

The Man – Animal Conflict : The issue of elephant infiltration in Nayagram Block of West Bengal, India

Mr. Jagatpati Dey

SACT II, Subarnarekha Mahavidyalaya, Jhargram

Mr. Tarak Hansda

Assistant Professor, Subarnarekha Mahavidyalaya, Jhargram

Dr. Kathakali Bandopadhyay

Assistant Professor, Subarnarekha Mahavidyalaya, Jhargram

The age-old conflict can be defined as a nexus where human beings and animals have issues on the uses of the same resources hence leading to loss of property and at times loss of lives from both parties. This conflict has been fuelled by issues such as urbanization, cutting down trees and the existing climate change. They analyse such interactions to explain other social relations and human actions resulting in such conflicts. The socio economic and cultural implication of man- animal conflict will be also discussed in addition to the idea of governance and way forward. Increased encroachment of people on the wildlife habitats or the formerly unsuitable areas has resulted to human-wildlife conflicts

People's mentality direction toward cultures that exist between man and wildlife determines the response on conflict. This case is because the value that some cultures give to animals as Gods is sacred and as such cannot be killed while other cultures view animals as a threat or liability in as much as they are sources of income for the same. For example:

- **Culture:** Hinduism and Buddhism give certain protection to some species while in other cultures, the animals are hunted for economic prosperity (Sukumar, 2003).
- **Other social strategies:** Some Indigenous people groups live in harmony with the wildlife since they appreciate and have the capability of using traditional ecological methods.

Present day portrayals about animal aggression create an element of hate for the animals hence the justification for removing them from the environment (Dickman, 2010).

However, several challenges persist for continuing the process of constructive solving the quandary of man-animal conflict:

- Governments have passed legislation to protect wildlife but there is lacking in the enforcement hence resulting to poaching of the wildlife and their habitats (Treves et al., 2006).
- It means that through time, human population increases a number of ways by which they subjugate the remaining natural environment, encroaching on their habitats with subsequent increased contact with wildlife increases (Woodroffe et al., 2005).
- Global warming: Different environmental changes that affect movement of wildlife, in this case it leads to camping to human dominated areas (Naughton-Treves & Treves, 2005).

Conflict between man and animals has attracted the attention of many particularly where there is human interference with the natural habitats of wild animals. Of the many human-wildlife conflicts that are evident across the world, the Indian community has been experiencing extreme forms of human-elephant conflicts. ELEPHANTS are large mammals with high-energy brains and a social structure that can only function well in expansive areas for feeding and moving around. However, they have been threatened by factors such as deforestation and urbanization that have caused reduction in their natural habitat resulting to the animals invading human habitation in search of foods and water. This has made the elephants to charge towards human activities frequently and an interface between the two has led to problem such as; crop raiding, property damage, injuries, and even loss of lives.

One such place that has reported an emergence of increased conflict between humans and elephants is the Nayagram Block located at the Jhargram District in the state of West Bengal. surgically located in the eastern Side of India, Jhargram has plenty of many forests which are the part of Dalma and Saranda elephant corridors. But human influences such as people's population, agriculture and establishment of infrastructural facilities have caused these corridors to be blocked making elephants to invade villages and farmlands. Therefore, this study seeks to establish the causes of human elephant conflict in Nayagram Block, assess the effects of this conflict on the Nyagram Block community both socially and economically and to determine the possible remedial measures that can be taken to avoid the human elephant conflict in the Nayagram Block.

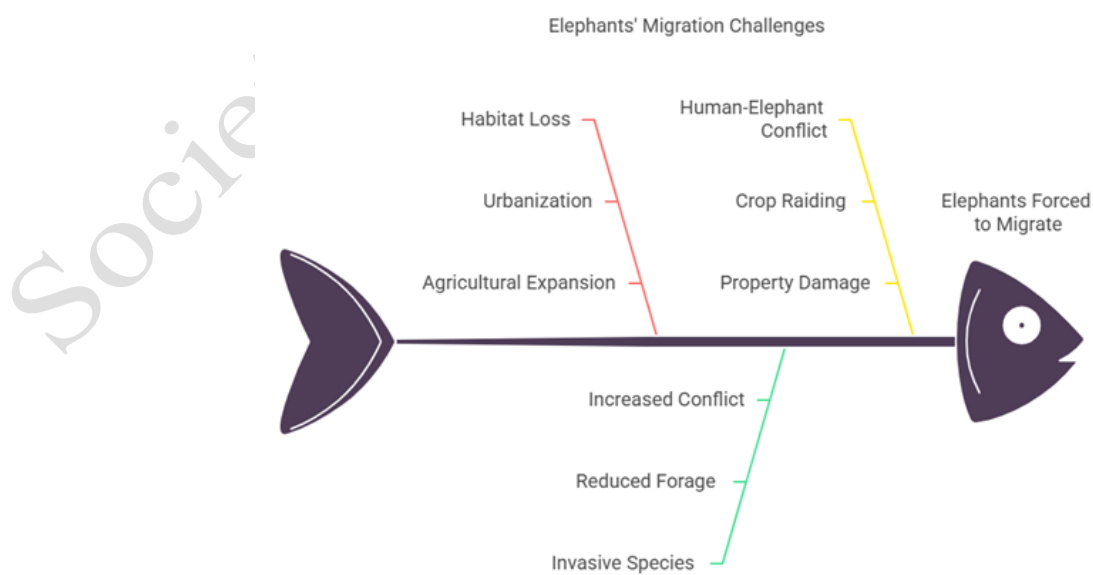
Elephant-human conflict is one of the seriously investigated issues that have been studied in India and other countries that are inhabited by these animals. It presented various causes of the conflict such as loss of natural habitat, damage to some elephant corridors and pressure in the competition for the resources. The multi-dimensional author Sukumar (2003), in his work, states that the two main causes for the elephants' invasion into human territory include

