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Human-Elephant Conflict In Farsabahar Block Of Chhattisgarh

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Abstract

Human-elephant conflict (HEC) is a serious problem in India, especially in Farsabahar region. With over 27,312 wild elephants spread across various habitats, India is home to 60% of the world's Asian elephant population. Threats to the Indian elephant, which is listed as threatened by the IUCN, include habitat loss, deforestation, increased agricultural production, and infrastructural development, which puts elephants in greater proximity to people. Frequent encounters, especially during grain harvest seasons, have resulted in crop theft, property destruction, and even fatal fights with local populations in Farsabahar, a crucial elephant migration corridor.

According to a survey of 100 people living in communities that frequently experience conflict, habitat destruction and resource competitiveness are the main causes of conflict, with the majority of occurrences taking place along the boundary between farmland and forests. Physical barriers and early warning systems are examples of mitigation techniques that are often pricey or short-term. The study highlights the necessity of community-based, integrated management strategies that strike a balance between elephant conservation and human livelihoods, with a focus on migratory corridor restoration and better compensation and support for impacted people.

Keywords: IUCN, HEC, Farsabahar, human settlement, elephant.

Introduction

Human-wildlife conflict (HWC) can be characterized as any interaction between humans and wildlife which negatively affects the human, the wildlife, or property. Human-Elephant conflict (HEC) is now one of the main problems elephant conservationists are facing (Enukwa, 2017). It has become a significant concern in the management field in India (Kushwaha et al., 1995). The Wild Asian Elephant (*Elephas maximus*) population is around 50,000 globally. Out of the global population of around 44,000-56,000 Asian elephants, India holds a major share, estimated at 29,964 (about 60% of the global population), of pachyderms (2017 census) (Chakraborty and Paul,2021).

The Indian elephant (*Elephas maximus indicus*) is classified as one of the three extant subspecies of the Asian elephant, endemic to continental Asia, that extend India, Bangladesh, Nepal, Bhutan, Myanmar, Thailand, Malay Archipelago, China, Laos, Cambodia and Vietnam. In India, a population of 27,312 wild elephants is present within a habitat of 109500 sq. km spread out into four geographical zones: northern, north-eastern, east-central and southern. About 70% of the pachyderm population resides in patchy forest fragments near human settlements with human density above 500 individuals/sq. km at certain sites (Chakraborty and Paul ,2021).

According to the IUCN Red List, the once extensively distributed Asian elephant in the Indian subcontinent has been classified as an "endangered" species. Elephants are megafauna. Often, encroachment on crop fields results in economic losses, as well as injuries and fatalities to humans. Elephants have coexisted with humans for centuries, but then there were fewer humans and more land, and therefore, more carrying capacity of habitats for elephants. Conflicts were known to be present in the past also due to agricultural damage and crop invasion (Wisumperuma, 2003). An estimated 28,000 elephants in the wild live in India, spread throughout an area of around 1,09,500 km2, or about 3 percent of the country's total surface area. Asian elephants lived in northern Chhattisgarh from prehistoric times (Kushwaha et al., 1995).

Nevertheless, they went extinct locally in the early 20th century (Singh, 2002). Elephants moved into Chhattisgarh from Jharkhand's major elephant habitat in 1988, causing significant harm to people and property. Due to migratory elephants wandering across the state, HEC has been rising ever since (Singh, 2002). According to estimates, there were 122 elephants in freedom in the state in 2007–2008 (MoEF, 2008). Deforestation, habitat degradation, heavy mining, and improved forest cover (44%) are the main causes of the elephants' extended stay in the state both Orissa and Jharkhand (Earth Matters Foundation, 2008; Singh, 2002; Thakur et al., 2015). The state of Chhattisgarh carries an elephant metapopulation that has grown its range from neighbouring Odisha and Jharkhand using passive dispersal since 2000 (Natarajan et al., 2023a; Nataranjan, 2025)

Causes

Most of the respondents were aware that the study area was experiencing an increase in the rate of forestry or habitat destruction of elephants due to cutting." This suggests that local populations are concerned about habitat loss, which may result in more human-elephant interactions. Among the various urgent problems about agriculture in the research region, wildlife, particularly elephants, posed a significant challenge." This demonstrates how elephants are seen as a danger to farming, which can intensify disputes as farmers try to

Safeguard their harvests (Thakur et al., 2016).

The competition between animals and humans for resources and land has grown significantly (Barnes, 1996; Kiiru, 1995; Tchamba, 1996; Thouless, 1994; Thouless & Sakwa, 1995). Agriculture has spread into areas formerly exclusively used by wildlife due to growing human populations and governmental or voluntary settlement initiatives, including laws enticing pastoralists to relocate. The remaining farmers are compelled to live in increasingly marginalized, fragile places, which leads to a greater loss

and degradation of habitat. Farmers are often under financial strain, leading to their susceptibility to the effects

Of crop-raiding (Nelson et al., 2003).

Elephants usually break down human settlements in pursuit of food and water, which frequently leads to direct clashes with people. In the process, they may ruin property, animals, or crops, or they may even murder people. The local community also kill the elephants in revenge. The majority of these disputes take place at areas along the forest margins, according to information collected during a field study of the HEC zones. These are the regions where agriculture and built-up areas have been expanding due to human invasion(Areendran et al., 2011).

