AD EDUXIAN JOURNAL
A Quarterly Multidisciplinary Blind Peer Reviewed & Refereed Online International Journal
Google Scholar Indexing *PIF: 1.048(I2OR), 3.125 (IIFS) & 3.8(SJIF)*
Vol (3), Issue (3), July-September 2026 ***ISSN: 3048-7951***

Man–Animal Conflict Due to Biodiversity Loss in the Terai Region of Uttar Pradesh: A Geographical Study of Lakhimpur Kheri and Bahraich

Dr. Birendra Kumar Yadav[1]

DOI: http://doi.org/10.5281/zenodo.23992040

Review: 25/09/2026 **Acceptance: 29/09/2026** **Publication:28/10/2026**

Abstract

Man–animal conflict, more commonly termed human–wildlife conflict, has become a major challenge for biodiversity conservation and rural development in the Terai region of Uttar Pradesh. Lakhimpur Kheri and Bahraich are particularly important because they contain internationally significant Terai ecosystems, protected forests, wetlands, grasslands, agricultural landscapes, and wildlife corridors connected to Nepal. The close proximity of wildlife habitats to cultivated fields and settlements creates opportunities for human–wildlife encounters, sometimes resulting in crop damage, livestock losses, human injuries, fatalities, and retaliatory harm to wildlife. Biodiversity loss, habitat fragmentation, agricultural expansion, infrastructure development, changing resource availability, and poorly planned land use can intensify these pressures, although conflict varies by species and location. This paper examines the ecological and geographical relationship between biodiversity change and human–wildlife conflict, with particular reference to Dudhwa National Park, Kishanpur Wildlife Sanctuary, and Katarniaghat Wildlife Sanctuary. It adopts a qualitative, descriptive, and analytical methodology based on published research, conservation reports, and government sources. The paper also proposes a GIS and remote-sensing framework for identifying potential conflict hotspots and prioritising interventions. It argues that sustainable management requires habitat and corridor conservation, community participation, reliable early-warning systems, safe agricultural practices, fair compensation, and coordinated landscape planning. The study concludes that the long-term objective should be to reduce harmful encounters while protecting biodiversity and safeguarding the livelihoods of communities living in the Terai landscape.

Keywords: Human–wildlife conflict, biodiversity loss, Terai, Lakhimpur Kheri, Bahraich, Dudhwa Tiger Reserve, habitat fragmentation, GIS, wildlife conservation, sustainable development.

1. Introduction

Biodiversity is essential to ecological stability and human well-being. It supports food production, soil fertility, pollination, water regulation, nutrient cycling, and the resilience of natural ecosystems. Forests, grasslands, wetlands, and riverine habitats also provide food, shelter, and breeding grounds for wildlife. However, land-use change, habitat destruction, pollution, overexploitation, invasive alien species, and climate change are placing increasing pressure on biodiversity worldwide (IPBES, 2019). One important consequence of changes in natural ecosystems is the emergence or intensification of conflict between humans and wildlife. Human–wildlife conflict occurs when interactions between people and wild animals produce negative consequences for human safety, livelihoods, and property, wildlife, or conservation objectives. It includes crop raiding, livestock predation, property damage, dangerous encounters, and the killing or injury of animals in retaliation. The relationship between biodiversity loss and conflict is complex. When natural habitats are degraded or fragmented, some animals may lose access to food, shelter, water, or traditional movement routes. They may then enter agricultural

[1] Assistant Professor, Department of Geography, Baiswara Degree College, Lalganj-Raebareli, Uttar Pradesh, India

fields, villages, and other human-dominated landscapes. At the same time, attractive crops, livestock, open waste, and accessible water sources may draw wildlife towards human settlements even when natural habitat remains available.

Consequently, conflict cannot be attributed to biodiversity loss alone; it must be understood in relation to land use, species behaviour, human exposure, and local management practices (Nyhus, 2016). The Terai region of Uttar Pradesh provides an important geographical setting for investigating these relationships. Lakhimpur Kheri contains Dudhwa National Park and Kishanpur Wildlife Sanctuary, while Bahraich contains Katarniaghat Wildlife Sanctuary. These protected areas form part of the wider Dudhwa Tiger Reserve landscape, which includes adjoining forest divisions and ecological connections extending towards Nepal. The landscape consists of alluvial plains, moist forests, grasslands, wetlands, rivers, agricultural fields, and settlements.

