

## **Man-Animal Conflict in Assam: Causes and Consequences**

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### **Abstract**

The man-animal conflict in Assam has been increased drastically day by day. There are various reasons attributed to this issue, mainly due to constant depletion of forest cover, high rate of human population growth and human settlements close to the forest areas, encroachment into the forest areas for developmental purposes. Additionally, the problem of man-animal conflicts is further aggravated by the expansion of agricultural activities in the nearby region of wildlife habitats. Therefore, the man-animal conflict has been increased in various parts of the state. The consequences of man-animal conflict are very disastrous. Therefore, if the problem of man-animal conflicts is to be solved, the issues need to be taken sincerely.

**Keywords:** Man-animal conflict, habitat degradation, loss of properties, mitigation.

### **1. Introduction**

Before human civilization, nature was in balance state and thus it functioned sustainably without any disturbance, apart from some external natural influences like earthquakes, floods, etc. As soon as humans have started making settlements, they started extracting resources from their immediate natural surroundings. Thus, human pressure on the natural resources has increased as time passed by, be it forests, land or water resources. However, when man learned the art of tilling the lands, they started clearing the forests and thus, extended the agricultural fields. Since forests are the home of a variety of species of plants and animals, therefore, human pressure on the forest resources has been prominent. As a result, various environmental problems have risen up meanwhile. Thus, among the various man-nature conflicts, man-animal conflicts have gained wider attention during the last few decades because of increasing human interference in their natural settings.

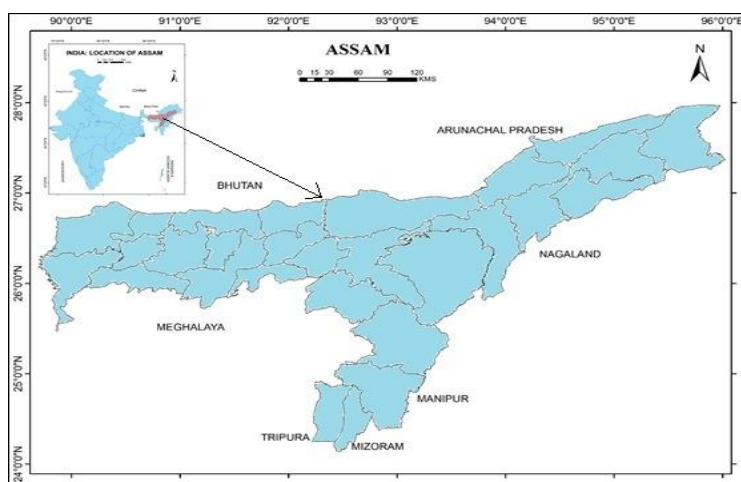
Man-animal conflict is defined as any interaction between humans and wildlife that results in negative impacts on human social, economic or cultural life or the cultural life, on

the conservation of wildlife populations or on the environment (WWF for Nature). It is a situation when wildlife comes into conflict with humans over common resources (Dutta *et al*, 2015). The phenomenon of man-animal conflict is so fast becoming that it becomes a threat to the existence of many globally endangered species, in particular to large and rare mammals. The various cases of man-animal conflict all over the state show its severity and hence an in-depth study to understand the problem is essential that may minimize its intensity. So, an attempt has been made in this paper to analyze the causes and consequences of man-animal conflict and tried to suggest some remedial measures to minimize its vulnerability.

Different scholars have been done there research work in the field of man and animal conflicts. Such as Ahmed *et al* (2012), Dutta *et al* (2015), Palita and Purohit (2008), Athreya and Belsare (2007), Rusche (2003), Nelson *et al* (2003), Udgata (2011), Lingaraju (2017), Govind (2015), Borah and Bhuyan (2016), Zimmermann *et al* (2009), Kar *et al* (2016), Sekhar (2018).

## 2. Study area

Assam is situated between 24°3" - 27°58" North latitudes and 89 ° 5"-96 ° 1" East longitudes (Fig 1). Mighty Brahmaputra river flows through the mid of the state. It is surrounded by Bhutan and Arunachal Pradesh in the north, Tripura and Mizoram in the south, Arunachal Pradesh and Nagaland in the east and West Bengal in the west. The state covers a total area of 78,438 sq. km representing 2.39% of the total area of the country and a population accounting for 2.58% of the total national population.



**Fig 1: Location map of Assam**

### **3. Database and Methodology**

The study is primarily based on data obtained from different secondary sources. Secondary data pertaining to the problem have been collected from published records, magazines, Statistical Hand Book of Assam, 2018. The data so acquired have been systematically arranged and analyzed using appropriate qualitative as well as quantitative and cartographic techniques. Cartographic techniques were incorporated into the paper using Microsoft Excel, Google Earth Pro, and ArcGIS 10.2.

