

# Effects of Deforestation on Environment: Special Reference to Assam

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## ABSTRACT

Deforestation poses a major challenge in developing countries like India. In our present study the specific area is Assam where we face a big problem of climate change due to deforestation and other many causes. Deforestation can be defined as the clearing or removal of forest for specific reasons such as rapid industrialization, tea plantation, poverty etc whereby the land available for non-forest use. This dissolves actions of mankind which are causing an intolerable imbalance in nature and is a major factor leading to climate change, extinction of rare animals, desertification and displacement of population etc. Deforestation is also one of the major causes of a disturbed water cycle, global warming and soil erosion. If not controlled, the imbalance is likely to threaten life on Earth. The paper discusses the causes and problems of deforestation in Assam & tries to give some suggestions and highlight the government schemes to reduce it. The study recommends that to reduce deforestation in our state the central and the state governments, the NGO and the public jointly should take some immediate steps for reforestation and the state's forest policy need to be strengthened by acquiring legal support for better implementation of government scheme.

**Keywords:** Deforestation, extinction, desertification, displacement

## 1. INTRODUCTION

Assam has its rich potential for the development of forest. The word 'forest' generally implies a large area under heavy tree cover - an area which has evolved naturally over hundreds of years. In 1977-78 the total area covered by forest in Assam was 28,608 sq.km which was 36.4% of the total geographical area of the state. As per India State Forest Report 2009, the forest cover in our state is 27,692 sq.km which is 35.30% of the state's geographical area. And again as per the latest report released in 2011, the total forest area of Assam is 27,673 sq.km. However, from the census report of different years it is proved that our forest is degraded due to various factors. Among all the districts, Karbi Anglong and North Kachar Hill possess the highest concentration of forests in the state.

Many parts of forests have been cut down to build colonies, factories and for cultivation etc. All around the world trees are being cut down too quickly by people due to many reasons and over once vast forest area disappearing from the earth which is called 'Deforestation'. It is one of the important factors in global climate change. It is a very real environmental threat for the world. So our present project will try to discuss the causes and effects of deforestation in Assam and try to give some solution for solving the problems.

## 2. OBJECTIVE:

The following objectives have been submerged in our project:

1. To study the causes of deforestation.
2. To study the problems arising due to deforestation.
3. To provide suggestions to reduce deforestation.

## 3. METHODOLOGY:

The project will be based on concerning literature method, interview method and observation method.

### Literature method:

We collect some data and information from internet, books, newspaper and magazines etc.

### Interview method:

The oral-verbal responses are taken from officers/ workers of forest departments.

### Observation method:

We observe the actual conditions of deforestation in Assam specially Golaghat, Tinsukia and Karbi Anglong district

## 4. OBSERVATION

Forestry is a vital sector of the state. The forest cover in the state, as per India State Forest Report 2011 is 27,673 sq. Km and in 2009 it was 27,692 sq. km. It proves that the forest cover of the state has decreased by 19 sq. km. as compared to the above mentioned 2 year's census. This comparison is also shown in the following tables:

**TABLE NO:1 FOREST COVER IN INDIA (AREA IN SQ.KM)**

FOREST AND TREE COVER	UNIT	2005	2009	2011
Area of forest cover	SO. Km	27,645	27,692	27673
Area of tree cover	SQ. Km	1484	1590	1564
Total area of forest and tree cover	SQ. Km	29129	29282	29237
Forest and tree cover to the total geographical area of forest	%age	37.13	37.33	37.27

Source: Forest Survey of India 2005, 2009, 2011.

**TABLE NO. 2 FOREST COVER IN THE STATE (AREA IN SQ.KM)**

	VERY DENSE FOREST	MODERATE DENSE FOREST	OPEN FOREST	SCRUB	NON-FOREST	GEOGRAPHICAL AREA
2009 ASSESSMENT	1481	11,558	14,673	179	50,567	78,438
2011 ASSESSMENT	1444	11,404	14,825	182	50,583	78,438

Source: Forest Survey of India, 2011

**TABLE NO.3 FOREST COVER IN DIFFERENT STATES IN NORTH EAST INDIA**

STATES	PERCENTAGE OF FOREST COVER
ARUNACHAL PRADESH	80.39
ASSAM	35.28
MANIPUR	76.10
NAGAON	76.69
MEGHALAYA	77.08
MIZORAM	90.38
TRIPURA	74.98
SIKKIM	47.32

Source: Forest Survey of India 2011

The census proves that forest cover of Assam is in lowest position than the other states of North East India.