The region is also important for agriculture and rural livelihoods. Cultivated fields, livestock, forest resources, transport networks, and expanding settlements coexist with wildlife habitats. This creates a landscape in which conservation and human development are closely interconnected. Research on tiger interactions in the Dudhwa–Pilibhit landscape has demonstrated that incidents can occur in both forest environments and agricultural fields, particularly sugarcane, highlighting the importance of the broader landscape rather than protected-area boundaries alone (Chatterjee et al., 2022).

Against this background, the present paper examines the relationship between biodiversity loss and human–wildlife conflict in Lakhimpur Kheri and Bahraich. It focuses on the ecological drivers, geographical distribution, socioeconomic consequences, and potential management strategies relevant to the Terai landscape.

2. Objectives and Research Methodology

2.1 Objectives

The study has four principal objectives:

1. To examine the relationship between biodiversity loss, habitat fragmentation, and human–wildlife conflict in the Terai region of Uttar Pradesh.
2. To analyse the geographical and socioeconomic dimensions of conflict in Lakhimpur Kheri and Bahraich.
3. To evaluate the potential of biodiversity conservation, community participation, and geospatial technologies for conflict mitigation.
4. To propose sustainable management strategies that balance wildlife conservation with rural livelihoods and human safety.

2.2 Research Methodology

The paper adopts a qualitative, descriptive, and analytical methodology based on secondary sources. These include peer-reviewed research, official conservation documents, government publications, and international literature on biodiversity and human–wildlife conflict. The regional analysis focuses on Dudhwa National Park, Kishanpur Wildlife Sanctuary, Katarniaghat Wildlife Sanctuary, and their surrounding agricultural and settlement landscapes. The literature is examined thematically under five broad categories: ecological change, land-use

patterns, conflict-related impacts, management interventions, and policy priorities. Regional findings are interpreted in relation to the geographical characteristics of the Terai.

The paper does not claim to present original household surveys, newly collected incident records, or independently calculated forest-cover statistics. Its regional assessment is therefore literature-based. The GIS framework proposed later in the paper represents a method for future empirical research rather than a completed hotspot analysis.

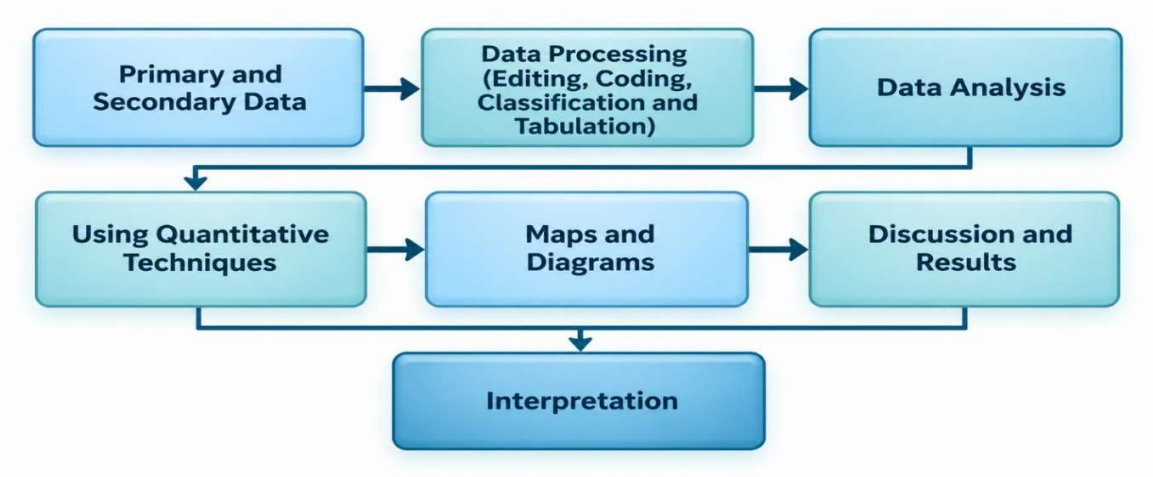


Figure 1. Research Methodology for Analysing Human–Wildlife Conflict in the Terai Region

3. Biodiversity Loss and the Ecological Drivers of Human–Wildlife Conflict

3.1 Habitat Destruction and Fragmentation

Habitat destruction occurs when forests, grasslands, wetlands, and other natural ecosystems are converted into agricultural land, settlements, industrial areas, or infrastructure. Habitat fragmentation divides formerly connected ecosystems into smaller and more isolated patches. In the Terai, the ecological relationship between protected forests and surrounding land uses is especially important. Wildlife may move between forest patches, grasslands, wetlands, and seasonal feeding areas. Roads, railways, canals, settlements, and agricultural expansion can interrupt these movements or increase the risks associated with crossing human-dominated areas.