deforestation and expansion of agriculture. As Fernando et al. (2005) stress, human-elephant conflict situations occur in the regions where human's activeness and the space distributed to elephants overlap, such as agricultural areas.

Standing and walking or pull factors are the main determinant whereby Elephant migration is influenced by these factors resulting in movements in a given landscape. Knowledge on these factors is important in formulating the strategies that would be taken to enable conservation of the elephants and the prevention and reduction of human-elephant conflicts.

Push Factors

- **Habitat Loss and Fragmentation:** Rampant evocation, agriculture and other developments such as roads and rail have been cited as some of the main reasons that have triggered the shrinkage of elephant habitats. Due to the continued destruction of their habitats most elephants are forced out of these habitats to search for food and shelter and this put them into contact with the human beings.
- **Loss of Biodiversity:** Factors such as introduction of weeds including *Lantana camara* have had a negative impact on forest ecosystem. Azanza lappa, for instance, competes with the natural vegetation for space so elephants are forced to feed in areas with this shrub covering most of the land. As a result, many elephants trespass into the farms and human habitations to look for food thereby increasing human elephants' conflict.
- **Human-Elephant Interaction:** Elephants penetrate human spaces resulting to crop raiding and destruction of property; hence, the people's anger leads them to address the elephant issue. Such conflicts can expel elephants out of their range in a bid to avoid human contact interrupting their natural migratory pattern.



Pull Factors

- **Food and Water:** Since elephants have ghazal for the products of several forms of agriculture and natural vegetation and easily available water resources they get easily attracted to those areas. human foods such as sugarcane, rice and bananas that are grown in Agricultural fields are easily accessible and tempt the elephants to move in human occupied areas.
- **Wildlife protection:** Some wildlife reserves are created to offer secure passage to some animals that may be migrating like elephants. For example, the Sigur Plateau in Tamil Nadu links west and east; the Western and Eastern Ghats and enables gene flow and movement of elephants.
- **Wildlife Conservation:** Programs for regeneration of the habitats can lead to the relocation of elephants to their natural habits. Measures that enhance the germination and growth of indigenous plant species ensure that there is sufficient food base for elephants so that they can be locked within protected regions.

Causes of Elephant Infiltration

Habitat Fragmentation: Human activities such deforestation and expansion of agricultural lands has led to limitation of large elephant habitats making the elephants to forage in inhabited areas.

The problem of water scarcity has been occasioned by climate change and fluctuating rains which has led to a reduced availability of water in the natural habitats of elephants and pressures them to look for water near human settlements.

- **Human Intrusion:** Human activity including the construction of roads, railway and human settlements within the natural habitats of elephants has worsened different corridors towards increased human and elephants' interface.
- **Habitat fragmentation** refers to the division of large, continuous habitats into smaller, isolated patches due to human activities such as deforestation, urbanization, and agricultural expansion. Some activities such as construction projects also interfere with natural circulation and general conduct of wildlife, including the elephant.

This creature needs large territories of forests for feeding, calving, and ranging, which are destroyed by monumental loss of natural habitats. Thus, deforestation for timber, mining, and infrastructure-related developments lead to the decrease of these habitats and, as a result, elephants trespass into human-controlled lands looking for food and shelter.

Deforestation due to population growth: Based on agricultural practices, there is expansion of population density that leads to human-induced vegetation conversion. Paddy, maize and sugarcane are other crops that are greatly attractive to elephants since they lure the animals to farms. This, in turn, leads to the raid on agricultural fields and compounds causing destruction of crops and great losses to farmers.

- **Interference with Passages:** Elephants have natural movement channels that they use in relations to their daily movement or in search of pastures elsewhere in case of in concessions in their habitat. The construction of farms, and other ancillary facilities such as roads and rail tracks interfere with these corridors and the elephants are forced to use substandard paths which pass through human density populated regions.