Impact

In nations where elephants are found, human-elephant conflict is a key conservation problem since it presents significant challenges for both human societies and elephant populations. Numerous management techniques have been created to stop and lessen HEC. It does point out, though, that these tactics sometimes only offer temporary fixes and might unintentionally shift the dangers of violence from one region to another (Shaffer et al., 2019).

Human-elephant conflict (HEC) in Africa occurs wherever these two species coincide, and poses serious challenges to wildlife managers, local communities, and elephants alike." This indicates the extensive impacts of HEC on numerous groups involved in wildlife management and local communities. Up until a point at which elephants are completely excluded, crop raiding rises with increased settlement and cultivation. This line highlights how human endeavors, like farming, can intensify elephant-elephant conflicts and result in more crop damage. Farmers were getting low compensation for their damage (Sitati et al., 2003).

Elephants and farmers end up directly competing over limited space as a result. This struggle may result in increased conflicts and tensions between human societies and elephant populations. Farmers residing at these edges typically demand protection and compensation

From the government (Naughton et al., 1999).

Mitigation Strategies

The management of challenging individual elephants or herds in response to conflict situations through cultivation, culling, or translocation is covered in the study. These tactics are intended to mitigate the immediate harm that elephants represent to nearby populations.

Early warning and detection

In order to promote collaboration in chasing away potentially troublesome elephants, early identification and warning techniques for elephants include the use of mobile phones for rapid communication among farmers and local authorities (Graham et al., 2012). In order to identify and locate individuals over long distances, early warning systems may also include the installation of detectors at conflict-prone areas to track the infrasonic cries used by elephants (Venkataraman et al., 2005; Poshitha et al., 2015; Zeppelzauer et al., 2015).

Deterrents based on light

To protect maturing crops and ward off elephant raids, farmers may use spotlights, burning torches, and bonfires (Nyhus et al., 2000; Fernando et al., 2005; Shaffer, 2010; Davies et al., 2011). Although solar spotlights, which are shone in elephants' eyes to deter them from agricultural fields, have been tested in small quantities for communal fields, low-income rural households and communities are unable to widely adopt them due to the high initial purchase costs (Davies et al., 2011; Gunaryadi et al., 2017).

Similar to acoustic techniques, light-based deterrents are temporary fixes that eventually lose their impact when elephants become used to them or relocate (Sukumar, 1991, 1992; Shaffer et al., 2019).

Trenches and electric fences

Elephants are often kept out of farms and human towns by using physical exclusion techniques like electric fences and trenches. Larger-scale implementation of these physical barriers is hampered by the high expenses of construction and ongoing maintenance, particularly in areas that are fragmented and have a high frontage of farms or forests (Kioko et al., 2008; Perera, 2009; Wijayagunawardane et al., 2016; Shaffer et al., 2019).

Methodology

Study area: Farsabahar Block

Farsabahar is a block in northeastern Chhattisgarh's Jashpur district, which lies between the borders of Odisha and Jharkhand. In addition to its rich vegetation and undulating terrain, this area is known for its indigenous people, which mostly depends on agricultural and forestbased incomes. The block comprises farmed plains, open forests, and deep woods, creating a mosaic ecosystem where people and nature live side by side.

Geographical Background

A transitional area located between the Chota Nagpur Plateau and the Central Indian Forest zone is where Farsabahar (Lat LONG/Coordinates) is situated. While the rich plains and slopes are heavily used for rice, maize, and other seasonal crops, the deep sal and mixed deciduous woods provide the perfect habitat for wild elephants. Little physical barriers often separate elephant transit routes and human settlements, and the communities are often found in or close to wooded regions. The likelihood

of encounters is naturally increased by this close proximity, particularly during harvest seasons when crops draw elephants seeking easy food.

The block's terrain, which consists of tiny valleys, seasonal rivers, and wooded hills, affects elephant migration patterns and frequently takes them straight past areas where people predominate. Additionally, continuous deforestation for infrastructure, mining, and agriculture.

Ecological Significance

Farsabahar holds substantial ecological importance as it forms a key migratory route for Asian elephants (Elephas maximus). These corridors allow elephants to move seasonally between larger forested areas in Chhattisgarh, Jharkhand, and Odisha. The uninterrupted movement of elephants through these pathways is essential for maintaining their genetic diversity, ensuring access to vital resources, and supporting the long-term survival of the species.

Growing human encroachment and changes in land use have severely degraded and fragmented elephant corridors, making it harder for elephants to reach their usual food and water sources. As a result, elephants are increasingly entering villages, leading to conflicts such as crop raiding, destruction of property, and sometimes fatal encounters between people and elephants. In Farsabahar, these incidents peak during the monsoon and post-monsoon seasons when ripe crops lure elephants from nearby forests, causing significant financial losses for small-scale farmers who rely on a single harvest. This recurring hardship fuels resentment toward wildlife and conservation authorities, making it more difficult to implement lasting solution.

Data collection:

Fieldwork was carried out in communities classified as conflict-prone following consultations with the Forest Department and public. These settlements were chosen to reflect a range of geographical and socioeconomic situations in the Farsabahar block.

A. Semi-structured interviews were held with farmers, village elders, women, and local panchayat members.

B. Respondents were asked about the frequency and timing of elephant visits, the type and quantity of damage, movement patterns, and their impressions of the forest department's response.