Fragmentation does not necessarily cause every species to enter settlements. Some species decline when habitats are lost, while others adapt to agricultural environments. Nevertheless, when habitat change overlaps with attractive crops and high human activity, the probability of harmful encounters may increase. Research from the Dudhwa–Pilibhit landscape supports the importance of understanding human–tiger interactions within a mosaic of forests, agriculture, and settlements (Chatterjee et al., 2022).

3.2 Declining Natural Resources and Changing Animal Behaviour

Wild animals depend on suitable food, water, shelter, and breeding habitats. Changes in vegetation, water availability, prey abundance, and seasonal conditions may influence their movement and feeding behaviour.

For example, cultivated crops can offer accessible food for herbivores, while sugarcane fields may provide cover for certain mammals, including large carnivores. Livestock can become vulnerable where grazing areas overlap with wildlife habitats or enclosures are inadequate.

These interactions should not automatically be interpreted as evidence that wildlife has run out of food in forests. Animal movement may also reflect seasonal behaviour, crop availability, historical routes, and the configuration of the surrounding landscape. Effective management must therefore identify the specific factors operating at each location.

3.3 Agricultural Expansion and Settlement Growth

Agriculture is a major component of the Terai economy. However, agricultural expansion near forest edges can increase the overlap between human activity and wildlife movement. Crop harvesting, grazing, irrigation, and the collection of forest resources may bring people into locations used by wild animals. Settlement growth can also increase human exposure, especially where new houses, roads, or community facilities are developed near wildlife corridors. The resulting risk depends not only on the distance from forests but also on vegetation cover, animal behaviour, time of day, and the activities people undertake.

3.4 Climate Variability and Water Availability

Changes in rainfall, drought conditions, flooding, and water availability can alter habitat quality and animal movement. Floods may temporarily displace wildlife from low-lying areas, while dry periods may change the availability of water and forage. Such conditions can influence encounters in particular landscapes. However, climate variability should be treated as an interacting factor rather than a universal explanation. The scale and severity of conflict also depend on habitat structure, infrastructure, agricultural practices, and the presence of safe movement routes.

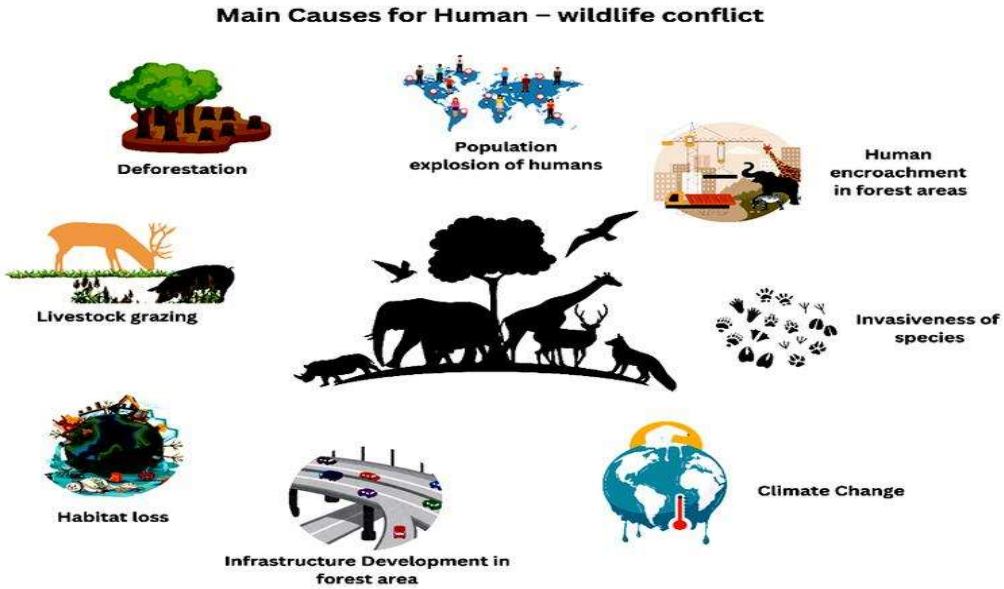


Figure 2. Conceptual Relationship Between Biodiversity Loss and Human–Wildlife Conflict.