### **4. Results and Discussions**

Assam is blessed by nature and it lies at the centre of one of the world's richest biogeographic areas. In many parts of the world, people and animals are increasingly coming into conflict over living space and food (Palita and Purohit, 2008). The man-animal conflict in Assam has been increased drastically day by day. Man and animals are frequently coming into conflict over habitat and food requirement and this is mainly due to expanding the human population and loss of natural habitats (Dutta *et al.*, 2015). There are various reasons attributed to this issue, mainly due to -

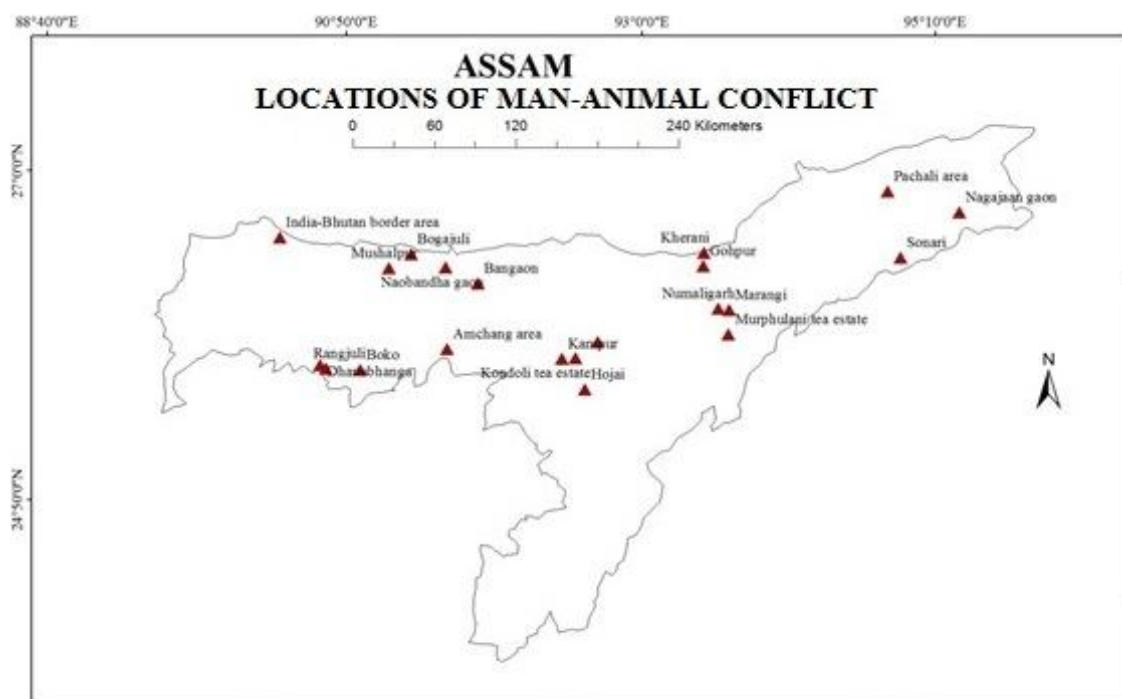
1) Constant depletion of forest covers for various developmental purposes like raw materials for industries, construction of houses, buildings, furniture, etc. The forest cover in the state of Assam was 27,671 sq.kilometers as per the assessment made in the year 2013. There is a decrease of 48 sq.kilometers, in the total forest cover in the state, as per India State Forest Report 2015 to 27,623 sq.kilometers, which is 35.22 percent of the total geographical area of the State,

2) The high rate of human population growth and human settlements close to the forest areas, encroachment into the forest areas for developmental purpose. The total population of the state was 26655528 in 2001 which rose to 31205576 in 2011. This increasing population needs more land for their survival which causes starting the process of encroachment into the forest areas. Of the total forest area which was 1733503.10 hectare, 387151.65 hectares encroached.

3) Additionally, the problem of man-animal conflicts is further aggravated by the expansion of agricultural activities in the nearby region of wildlife habitats. Therefore, the man-animal conflict has been increased in various parts of the state.

### 4.1. Areas of conflict

The man-animal conflicts are varied spatially. If it is man-elephant conflict in one place, it is different in another place like human-leopard conflict, human-boar conflict. There are many incidences of man-animal conflict in various parts of the state. Places like Indo-Bhutan border area of Udalguri, Rangjuli and Dhanubhanga in Goalpara, Chapanalala and Kondoli area of Nagaon, Dhansiri East and West Sonitpur, Murphulani, Marangi areas of Golaghat conflict were recorded.



