

Impact of Population on Forest of Assam

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Received: May 21, 2018

Accepted: July 03, 2018

ABSTRACT

One fourth of the earth's surface is covered with land. The scientists have estimated that it currently covers 30% with forests. Globally it has been observed that forest area is declining over the years at a very faster rate. Deforestation is influenced by the population growth of a region. The objective of this study is to review the interlink between population growth and deforestation of Assam. Data is secondary, taken from Census of India and Forest Survey of India. We observe that there is a variation in change in forest areas in different states of North east of India and among the different districts of Assam. Though Assam is not topping the list of deforestation and population growth but forest areas are declining over the years. So its high time to check deforestation unless it is too late.

Keywords: Population Growth, Deforestation, North East States, Districts of Assam

Introduction:

One fourth of the earth's surface is covered with land. The scientists have estimated that it currently covers 30% with forests. Globally it has been observed that forest area is declining over the years at a very faster rate. NASA has estimated that in 100 years or so there will be no rainforest if current level of deforestation continues.

The survey of forest Department of India revealed that India is losing 1.3 million hectares of forest a year. The enviable forest area of northeastern part of India is also facing the curse of deforestation. These forest areas are known for their varied and rich species composition. It is considered as one of the 18 biodiversity hot spots of the world. It assembles region of temperate east Himalayan flora, palaeo-arctic flora of Tibetan highland and wet evergreen flora of south-east Asia and Yunnan. The six major forest types of NE India are tropical moist deciduous forest, tropical semi evergreen, tropical wet evergreen, subtropical, temperature and Alpine.

Before proceeding further, let us discuss 'what is deforestation and population growth?' Deforestation means cutting of trees. The dictionary of forestry defines deforestation as the removal of a forest or stand of trees where the land is thereafter converted to a non-forest use. It leads to conversion of forestland to farms, ranches, or urban use. Trees were cut since men started agriculture. The United Nations Framework Convention on Climate Change (UNFCCC) secretariat also considered agriculture as the direct cause of deforestation. In North Eastern India shifting cultivation is the one of the most important agricultural technique which is also known as Jhum cultivation. Here acres of land were cut or burned to do farming. But earlier the same land was used only after 20-25 years. But nowadays this Jhum cycle is repeated after 4-5 years which leads to loss of forest cover. This results in loss of soil fertility and farmers are forced to go for a new forest area for cultivation which worsens the situation of forest area. Over grazing i.e. unrestrained and haphazard grazing in the forests results in degradation of forest soil and it hampers forest regeneration. Forest vegetation is also destroyed for fuel wood. Deliberate and incidental forest fires are also the causes of deforestation in India. According to Forest Survey of India (1996) fire destroys about 0.5 million hectares of forests annually. It has also been observed that demand for timber is more than the permissible timber cut by forest department. Thus timber and plywood industries are also acting as the major source of forest destruction. Establishment of industries, developmental activities like construction of roads and railways near forest area also diminishes the forest cover. Another important cause of deforestation in India is the encroachment of land by the people for agriculture, illegal settlement etc. i.e. for ones own personal benefit. In olden days also forest were cleared to settle people. But with the rise in population more land were cleared to reside and thus results in deforestation.

The aforesaid discussion leads us to conclude that directly or indirectly deforestation is influenced by the population growth of a region. Population growth means increase in population of a period over the years. Besides birth and death rate another important factor which influence population growth is migration both emigration and immigration.

Materials and Methods:

With the above background the objective of this study is to review the interlink between population growth and deforestation of Assam. Data is secondary, taken from Census of India and Forest Survey of India.

Results and discussion:

In the following section we will see the position of forest areas and population of different places of NE India. The following table shows the forest area and change in population growth of different NE states of India in 2011.

Table 1: Forest Areas and population growth of Different States of NE India

State	Geographical Area	Very Dense Forest	Mod. Dense Forest	Open Forest	Total Forest Cover	% of GA	Change in forest cover	% change in Decadal population Growth
Arunachal Pradesh	83743	20868	31519	15023	67410	80.50	-74	25.9
Assam	78438	1444	11404	14825	27673	35.28	-19	16.89
Manipur	22327	730	6151	10209	17090	76.54	-190	18.7
Meghalaya	22429	433	9775	7067	17275	77.02	-46	27.8
Mizoram	21081	134	6086	12897	19117	90.68	-66	22.8
Nagaland	16579	1293	4931	7094	13318	80.33	-146	-0.5
Sikkim	7096	500	2161	698	3359	47.34	0	12.4
Tripura	10486	109	4686	3182	7977	76.04	-8	14.7

Source: Forest Survey of India, Census of India 2011

The last two columns of the table show the change in forest cover and decadal growth in population of different states of NE India. We observe that there is a negative change in forest area in all the states except in Sikkim. Manipur tops the list followed by Nagaland, Arunachal Pradesh and so on. In case of population growth Meghalaya followed by Arunachal Pradesh tops the list. The main reason for the loss in forest area is considered as shifting cultivation, insurgency problems in affected areas, illegal timber cutting, encroachment of land for human settlement etc. This is again related to rise in population. Though we observed that in comparison to other NE states Assam's forest area is depleting at a slower rate but this depletion is alarming and its high time to check it. The following table is constructed to show the decadal increase of population and population density of Assam over the years.