4. Geographical Setting: Lakhimpur Kheri and Bahraich

4.1 Lakhimpur Kheri: Dudhwa National Park and Kishanpur Wildlife Sanctuary

Lakhimpur Kheri is an important district for wildlife conservation in the Terai region of Uttar Pradesh. Dudhwa National Park and Kishanpur Wildlife Sanctuary are major components of the wider Dudhwa Tiger Reserve. The landscape includes moist forests, grasslands, wetlands, river channels, agricultural fields, and rural settlements. The National Tiger Conservation Authority describes Dudhwa Tiger Reserve as including Dudhwa National Park, Kishanpur and Katarniaghat wildlife sanctuaries, and adjoining forest divisions. The proximity of agricultural land to natural vegetation creates several potential forms of human–wildlife interaction. People may encounter wildlife while cultivating fields, harvesting crops, collecting forest products, or moving livestock. Crop damage and livestock predation can impose financial costs, while encounters with large carnivores may create serious safety concerns.

Research by Chatterjee et al. (2022) examined 118 negative human–tiger interactions involving human victims across the Dudhwa–Pilibhit landscape during 2003–2018. Of the recorded incidents, 51 (43.2%) occurred in agricultural fields, primarily sugarcane, and 53 (44.9%) occurred inside forests. The study reported that 87 incidents resulted in human deaths. These figures refer to the study's combined landscape and historical period; they should not be presented as current totals for Lakhimpur Kheri alone. The findings illustrate an important geographical point: conflict may occur beyond the boundaries of protected forests. Agricultural fields can form part of the functional landscape used by wildlife, particularly where crops provide cover or where farms intersect with movement routes. Consequently, management should include surrounding villages, forest edges, agricultural fields, and transport infrastructure rather than concentrating exclusively on protected areas. Priority measures for Lakhimpur Kheri include identifying locations of recurring encounters, protecting important habitat connections, improving communication between forest officials and villages, and promoting safer agricultural practices. Any intervention should be based on verified local evidence and should avoid creating new risks for wildlife or neighbouring communities.