In our field study we have interviewed with some learned persons of different district. We have taken the opinion of at least 30 people from the different districts like Golaghat, Jorhat, Tinsukia, Karbi-Anglong, Sibsagar district etc. Dr. Theso Kropi, Lecturer of Women's College, Tinsukia from Karbi Anglong has told her experiences about deforestation of her district. She said that Jhum cultivation, Rubber plantation, wood fire and supply the bamboo for Jagiroad Paper mill are the main causes of deforestation in her district. One Lecturer of Economics department of the same college from Sibsagar district has pointed out that good amount of revenue is earned by the state government from its various forest produces (wood, fuel wood, bamboo, stone, sand and gravel, thatch etc) which is an important cause of deforestation.

From the interview with other some learned people we identify the causes of deforestation as follows-

- High growth of population by increasing the absolute number of people living below the poverty line increases their dependence on forest resources for survival needs. Lack of alternative livelihood, the poor people is engaged in the destruction of forest for collection of firewood.
- Since the coming of the immigrants from neighbouring country like Bangladesh and their settlement in the forests, (occupied the unmarked forest land) the process of capturing vote banks has been going on and the result is the gradual destruction of the forest land.
- Much destruction of forest occurs due to construction of roads and railway lines, opening up new industrial towns, construction of communication towers and electrical lines etc.
- The growth of tea industry in Assam is a cause of deforestation. The farmer cut down the forest and these areas have to give way to tea plantation. Thus number of tea garden increasing in our state and number of forest areas are decreasing.
- Forest and grasslands have destroyed by the expansion on settled agricultural practice. Mainly the two districts, Karbi Anglong and N.C. Hills are populated by hill tribes and they are habituated with "Jhum" cultivation. This particular 'slash' and 'burn' of forest areas and natural vegetation. After 2/3 years they leave the land and search the other land for cultivation. Thus, Jhum cultivation destroyed the vast forest area of hill districts.
- Open rearing of domestic animals also contributes damage of the environment.
- Forest land becomes the first choice for rehabilitation of people affected by various natural calamities-thereby adds to further reduction.
- Forest in Assam provides raw materials for various industries like plywood industry, match industry, paper industry etc. These types of industries are available in our state and it is one of the most important causes of deforestation. For example - for Jagiroad paper mill (Nagaon) many bamboos are collected from different parts of our state particularly from Karbi Anglong.
- The timber like Sal, Bansam, Chegum, Sishu, Gamari, Bhula etc are very much valuable for furniture making and construction work. So people cut down the valuable trees and use in daily life and destroy the forest.

Use of the forest as a major revenue earner has also contributed much to the deforestation. A good amount of revenue is earned by the state governments from various major and minor forest produces.

The out turn of Major and Minor forest products for last three years are as follows:

**TABLE: 4 Production of forest product of the state:**

Forest Produce	Unit	2009-10	2010-11	2011-12
Major Forest Produce				
Industrial Timber	Cubic Metre	9839	34142	19782
Fuel Wood	Stack cubic Metre	16063	1289	807
Minor Forest Produce				
Sand	Cubic Metre	2905333	2470587	3153610
Gravel / Stone	Cubic Metre	34269919	1979815	1801173
Silt / Clay	Cubic Metre	2243569	1730252	771577
Others	Cubic Metre	4192455	6579400	31644926

Source – Office of the principal chief conservator of Forest, Assam

**TABLE: 5 The amounts of revenue earned from various products during the last 2 years are shown in the following table:-**

Revenue earned Rs (in lakh)			
ITEMS	2009-10	2010-11	2011-12
Timber	68.79	815.17	713.80
Fuel wood	--	1.17	1.35
Sand	6857.72	2720.78	3153.60
Gravel / Stone		1360.39	2431.58
Silt / Clay	--	257.19	115.73
Others	7751.60	713.82	590.74
Total	14678.11	5868.52	7006.80

Source – Office of the principal chief conservator of Forest, Assam

**TABLE: 6 Trend of Revenue Earned from the forest product in the state (Rs. In Lakh)**

year	2001-02	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2012-13
Revenue earned	1207.77	4338.26	3971.07	5062.70	6266.00	14678.11	5868.52	7006.80

Source: State Forest Department, Assam.

The above tables show that a good amount of revenue is earned by the state government from various major and minor forest product. Due to these reason deforestation is a major threat for us.