**Fig 2: Map showing some places of man-animal conflict**

### 4.2. Consequences

The consequences of man-animal conflict are very disastrous. For example crop damage, animal death, loss of human life, and injuries to people and wildlife. Furthermore, it leads to increases in problems like poverty, debts, etc.

#### Crop damage

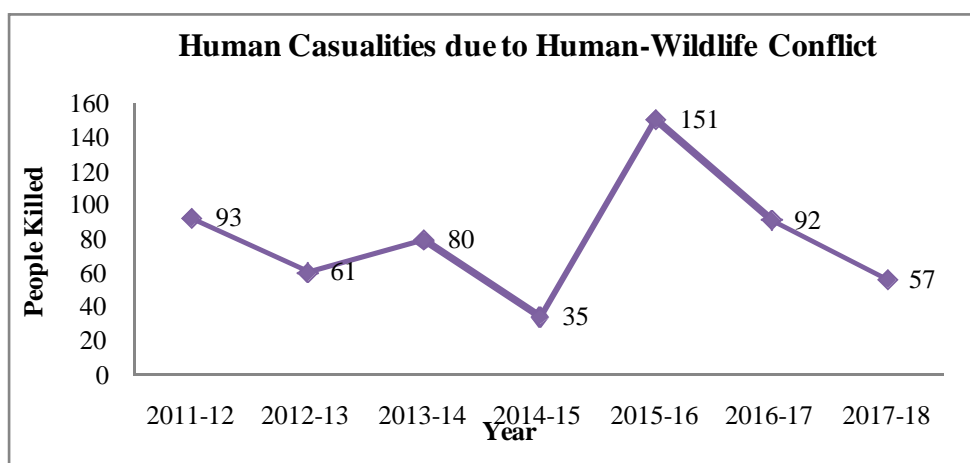
Wild animals involved in crop damage are elephants, wild boars, rhino, and monkeys. Among them, the intensity of crop damage caused by the elephants is very high in the state. Elephants destroyed 634.6 hectares of agricultural land in 2016-17 and the figure rose to 1,246.1 hectares.

**Loss of animal lives**

Due to constant depletion of forest and wildlife habitat, loss of traditional elephant movement paths due to linear infrastructure development projects and also due to human encroachment, wild animals are forced to move towards the human settlement village or agricultural field in search of foods. In this process most of the animal dies caused by electrocution, poaching etc. Among all the animals, elephant are more vulnerable in the states. According to Aaranyak’s assessment 53 elephants were killed in various parts of the state last year.

**Human casualties**

Due the human-animal conflict not only the wildlife are affected, human lives also affected. For example, in 2011-12, 93 persons were killed in the man-animal conflict. Around 61 died in 2012-13, 80 in the year 2013-14, around 35 reported to have died in the following year. In the year 2015-16, highest in the year, around 151 persons were killed because of animal attack. Besides, 441 persons succumbed to injuries due to the altercation between humans and wildlife particularly with leopards and elephants. 92 people died and 56 were injured in 2016-17 while 57 died and 19 were injured in 2017-18 in man-elephant conflict alone in the state. Besides, 1,208 families were affected in 2016-17 due to human-animal conflict. The figure rose to 2,194 in 2017-18.



**Fig 3: Loss of human lives due to human-wildlife conflict**

### **5. Mitigation measures**

To solve the problem of man-animal conflict, the issues need to be taken sincerely. A few mitigation measures have been detailed in the article. Such as Construction of physical barriers such as barbed wire fence, solar power electric fence, bio fencing using cactus to prevent the entry of animals in crop fields, rising fodder resources, the fragmentation of wildlife habitat should be avoided and proper care should be taken so that the connectivity through wildlife corridors is not disturbed.

The wide reach of LPG connection to the villagers who frequently go to the forest areas to fetch fuel wood, developing risk maps by integrating geographic and landscape factors for better conflict management efforts. Besides these, increase awareness campaigns among inhabitants around wild habitats and common people. Thus, the protection of wild habitats is a permanent solution that addresses the problem of man-animal at its root.

### **6. Conclusions**

From the foregoing discussion, it can be concluded that due to human-wildlife conflict there is a great loss to human as well animal lives, decreasing agricultural outcome, destruction of human properties. There is an urgent need to address the conflict problem through the active implementation of effective and creative mitigation measures. Therefore, we must think of tangible long term solutions so that man-animal can live together.

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