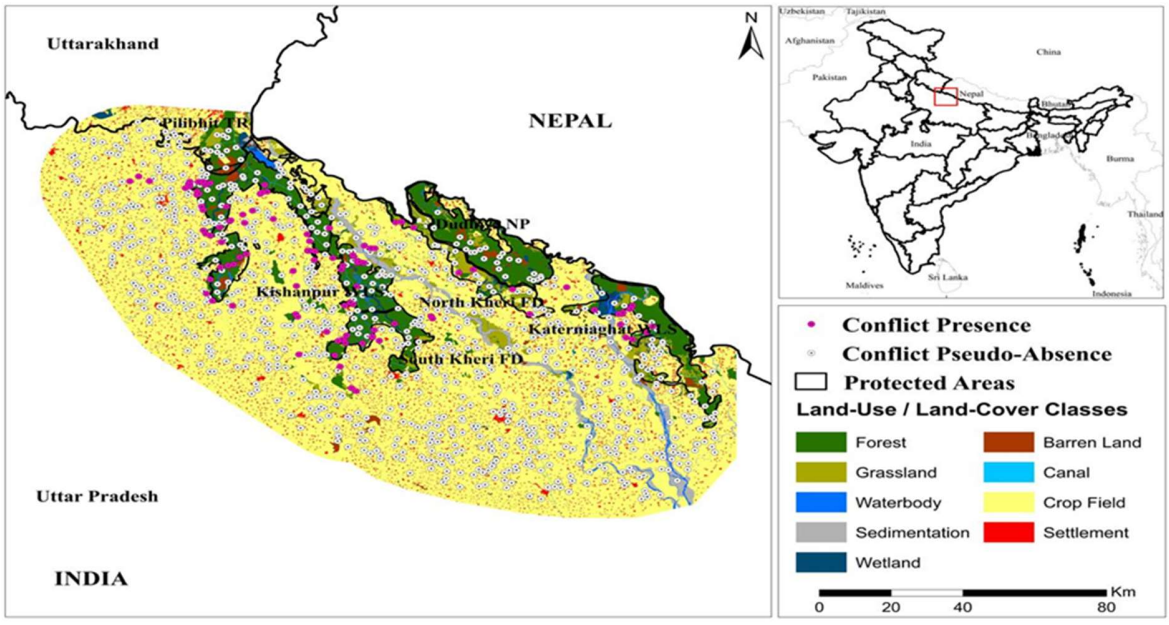


Figure.3 Location Map of the Study area

4.2 Bahraich: Katarniaghat Wildlife Sanctuary and the Terai–Girwa Landscape

Bahraich is equally significant because it contains Katarniaghat Wildlife Sanctuary, a protected area associated with forests, grasslands, wetlands, and riverine habitats. According to the district administration, the sanctuary covers approximately 400.6 square kilometres and forms part of the Dudhwa Tiger Reserve. Its geographical position near Nepal also makes it important for wildlife connectivity across the international boundary. The Terai–Girwa landscape supports biodiversity while sustaining agricultural livelihoods and rural settlements. The proximity of cultivated fields, villages, livestock, and natural habitats can create opportunities for conflict, although the species involved and the intensity of risk vary by location.

Bahraich also demonstrates why human–wildlife conflict should not be understood exclusively through the effects of habitat loss. During 2024, attacks attributed to wolves on the Ghaghara floodplain received substantial public attention. A regional review published in 2026 reports a series of wolf attacks during March–September 2024. This episode illustrates the importance of investigating species behaviour, seasonal conditions, settlement patterns, and human exposure alongside broader biodiversity change. It does not, by itself, establish that biodiversity loss caused those attacks.

The district's management priorities should include protecting riverine and forest habitats, mapping animal movement and recurring incident locations, improving village-level warnings, and ensuring rapid professional responses to dangerous encounters. Coordination between the Forest Department, local administration, health services, and affected communities is essential. Because wildlife can move across administrative and national boundaries, conservation planning should also recognise the connectivity between Katarniaghat, Dudhwa, and protected habitats in Nepal. Protecting these connections can support wildlife conservation while helping planners identify locations where safer land-use arrangements are needed?

4.3 Comparative Geographical Analysis

Table 1. Comparison of Human–Wildlife Conflict Contexts in Lakhimpur Kheri and Bahraich

Dimension	Lakhimpur Kheri	Bahraich
Major conservation areas	Dudhwa National Park and Kishanpur Wildlife Sanctuary	Katarniaghat Wildlife Sanctuary
Landscape characteristics	Moist forests, grasslands, wetlands, agriculture, settlements	Forests, riverine habitats, wetlands, agriculture, settlements
Relevant conflict settings	Forest edges, sugarcane fields, agricultural areas, village surroundings	Forest margins, riverine areas, agricultural fields, village surroundings
Main research priorities	Tiger interactions, crop and livestock losses, habitat connectivity	Species-specific incident patterns, crop and livestock losses, riverine connectivity
Spatial planning priority	Map forest–agriculture interfaces and movement routes	Map forest–river–settlement interfaces and movement routes
Management emphasis	Community alerts, safe agricultural practices, habitat connections	Community alerts, rapid response, habitat protection and coordination

Source: Author's synthesis of official conservation descriptions and published research. The table is qualitative and does not rank the districts by conflict severity.

The comparison suggests that both districts require landscape-based management, but their interventions should reflect local conditions. Lakhimpur Kheri's research agenda should pay particular attention to the interaction between protected forests and agricultural fields, while Bahraich requires a detailed understanding of the relationship between Katarniaghat, riverine habitats, settlements, and species-specific conflict patterns.

5. Major Forms and Consequences of Human–Wildlife Conflict

5.1 Crop Damage and Agricultural Losses

Crop damage is a major concern in many landscapes were agriculture borders wildlife habitat. Depending on the location, wild boar, nilgai, deer, monkeys, and other animals may damage standing crops or stored produce. Herbivores may enter fields for food, while some species use agricultural vegetation as cover. For small and marginal farmers, crop losses can reduce household income and food security. Additional costs arise from night guarding, repairing barriers, and travelling to report damage. When losses recur, farmers may alter cropping patterns or abandon vulnerable fields. Management should be based on local assessments of species, crops, seasonal timing, and damage patterns. Measures such as secure storage, appropriately designed barriers, coordinated monitoring, and improved reporting can help, but they should not transfer the entire cost of conservation to individual farmers.

5.2 Human Injuries and Fatalities

Encounters with tigers, leopards, wolves, elephants, and other potentially dangerous animals can cause serious injury or death. Risk is influenced by animal behaviour, visibility, the activities people undertake, and the circumstances of the encounter. In Lakhimpur Kheri, research on the Dudhwa–Pilibhit landscape highlights the importance of encounters in forests and agricultural fields. In Bahraich, the 2024 wolf-attack episode demonstrates the need for rapid investigation, accurate public communication, and locally appropriate safety measures. These cases involve different species and circumstances, so they should not be treated as evidence of one common cause.