#### Some harmful results of deforestation are discussed below:-

- A. Due to deforestation, rainfall has decreased in the state gradually during the last 12 years. Forest help to produce rainfall. The more trees, the more water gets absorbed into clouds and the more rain falls. If the forest disappear there will be less rain resulting in dryer conditions that conditions that eventually lead to drought.
- B. Forest help remove large amounts of carbon dioxide from the air. They absorb the gas during photosynthesis. But forests are cut down and a large amount of carbon dioxide is released to the atmosphere and 20-25 % of global warming due to the massive release of carbon dioxide that had been captured and stored in the trees.
- C. Greenhouse gases like CO<sub>2</sub>, methane, water vapor increase due to deforestation and more of the sun's heat gets trapped and that can lead to climate change. We need these gases in small amounts but they can be harmful at high levels.
- D. Acid rain is also one cause of deforestation. Greenhouse gases polluted the atmosphere which can lead to acid rain when the gases mix with water in clouds. And again when this is deposited on forests it can damage the trees and ecosystem as a whole.
- E. A harmful result of deforestation is the extinction of animal and plant species. They disappear from the forest and it is called extinction. Forests are cut down and wildlife species lose their homes, their food sources and

their place in the web of life. So wild elephants coming inside human habitation in search of food and damaging paddy fields and properties and killing people. It is happening mainly at Kaziranga National Park and Nambar Reserve Forest of Golaghat District. And estimated that as many as 150 – 200 species around the world go extinct every day.

- F. Deforestation is a major cause of soil erosion and floods. When trees removed (cut down) using heavy machinery, the soil becomes loose and is easily carried away. Thus the top soil is removed from the surface of the earth . Thus this type of soil can't absorb the water, when it rains the water remains on the top of the soil and this can result in floods. The moving water also can completely wash away the top layer of the soil. As a result land loses its fertility and this condition became unfriendly for new growth. The condition of wearing off or carrying away of soil by the action of water or wind is known as soil erosion which is responsible for deforestation.

Thus deforestation is the serious environmental problems for us. Trees help to keep the air clean and so we need to grow more trees around us.

D.F.O. Sir of social forestry division, Golaghat district informed us that they are taking some positive steps for plantation in the district and every year the department has achieved success in raising Strip plantation, Block plantation and creation of new nursery in different rural areas and free distribution of seedlings to public including ceremonial distribution during World Forestry Day 21<sup>st</sup> March, Earth Day 22<sup>nd</sup> April, World Environmental day 5<sup>th</sup> June, Vanamahutsava week 1<sup>st</sup> to 7<sup>th</sup> July every year. D.F.O. Sir also

told us that the other districts of our state also took some necessary measures to reduce deforestation.

An officer of this department also informed us that Social forestry wing of Forest Department have been implementing four schemes under state sector during 2009-10 and 2010-

11, i.e Social Forestry General(SFG), Tribal Sub Plan(TSP), Scheduled Caste Component Plan(SCCP), Rural Fuel Wood(RFW) and one centrally sponsored Scheme i.e National Afforestation Programme(NAP) during 2009-10 and 2010-11.

**TABLE: 7**

State Sector Scheme	Financial Expenditure Rs. In Lakh	Area of Plantation Area in Hectare
i) SFG Scheme	350.00	68
ii) TSP Scheme	198.00	388.02
iii) SCCP Scheme	525.00	1941.61
iv) RFW Scheme	50.00	98.54
b) Central Sector Scheme		
i) AP(FDA)	3891.74	26864

Thus, the honorable CM, Assam has announced, the following schemes are included under the 'Mukhya Mantri Assam Bikash Yojana' for the years 2011-12

1. Seuji Dhora Achari for school children.
2. Outside Forest Area plantation.
3. Guwahati Hills Area plantation. During the 12<sup>th</sup> Five Year Plan a sum of Rs 3200.00 lakh are proposed for creation of School plantation 2000 numbers, community plantation/ hills area plantation 1800 and creation of nursery 40 numbers etc under the above component. A sum of Rs 360.00 lakh is proposed for the year 2012-13 for creation of school plantation 500 numbers, plantation 300 and creation of nursery 10 numbers etc are under the above component.

#### CONCLUSION:-

Deforestation is the biggest problem for our environment at this moment. The government, the different organization like NGO and the public should make effort to reduce deforestation otherwise we will face more serious problems in future. From our experiences we want to suggest some tips to prevent deforestation -

1. Planting more trees, severe punishment for forest tree cutters and incentive for villagers to develop more forest around their village.

2. Use recycle items like paper bags, shopping bags, toilet paper etc for decreasing deforestation.
3. We should provide proper nourishment to the planted tree for its growth and development.
4. For good production and to maintain fertility of the land, farmer should use same portion of land to plant different crops in every year.
5. The people should avoid using firewood in their home. Instead of it we should encourage the villagers (poor people) to use bio-gases.

Thus, we should develop more interest in the subject of afforestation in order to root out deforestation.

#### Reference

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