In the Nayagram Block a large portion of the total area has been lately brought under cultivation and habitats. This has thus isolated the elephant populations making them to shift from their natural paths of movement due to human intrusion, hence the cases of human elephant interactions.

Drying of Water Sources: For their drinking and for bathing purposes, the elephants use more water and therefore drying up of water sources is a major threat to elephants. Climate change together with droughts leads to a decrease in the presence of natural water resources, for instance, rivers, lakes, and ponds within forests; hence, elephants are forced to look for water in places inhabited by humans.

- **Changing Migration Trends:** While migrating, elephants use to go to areas with plenty of water and food sources. Climate change that alters the vegetation patterns alters the distribution of these resources making elephants to move to other areas and in most cases, they are bound to come in contact with human beings.
- Due to drought, shortage of water, both human beings and elephants are forced to fight over the limited resources that are available. This causes clashes, particularly near water sources in human-populated regions since these crocodiles are herbivores that feed on aquatic plants, but they also eat fish and occasionally, they attack livestock, which are raised mostly around water sources by human beings hence the reason most attacks occur.

In the Nayagram block, currently, there is volatility in rainfall and marked with instances of drought and thus most natural sources of water have dried up. Apparently, elephants intrude into human settlements to look for water sources such as wells, ponds, and irrigation canjas, hence causing crop raiding crises.

It is a conservation tool that is developed as a connecting link between regional sizeable elephant habitats to facilitate their movement for feeding, breeding, and more importantly the migration activities. These passages have great importance as the corridors are important in the preservation of genetic variations and the sustainability of the elephants.

Socioeconomic Impacts

- **Crop raiding:** Elephants have a tendency to invade farmers' fields and strip off their produce thus imposing a huge loss to the farmers. Crops such as paddy, maize and bananas take the highest risk.

- Home destruction: Elephants cause loss of property including houses, fences and any other human structure as they cross through villages.
- Physical losses: This causes people to be scared by the presence of the elephants hence they are insecure thereby leading to loss of human lives.
- Psychologically: People are living in constant fear due to the persistence of elephant invasions.

Ecological Impacts

The following are the two human impacts on elephant migration: Human disruption to elephant migration: Human activities such as setting up of intensive farming and settlement interruptions or tracks the original movement paths of elephants thus affecting their well-being.

- Ecosystem destruction and reduction of size of land or water in which a species lives: For instance, elephants and other wildlife species are antagonistically affected by habitat destruction and fragmentation.
- Human activities have also expanded into the elephant range and accordingly the interaction between people and elephants has also intensified and most of the time is characterized by conflict incidences.

Effectiveness of Mitigation Measures

Those used for containing elephants include trench and electrical fencing which can be both valued and defunct as they are rarely maintained properly and erected inadequately.

Some of the mitigating measures include; some communities have put up watch towers and alarm systems to enable them be warned when the elephants are approaching.

Compensation Schemes of government, a defence mechanism that has been adopted to ensure that funds are provided to families who are affected by death that has resulted from the listed causes, may not always be effective due to the slow processing time and bureaucratic nature of the schemes.

Interconnectedness of the Factors

- Habitat fragmentation, water and man-made pressures are related to each other and often compounded with the other factors. For example:
- Not only does deforestation and agricultural expansion cause habitat fragmentation, but also reduce the number of water sources due to the alteration of drainage pattern.
- Environmental degradation especially as a result of global warming leads to increased drought thus making the elephants to search for water in areas densely populated by humans.
- Fragmentation of human expanded survival paths into the territory occupied by elephants leads to even more segregation of living zones and cutting off the migration paths, thereby forming a sort of a vicious cycle.

It has been established that various factors contributed to the presence of elephants in Nyagram Block these including the ecological factors and relation to human activities. Solving these challenges requires integrated approach when it comes to management of human resources and the elephants. It can be concluded that measures like the reconstruction of destroyed habitats, an elephant corridor, and proper land-use planning of the human environment are crucial for resolution of the conflict and bringing peace to both parties. Through identifying and tackling the causes of apprehension that led to elephants' intrusion into human habitations, human and elephant cannot live side by side can be achieved.

Accordingly, the following **recommendations** have been devoted for the study:

- **Habitat Rehabilitation:** rehabilitation of elephant habitats and corridors to minimize elephants' incursion into human dominated areas.
- **Mitigation:** Develop educational programs and increase readiness and preparedness of people, communities, and institutions of the nation for possible drastic climate change effects.
- **Enhanced Control Measures:** Increase the effectiveness of using ditches and wired fences and resolve to new techniques like the bee hives, chili fence.
- **Reward Systems:** It also advocates for standard procedures in compensation to guarantee adequate and timely assistance to the bereaved families.
- **Policy Interventions:** Adopt policies that seek to regulate and ration the exploitation of the environment to accommodate the growing human anticipation.

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Society Language Culture