5.3 Livestock Losses and Rural Vulnerability

Livestock provide income, milk, manure, savings, and agricultural support. Predation can therefore affect households beyond the immediate market value of a lost animal. Families may also face additional costs for stronger enclosures, veterinary treatment, or altered grazing arrangements. Effective livestock protection requires species-appropriate enclosure design, supervised grazing where necessary, and rapid reporting of repeated predation. Compensation should be accessible and timely so that affected households are not left to absorb the full economic burden.

5.4 Wildlife Mortality and Declining Conservation Support

Conflict can also harm wildlife through retaliatory killing, poisoning, unsafe electrical barriers, vehicle collisions, and poorly managed capture or relocation. Such responses can undermine conservation and create additional risks for people. When communities perceive conservation as imposing costs without providing support, willingness to cooperate may decline. This is why wildlife protection must be accompanied by practical risk reduction, transparent compensation, and meaningful participation by affected residents.

5.5 Psychological and Social Consequences

Recurring encounters can cause anxiety, disrupt agricultural work, restrict movement, and affect school journeys or the collection of forest resources. These effects may be particularly serious for people who work outdoors or live far from emergency services. The costs of conflict are not distributed equally. Households with limited savings, people dependent on daily agricultural labour, and families without alternative livelihoods may be less able to recover from losses. A fair management framework should therefore consider both ecological risk and social vulnerability.

6. GIS and Remote Sensing for Mapping Conflict Hotspots

Geographical Information Systems (GIS) and remote sensing can strengthen research on human–wildlife conflict by identifying the spatial relationships between habitat change, agricultural land use, settlement growth, and recorded incidents. These methods are particularly relevant to Lakhimpur Kheri and Bahraich, where forests, wetlands, agricultural fields, rivers, and settlements form a complex landscape. Satellite imagery from Landsat or Sentinel missions can be used to classify land cover for selected years. Comparing these classifications can help identify changes in forest cover, grasslands, wetlands, agriculture, and settlement areas. GIS can then integrate land-cover maps with verified incident records and relevant environmental variables. Potential variables include distance from forest edges, proximity to villages and roads, the distribution of agricultural fields, access to water, and the location of known wildlife corridors. If sufficient reliable incident records are available, statistical analysis can test which variables are associated with conflict and identify locations for further investigation.