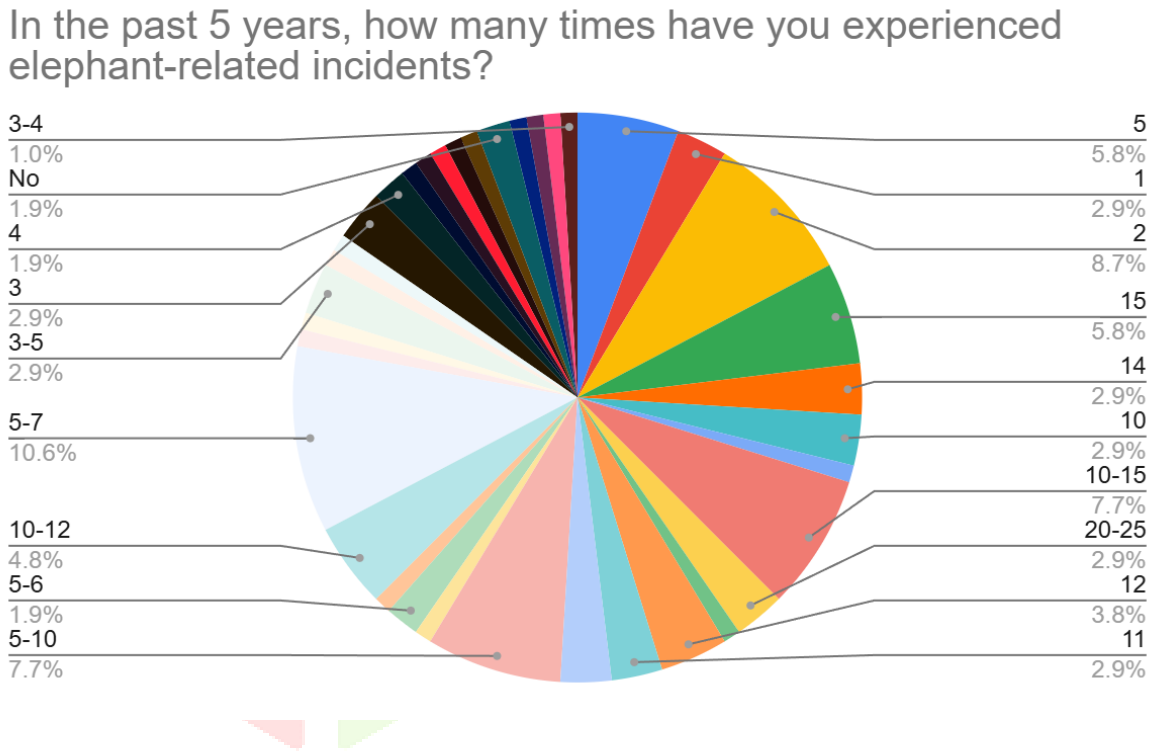
C. A total of 100 individual interviews were conducted to gather a diverse variety of experiences and viewpoints.

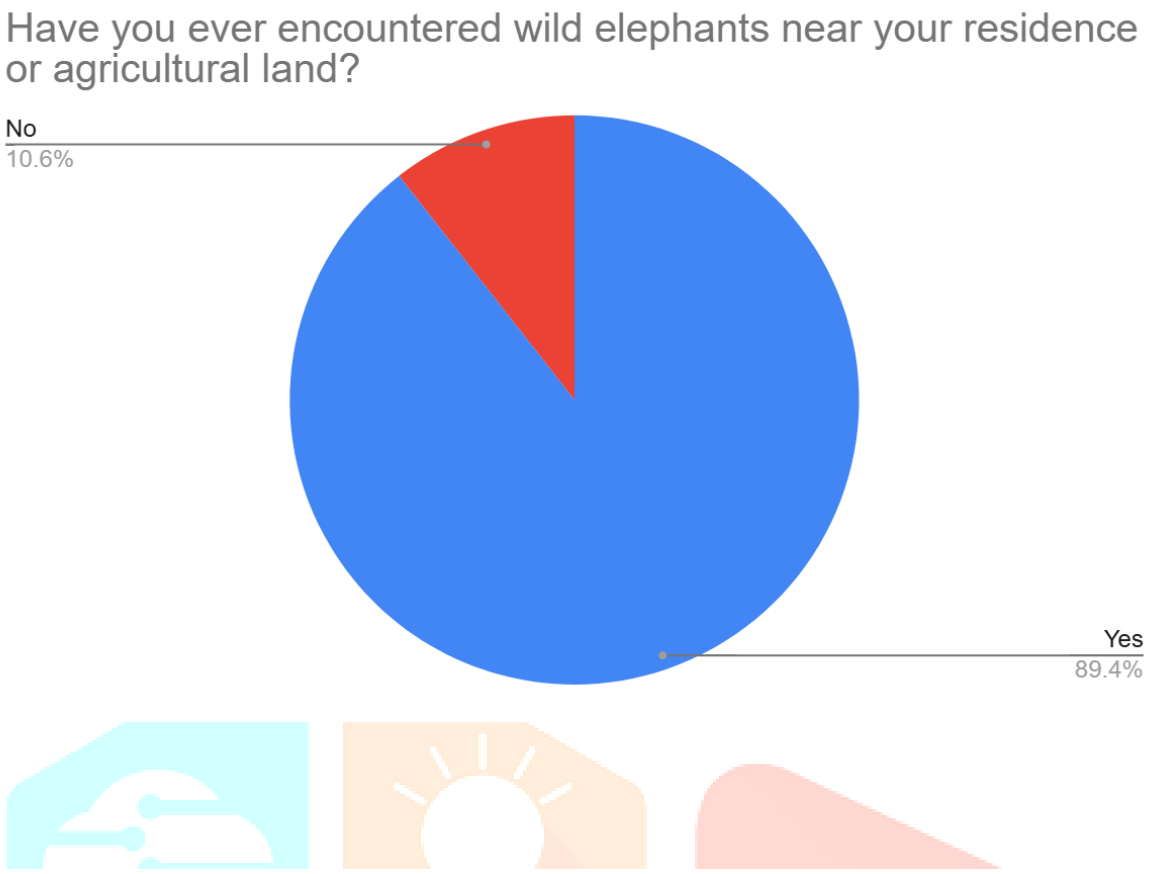
These interviews assisted in gathering firsthand reports of conflict situations, as well as local knowledge of elephant behavior, migration patterns, and community-level coping techniques. The

