Habitat : — One of the most dangerous and unsettling effects of deforestation is the loss of animal and plant species due to their loss of habitat. 70% of land animals and plant species live in forests. Not only does deforestation threaten species known to us. But also those unknown.

The trees of the rainforest that provide shelter for some species also provide the canopy that regulates the temperature. Deforestation results in a more drastic temperature variation from day to night, much like a desert, which could prove fatal for many inhabitants.

natural biodiversity, residents and other infrastructure but also it badly affects the carbon fluxes in the soil and atmosphere thus alters the carbon cycle in the forest. Both educated and uneducated people are illegally using the resources which are economically important. Though there are some natural causes of deterioration of Sundarbans but the gravity of degradation is extremely high due to the anthropogenic activities. Conservation and sustainable management efforts must be taken in order to protect this forest. This major reasons for the deterioration due to deforestation are mentioned below:

1.4. Illegal cutting down of trees:— Significant numbers of logs of trees from the Sundarbans are cut down which unfortunately find their way out of the forest under the noses of the authorities. It has been that illegal trades have gained momentum where the corrupt officials and loggers' group together to clear out the precious trees from this forest. Though there are many programs under both governmental and nongovernmental organizations to promote the plantation of trees but an illicit trade is existing in this forest that is significantly reducing the number of trees.

1.5. Imbalance in agricultural expansion:—

### 1.3 Deforestation of Mangrove Forests: - Sundarbans

Mangrove forest in Bangladesh is extremely rich due to presence of multiple natural resources like trees, birds, animals, water bodies, sink of carbon dioxide, honey, fuelwood, pulp, charcoal, thatch, fodder, wax, medicine and floras. Hence this renewable natural resource has both economic and ecological importance. But this mangrove forest is undergoing deforestation at a significant alarming rate. The overall mangrove ecosystem of the whole world is reducing at an astonishing rate due to both natural and manmade causes. This Sundarbans mangrove forest has now become the most threatened habitat in the world. There are various reasons behind the depletion of Sundarbans of which unauthorized forest cutting and over exploitation of natural resources are the main. Overexploitation of Non-Timber Forest Products and wood, pollution from industrial and agricultural activities; oil spills from boats, power plants, ships polder constructions, sea level rise, cyclones, storm surges etc. has put Sundarbans under huge threat. However; deforestation activities not only impact the

# CAUSES OF DEFORESTATION

1. Agriculture :- Conversion of forests to agricultural land to feed growing needs of people. There are an estimated 300 million people living as shifting cultivators who practice slash and burn agriculture and are supposed to clear more than 5 lakh ha of forests for shifting cultivation annually. In India, we have this practice in North-east and to some extent in Andhra Pradesh, Bihar and M. P. which contribute to nearly half of the forests clearing annually.
2. Exposing soil to heat and rain :- Heavy rainfall and high sunlight quickly damage the top soil in clearings of the tropical rain forests. In such circumstance, the forest will take much longer to regenerate and the land will not be suitable for agricultural use for quite some time.
3. Flooding :- Deforestation can results to watersheds that are no longer able to sustain and regulate water flows from rivers to streams. Trees are highly effective in absorbing water quantities, keeping the amount of water in watersheds to a manageable level. The forest also serves as cover against erosion. Once they are gone, too much water can result to down-sloping flooding, many of which have cause disasters in many parts of the world.

The fertile top soil is eroded and flooded into the lower regions, many coastal fisheries and coral reefs suffer from the sedimentation brought by the flooding. This results to negative effects in the economic viability of many business and fatalities in wildlife population.

4. Natural Causes :- Natural calamities like forest fires, floods, droughts tsunamis can cause deforestation. Man has no role to play in here.

## THE DATA BEHIND DEFORESTATION

- Forests covers approximately 31% of the total land surface of the Earth.
- Tropical forests harbour over half of all land-based animal and plant species in the world.
- Between the years 2000 and 2012, over 568 million acres of forest has been claimed by deforestation.
- Approximately 9 million acres of virgin tropical forest was cut down in the year 2018.

Agricultural expansion is one of the major reasons for deforestation. Severe damage of ecosystem is seen due to the agricultural expansions in Sundarbans. The water quality of the surrounding rivers is affected by the augmented numbers of nitrates that are being used in the lands. The habitats of wild life are also in dangers because of haphazard expansion. Huge number of trees are being cut by the local farmers in order to plant salt tolerant paddy in unplanned way which is also deteriorating the forest area.

1.6 Cultivation of Shrimp: — The demand of shrimp in the international market is extremely high as a result of which more and more areas in the forest are used for cultivation of shrimp. Since 1980's the area for shrimp culture has been increased by almost 10 folds. Survey data obtained from 264 higher income households from six villages in mongla shows that approximately 46% of the overall income comes from shrimp cultivation. Saline water is allowed to enter into the land which is trapped later in order to cultivate the shrimp and this trapped water is increasing the salinity.

1.7. Overburdened population and Urbanization: —

With the increasing population the demand of people