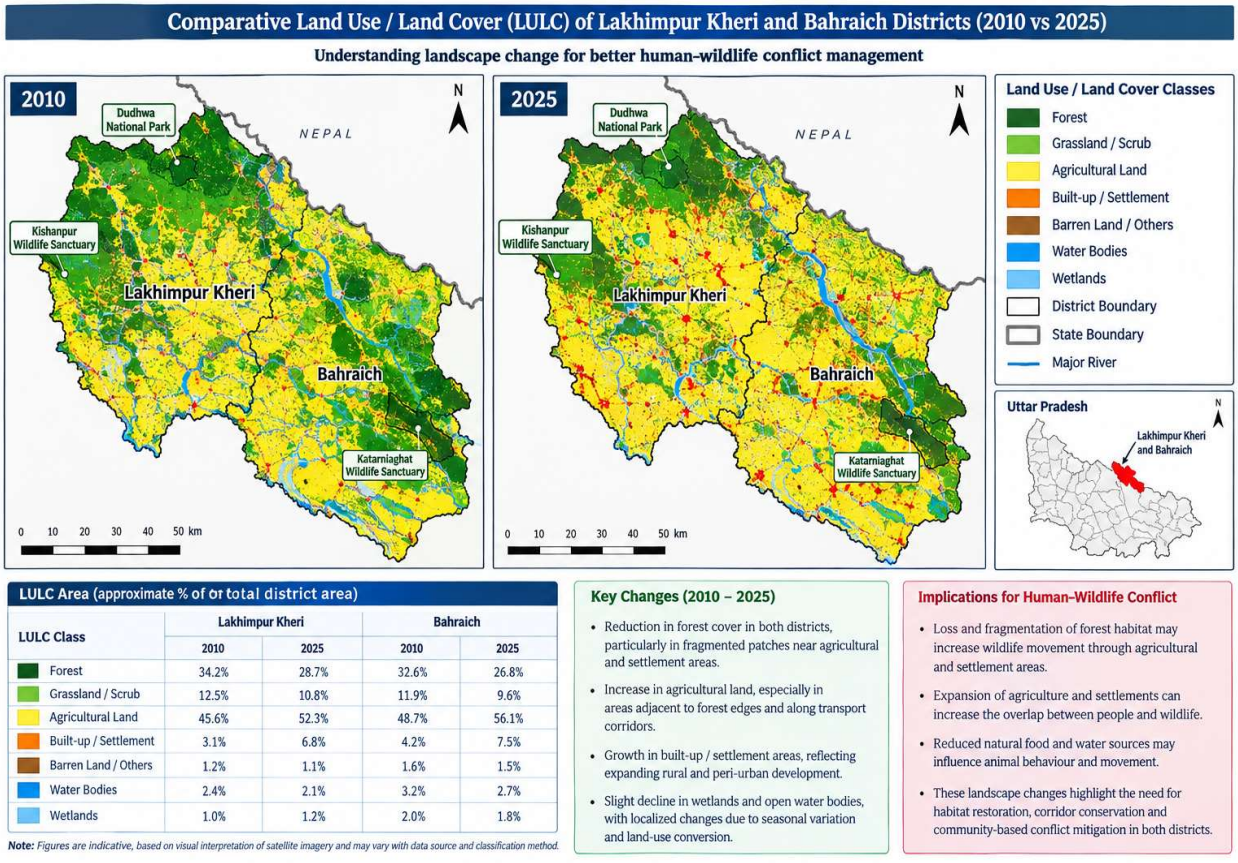


Figure 4. Comparative LULC of 2010& 2020 of Lakhimpur Khiri & Bahraich Districts.

The framework could support three practical applications:

1. **Habitat-change assessment:** Identify where forest cover, grasslands, wetlands, or ecological connections have changed over time.
2. **Conflict-risk analysis:** Examine whether verified incidents are associated with particular land uses, settlements, transport routes, or habitat edges.
3. **Management prioritisation:** Identify locations where additional monitoring, community alerts, habitat restoration, or safer infrastructure may be warranted.

A crucial limitation is that an incident map is only as reliable as the data used to create it. Differences in reporting, incomplete records, and changes in administrative procedures can affect the apparent distribution of conflict. A hotspot map should therefore be validated using field observations, interviews, and records from the relevant authorities. Until this work is completed, the proposed framework should not be interpreted as identifying confirmed hotspots in either district.

7. Strategies for Sustainable Management

7.1 Habitat Restoration and Biodiversity Conservation

Protecting and restoring natural habitats is essential for maintaining ecological resilience. Conservation programmes should protect native forests, grasslands, wetlands, and riverine ecosystems according to their ecological functions. Restoration should not simply involve planting trees everywhere; naturally open grasslands and wetlands also support specialised biodiversity. Where habitat degradation has affected animal movement or resource availability, carefully planned restoration may improve ecological conditions. Nevertheless, habitat restoration alone cannot eliminate conflict where agricultural fields, settlements, and wildlife movement continue to overlap.

7.2 Protection of Wildlife Corridors

Wildlife corridors connect habitat patches and facilitate movement between feeding areas, breeding grounds, and seasonal habitats. Protecting these connections can help maintain viable wildlife populations and reduce the isolation associated with fragmented landscapes. In the Dudhwa landscape, connectivity between Dudhwa, Kishanpur, Katarniaghat, and protected areas in Nepal is an important conservation consideration.

The National Tiger Conservation Authority identifies these protected areas and adjoining forest divisions as components of Dudhwa Tiger Reserve. Corridor planning should incorporate land-use mapping, field verification, consultation with affected villages, and coordination with transport and development agencies. Infrastructure projects should assess wildlife movement before construction and incorporate suitable crossing structures and other risk-reduction measures were justified.

7.3 Community-Based Early-Warning Systems

Village-level monitoring and communication can help people respond more safely to wildlife presence. Possible measures include trained community volunteers, verified mobile alerts, clear reporting procedures, and coordinated response teams. Warnings should be based on credible information and delivered through channels

accessible to local residents. Public messages must avoid encouraging people to chase, surround, or approach dangerous animals. Professional wildlife teams should handle high-risk situations.

7.4 Safer Agricultural and Livestock Practices

Crop-protection strategies should be tailored to the species involved and the local environment. Secure livestock shelters, supervised grazing, improved food-waste management, and appropriately designed barriers may reduce some forms of conflict. Crop diversification may also be considered where reliable evidence shows that particular crops are associated with recurring losses.

No intervention should be assumed effective without local evaluation. Unsafe electrification and other hazardous deterrents can injure or kill wildlife and people. Measures that shift animals into neighbouring villages may also worsen the overall problem.