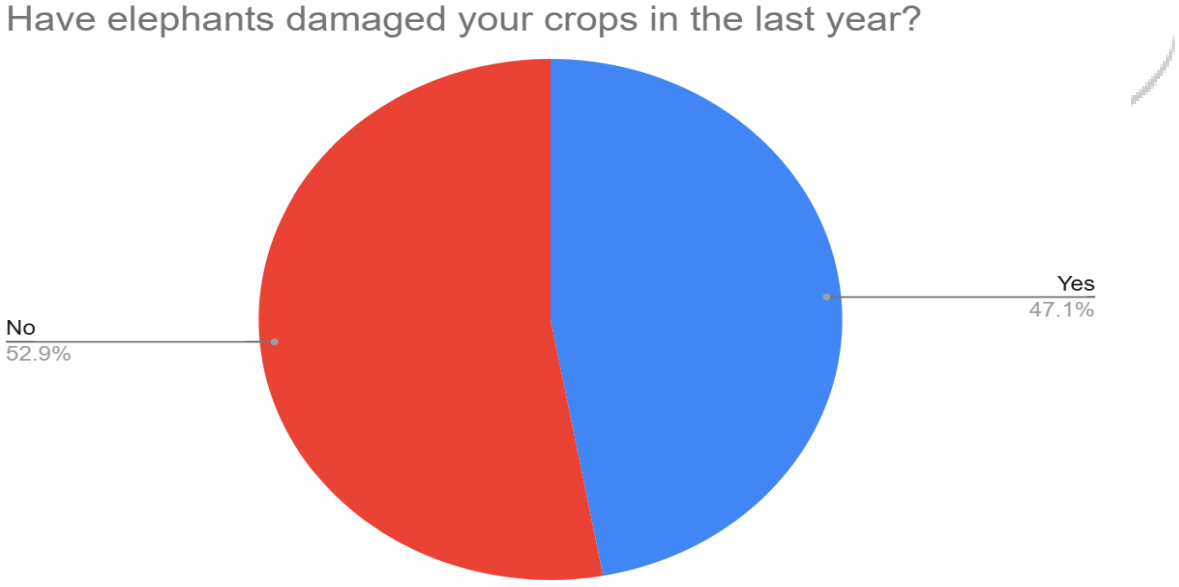
interviewees also indicated emotional and psychological effects, such as dread, sleep deprivation, and trauma caused by elephant raids at night.