Table 2: Percentage of Decadal Increase in population and population density of Assam

Years	% of Decadal Increase in Population	Population Density
1901	—	42
1911	16.99	49
1921	20.48	59
1931	19.91	71
1941	20.4	85
1951	19.93	102
1961	34.98	138
1971	34.95	186
1981	—	230
1991	24.24	286
2001	18.92	340
2011	17.07	397

Source: Census of India

This table reveals that in 2011 the decadal increase in population of Assam is 17.07% which is slightly lower than the national growth of 17.68%. The population density of Assam is 397 which is more than the national population density of 382. This divulges the position of population of Assam. Dhar (1987) also observed population growth of Assam as one of the highest growth rates of population among all the states. Now in

the following table let us see the decadal variation of population growth among the districts of Assam in 2011.

Table 3: Percentage change in decadal growth of population of different districts of Assam, 2011

Districts	% of Decadal Growth
Baksa	10.74
Barpeta	21.43
Bongaigaon	20.59
Cachar	20.19
Chirang	11.34
Darrang	22.19
Dhemaji	19.97
Dhubri	24.44
Dibrugarh	11.92
Dima Hasong	13.84
Goalpara	22.64
Golaghat	12.75
Hailakandi	21.45
Jorhat	9.31
Kamruo (M)	18.34
Kamrup	15.69
Karbi Anglong	17.58
Karimganj	21.9
Kokrajhar	5.21
Lakhimpur	17.22
Morigaon	23.34
Nagaon	22
Nalbari	11.99
Sibsagar	9.31
Sonitpur	15.55
Tinsukia	15.47
Udalguri	9.61

Source: Census of India, 2011

From the above table we observe that the highest growth of population was in Dhubri followed by Morigaon. The lowest population growth districts are Kokrajhar followed by Jorhat. This variation may be explained with the uneven distribution of migrants in different parts of Assam. According to Census (2001) 0.71% of population of Assam is contributed by the international migrants, generally from Bangladesh, Bhutan and Nepal. Out of this 86.14% of the immigrants to Assam is from Bangladesh.

In continuation with the above study we construct table 4 to present the position of forest area in different districts of Assam.

Table 4: District wise percentage of Geographical area and change in forest Cover of Assam in 2011

Districts	% of GA	Change
Barpeta	12.23	-4
Bongaigaon	20.76	3
Cachar	59.06	5
Darrang	13.5	-16
Dhemaji	8.99	1

Dhubri	14.94	1
Dibrugarh	22.42	0
Goalpara	18.48	1
Golaghat	14.99	4
Hailakandi	59.23	0
Jorhat	21.5	3
Kamrup	32.98	1
Karbi Anglong	76.09	-19
Karimganj	47.54	4
Kokrajhar	36.1	-19
Lakhimpur	12.87	5
Morigaon	7.81	1
North Cachar Hills	86.95	-6
Nagaon	20.78	7
Nalbari	12.49	0
Sibsagar	26.05	2
Sonitpur	18.03	7
Tinsukia	40.53	0

Source: Forest Survey Of India, 2011

The above table reveals that the most alarming districts in case of forest areas are Kokrajhar, Karbi Anglong, Darrang, North Cachar Hills and Barpeta. These districts showed a negative change in forest area over the years. The loss in forest cover may be the existence of shifting cultivation and encroachment of some areas. The positive changes may be increase in shade trees in tea gardens, natural regeneration and re growth in areas affected by shifting cultivation.

The above discussion leads us to conclude that there is a variation in change in forest areas in different states of North east of India. This kind of variation is also observed among the different districts of Assam. Though Assam is not topping the list of deforestation and population growth but forest areas are declining over the years. So its high time to check deforestation unless it is too late. This study helps us to assess the gain and loss of forest areas in different districts of Assam. So, policies like reforestation i.e. planting more trees can alleviate the problem of deforestation to an extent. This facilitates restorage of carbon storage, water cycling and rebuilding of wildlife habitats. The non scientific and weak management policies are to be replaced by scientific and region centric policies. The sustainable forest policies are to be framed and implemented to tackle the cause and effect of deforestation. The organization like Global Forest Watch initiated an awareness project to detect and alert deforestation using satellite technology. Community awareness programmes on the demerits of deforestation are to be taken along with the Government Schemes. It has been observed that Forest Departments are entrusted to protect forest areas. But people's participation to protect it are also to be encouraged to get a positive result. Thus the immediate need of the hour is to consider deforestation as a serious threat to our habitat and tackle the problem to get a balanced climate.

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