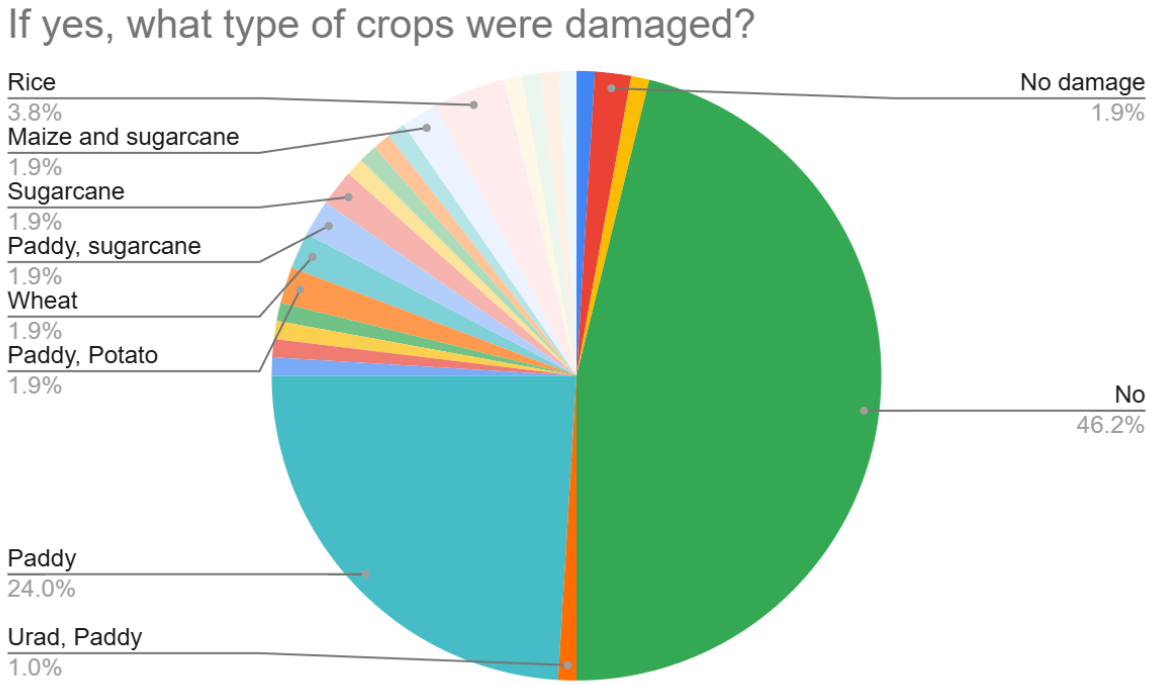
Result and discussion

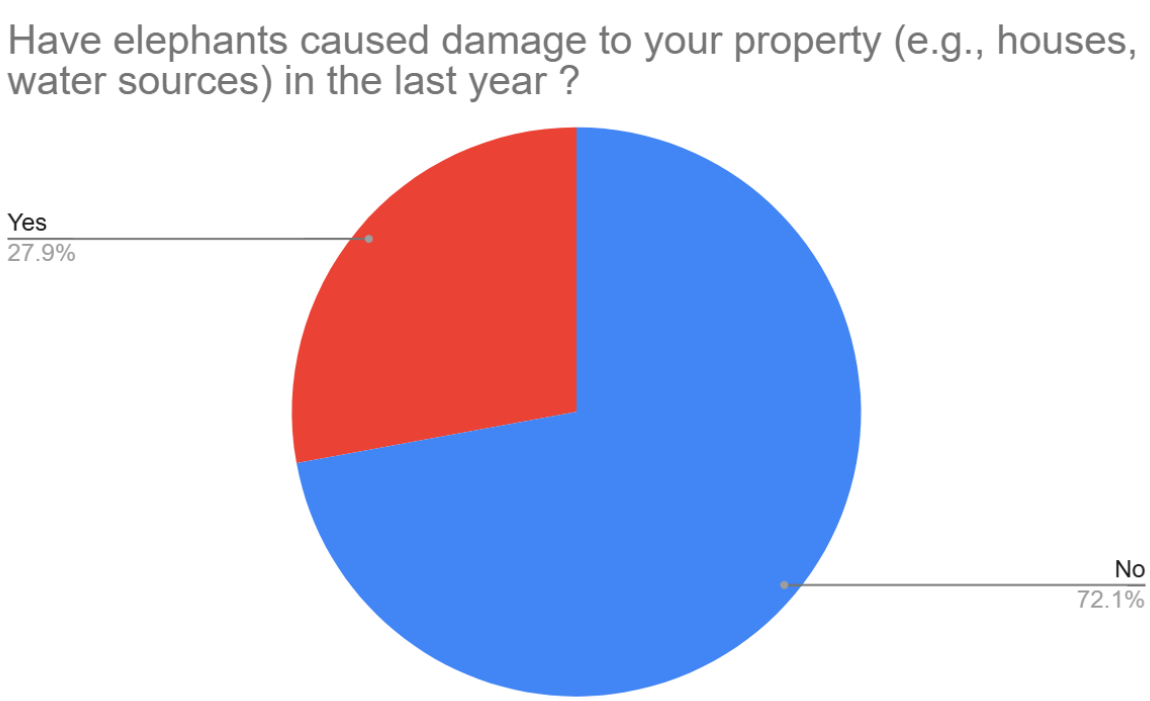
The study's findings offer important new information on the trends and causes of conflict between humans and elephants in the area. We determine important conflict locations, seasonal patterns, and the fundamental causes of human-elephant interactions by examining recorded occurrences, geographical data, and community viewpoints. These results guide the creation of focused, long-term management plans meant to lessen hostilities and encourage harmony between local inhabitants and elephants.

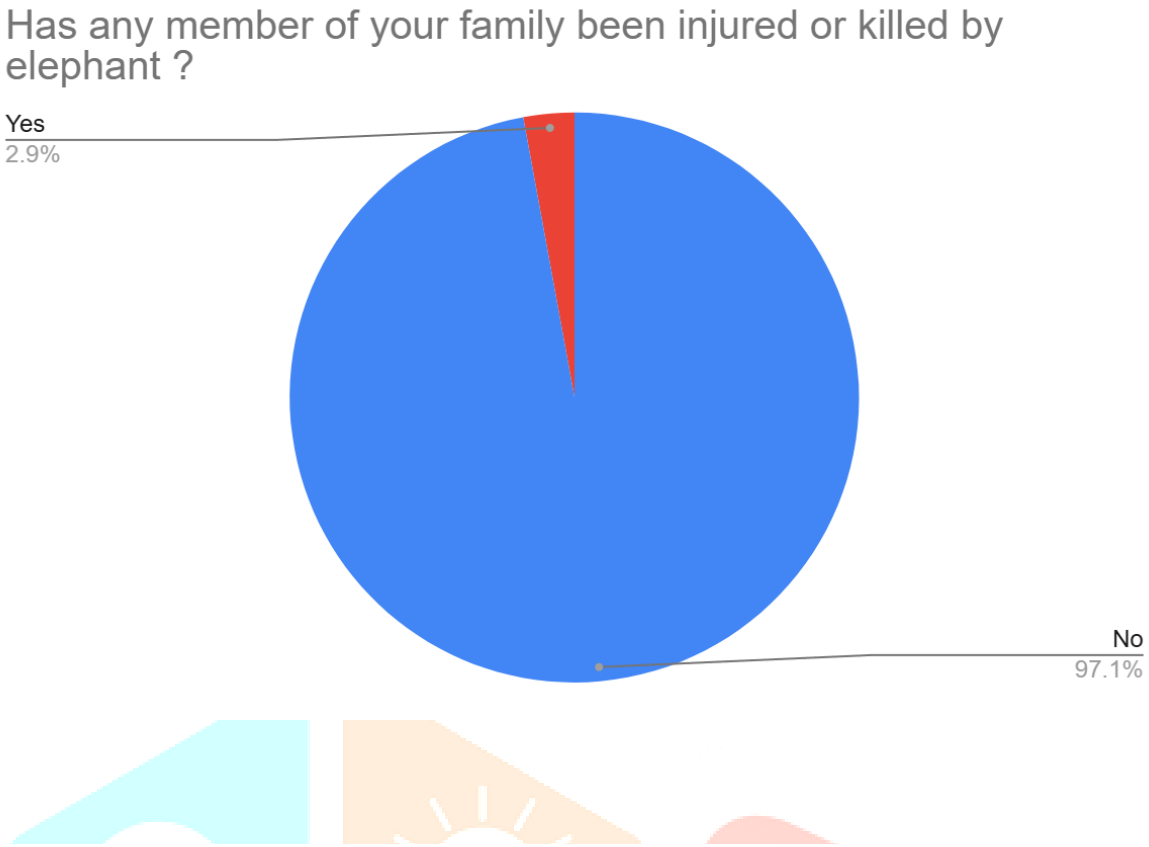


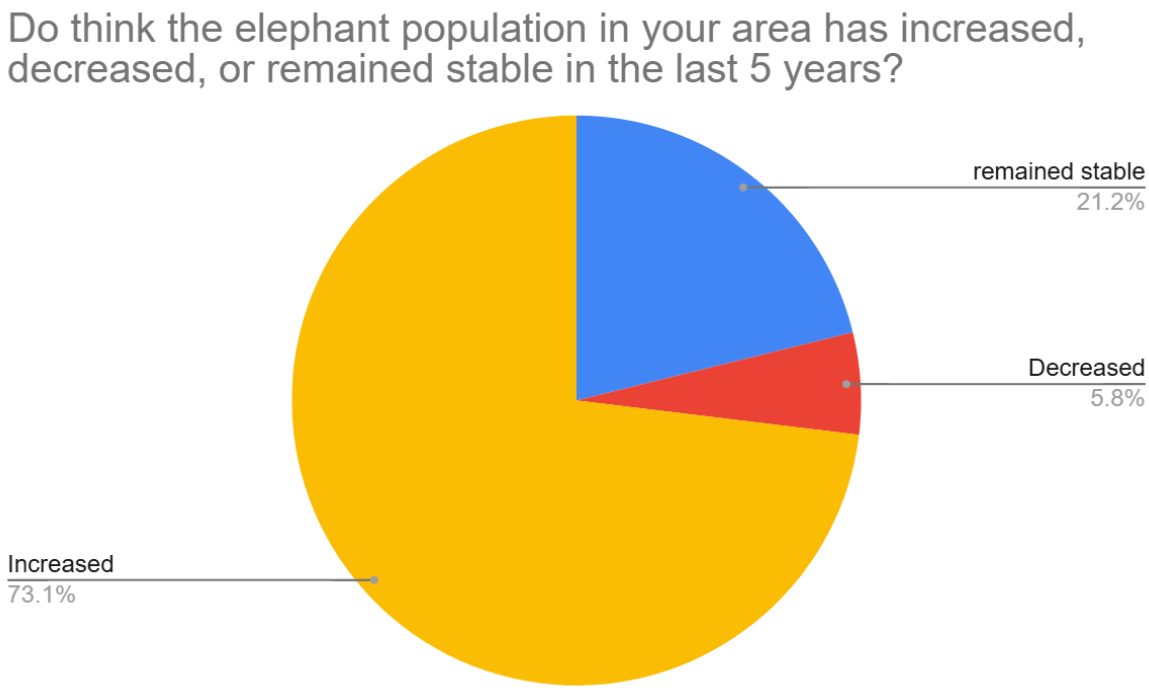

Have you ever encountered wild elephants near your residence or agricultural land?
No
10.6%
Yes
89.4%

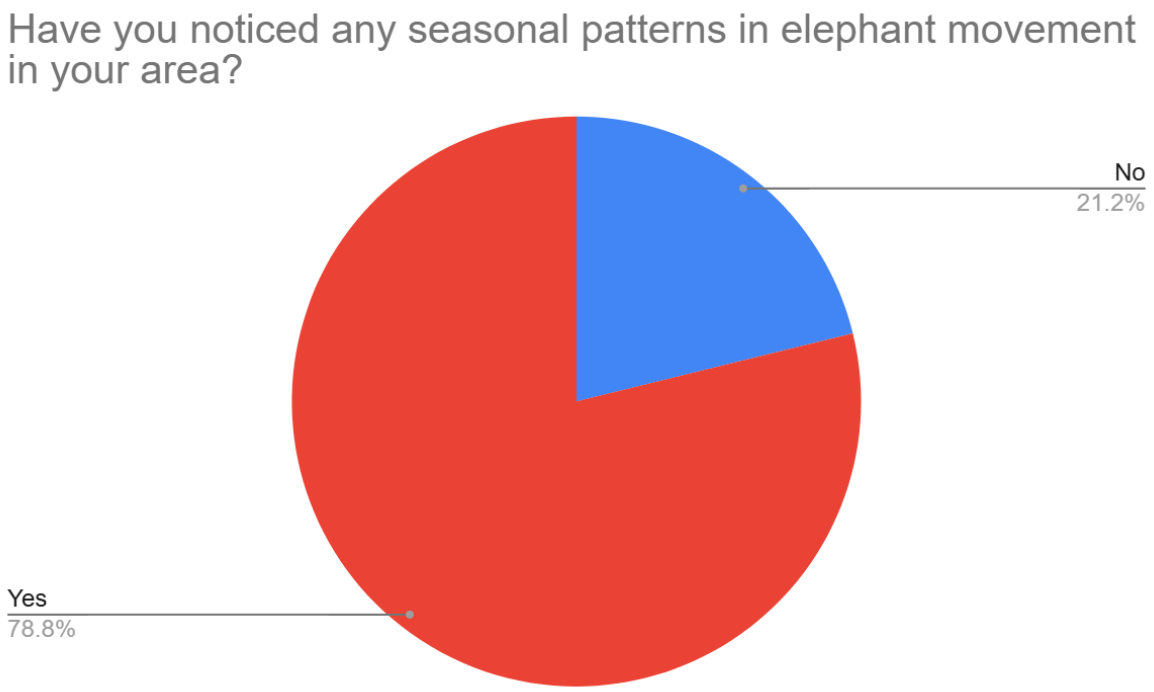

Have elephants damaged your crops in the last year?
Yes
47.1%
No
52.9%


If yes, what type of crops were damaged?
Rice
3.8%
Maize and sugarcane
1.9%
Sugarcane
1.9%
Paddy, sugarcane
1.9%
Wheat
1.9%
Paddy, Potato
1.9%
Paddy
24.0%
Urad, Paddy
1.0%
No damage
1.9%
No
46.2%


Have elephants caused damage to your property (e.g., houses, water sources) in the last year ?
Yes
27.9%
No
72.1%


Has any member of your family been injured or killed by elephant ?
Yes
2.9%
No
97.1%


Do think the elephant population in your area has increased, decreased, or remained stable in the last 5 years?
remained stable
21.2%
Decreased
5.8%
Increased
73.1%



Everyday activities, including as employment, education, and access to woods for forest products, are being disrupted by elephants, which are producing widespread anxiety. Crop field damage results in financial loss and deters farming. Because individuals are unable to travel freely, social life is impacted and homelessness is widespread. At night, dread and worry continue, and children's schooling is interrupted. To avoid coming into contact with elephants, some people have moved to safer locations.

There are various forest areas in the village of Farsabahar block, including Junwain, Pureinbandh, Sako, Ankira, Baro, Bartoli, Kandaibahar, Babusajbahar, Samdama, Jamuna, Bandrinacha, Sarhora jungle, Karibahar, Siharjori jungle, Lidhurpur, Baluabahar, Ghumra, Sikirma, Kotaibira, Bartoli Forest, and Perwa ara.

The are various strategies for preserving elephants, including setting up lighting, trenches, electric fences, and conserving forests. It also encourages peaceful driving away and being aware of surroundings. The text also mentions the importance of sharing information with elephant friend groups.

Letting elephants eat crops out of respect or fear.
Use of bonfires and burning tyres.

Elephants lose their habitat due to deforestation, which forces them to visit settlements in search of food and water. A shortage of food and water is frequently the result of human activity, like the chopping down of trees for jackfruit and mahua. The loss of space is exacerbated by ignorance and inappropriate conduct toward elephants. Elephants also have to deal with problems like fire, logging, and a shortage of power in addition to deforestation. When water is accessible during rainy seasons, it frequently penetrates settlements, causing damage to property and other problems. Elephants' natural environment is being disturbed and their habitat is being lost as a result of people's ignorance. Addressing these problems and fostering an atmosphere that is calm for elephants is therefore essential.

Crop production patterns have changed as a result of the growing usage of tractor threshers and electrical wires. Rice is currently grown by farmers on their property before being moved to the field. However, because elephants are prohibited from entering the region, agricultural cultivation has not improved much. Additionally, fewer Urad and paddy plantations have been established as a result of the usage of thresher machines and tractors, which has increased damage to crops and cattle.

In order to stop elephants from hurting people, awareness is essential. It entails making room for elephants, planting new trees, and fostering tranquil surroundings. Elephants can be discouraged by constructing pakka huts and giving them room. Governments have to install solar panels for electricity during the rainy seasons and electrical facilities in forested regions.
Creating distinct spaces and supplying utilities like electricity can also be beneficial.
Conflicts can be lessened by raising people's awareness and encouraging fearlessness. Governments ought to put mitigating measures into place, such giving elephants room, planting trees, and preventing disruptions. Reforestation and space provision can also be beneficial. Governments ought to support a tranquil environment for elephants and supply energy. We may contribute to elephant conservation and guarantee a sustainable future by being conscious of our surroundings and using mitigating techniques.

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The peak period is from June to November. July, August, September, and October are the months mentioned most often. Some responses indicate presence "all 12 months," but the majority specify the rainy and post-rainy season (June-November).

Religious Reverence: Many people consider elephants as gods or divine beings (often associated with Lord Ganesh) and worship them. Common phrases: "Considered God," "We worship them," "Ganesh pujan," "Dewta mante," "Hathi Devta hai uski Puja hoti hai. No Special Beliefs: Several responses indicate that there are no special beliefs or rituals related to elephants ("No," "Nil").

Fig1: Survey

Fig 2: Mitigation Strategies:making lakes for elephant

Conclusion

The complex link between human activity and the protection of endangered Asian elephants is revealed by the study of conflicts between humans and elephant in the Farsabahar region of Chhattisgarh. Ecological, psychological, and economic effects have resulted through increased encounters caused by rapid habitat loss, fragmentation, and agricultural expansion into historic elephant corridors. The issue is made worse by inadequate mitigation efforts, inadequate compensation, and elephants' adaptability to temporary deterrents. Crop raiding, property destruction, and sporadic fatalities are revealed via interviews with local residents, especially during harvest season.

These occurrences make long-term cooperation more difficult by threatening the livelihoods of small-scale farmers and fostering animosity against wildlife authorities and conservation efforts. For low-income rural populations, mitigation techniques like physical barriers and early warning systems are frequently insufficient. According to the report, community-based, integrated strategies are needed to support and encourage sustainable land-use planning, enhance compensation, and restore and safeguard elephant corridors. Elephant survival in conflict-prone areas requires a complete strategy that protects livelihoods and public safety.

Reference

1. Enukwa, E. H. (2017). Human-elephant conflict mitigation methods: A review of effectiveness and sustainability. *Journal of Wildlife and Biodiversity*, *1*(2), 69-78.
2. Nelson, A., Bidwell, P., & Sillero-Zubiri, C. (2003). A review of human-elephant conflict management strategies. *People & Wildlife, A Wildlife Conservation Research Unit, Born Free Foundation Partnership*.
3. Sajla, J. F., & Famees, M. F. (2022). Human-elephant conflict: challenges in the agriculture Sector in Polonnaruwa district; A study based on literature review. *Sri Lanka Journal of Social Sciences and Humanities*, *2*(1).
4. Chakraborty, S., & Nabanita, P. A. U. L. (2021). Efficacy of different human-elephant conflict prevention and mitigation techniques practiced in West Bengal, India. *Notulae Scientia Biologicae*, *13*(3), 11017-11017.
5. Thakur, A. K., Yadav, D. K., & Jhariya, M. K. (2016). Feeding behaviour and pugmark analysis of elephants in Sarguja, Chhattisgarh. *Journal of Applied & Natural Science*, *8*(4).
6. Kangwana, K. (1995). Human-elephant conflict: the challenge ahead. *Pachyderm*, *19*, 14-14.
7. Areendran, G., Krishna Raj, K. R., Sraboni Mazumdar, S. M., Madhushree Munsi, M. M., Himanshu Govil, H. G., & Sen, P. K. (2011). Geospatial modeling to assess elephant habitat suitability and corridors in northern Chhattisgarh, India.
8. Doyle, S., Groo, M., Sampson, C., Songer, M., Jones, M., & Leimgruber, P. (2010). Human-elephant conflict–What can we learn from the news? *Gajah*, *32*, 14-20.
9. Thakur, A. K., Yadav, D. K., & Jhariya, M. K. (2015). Human-elephant conflict scenario in corridors of Northern Chhattisgarh. *Journal of Plant Development Sciences*, *7*(11), 821-825.

10. Natarajan, L., Nigam, P. A. R. A. G., & Pandav, B. Human–elephant conflict in expanding Asian elephant range in east-central India: implications for conservation and management. *Oryx*, 1-9.
11. Sitati, N. W., Walpole, M. J., Smith, R. J., & Leader-Williams, N. (2003). Predicting spatial aspects of human–elephant conflict. *Journal of Applied Ecology*, *40*(4), 667-677.
12. Perera, B. M. A. O. (2009). The human-elephant conflict: A review of current status and mitigation methods. *Gajah*, *30*(2009), 41-52.
13. Palei, N. C., Palei, H. S., Singh, L. A. K., & Sahu, H. K. (2017). Troublesome visitors: Human-Elephant conflict by elephants coming into Odisha from Chhattisgarh. *Gajah*, *47*, 36-39.
14. Gubbi, S. (2012). Patterns and correlates of human–elephant conflict around a south Indian reserve. *Biological Conservation*, *148*(1), 88-95.
15. Jadhav, S., & Barua, M. (2012). The Elephant Vanishes: Impact of human–elephant conflict on people's wellbeing. *Health & place*, *18*(6), 1356-1365.
16. Naughton, L., Rose, R., & Treves, A. (1999). The social dimensions of human-elephant conflict in Africa: A literature review and case studies from Uganda and Cameroon. *A Report to the African Elephant Specialist Group, Human-Elephant Conflict Task Force, IUCN, Gland, Switzerland*.
17. Chakraborty, S. (2022, September). Trends and patterns of elephant conservation management and human elephant conflict scenario in forests of Northern West Bengal, India. In *Proceedings of the Zoological Society* (Vol. 75, No. 3, pp. 319-332). New Delhi: Springer India.
18. Shaffer, L. J., Khadka, K. K., Van Den Hoek, J., & Naithani, K. J. (2019). Human-elephant conflict: A review of current management strategies and future directions. *Frontiers in Ecology and Evolution*, *6*, 235.