7.5 Fair Compensation and Livelihood Support

Compensation can help affected households recover from crop damage, livestock losses, and other eligible incidents. Schemes should have clear criteria, simple reporting procedures, transparent verification, and reasonable payment timelines.

For communities facing repeated losses, compensation could be complemented by livelihood support, access to insurance where feasible, and assistance with safer agricultural practices. Evaluations should assess not only the amount paid but also whether support reaches vulnerable households and reduces the financial burden of coexistence.

7.6 Education, Awareness, and Public Communication

Education programmes should explain local wildlife behaviour, safe responses to encounters, reporting procedures, and the ecological value of biodiversity. Schools, village institutions, conservation organisations, and local administrations can help disseminate information.

Public communication must be accurate and species-specific. Generalised warnings that portray all wildlife as dangerous can create unnecessary fear, while minimising genuine risks can expose people to harm. A balanced approach should recognise both the importance of conservation and the legitimate concerns of affected residents.

7.7 Coordinated Governance

Human–wildlife conflict involves multiple agencies and cannot be managed by the Forest Department alone. Forest officials, agriculture departments, local governments, health services, transport authorities, and community organisations should share relevant information and coordinate their responses.

For Lakhimpur Kheri and Bahraich, a landscape-level mechanism could coordinate incident reporting, corridor protection, community alerts, compensation procedures, and periodic evaluation. Coordination should also consider transboundary wildlife connectivity with Nepal where relevant.

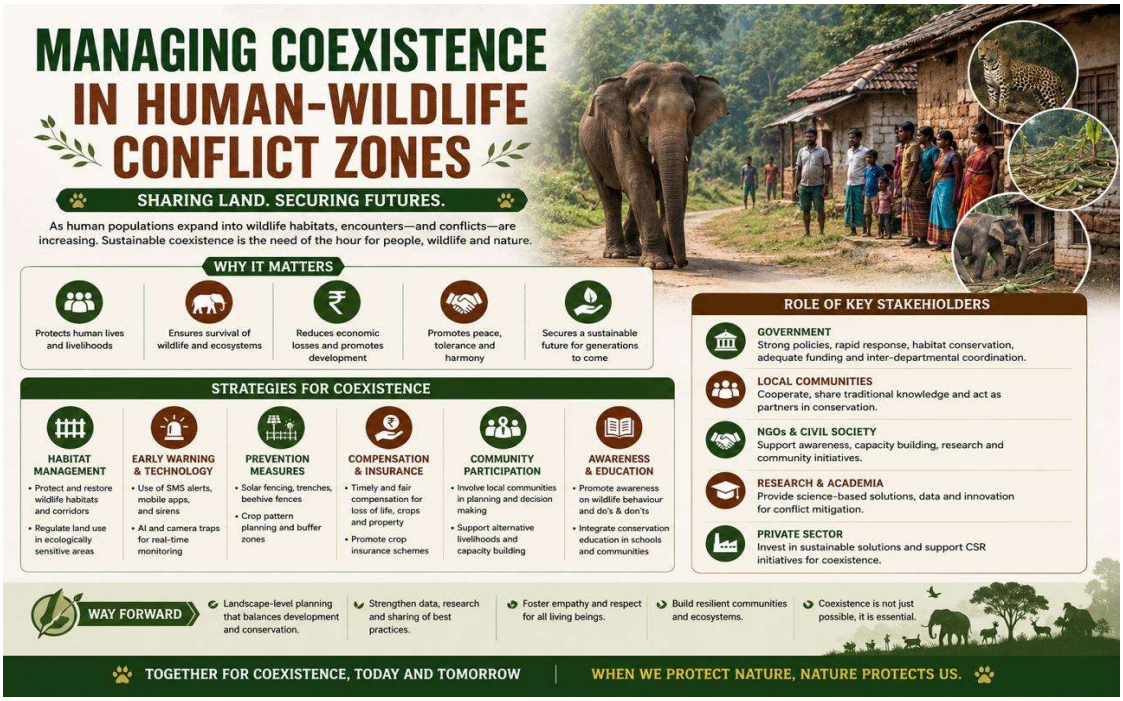


Figure 5. Integrated Framework for Sustainable Human–Wildlife Coexistence in the Terai.

8. Policy Recommendations and Future Research

A sustainable strategy for the Terai should combine biodiversity conservation with risk reduction and support for rural communities. The following priorities are proposed.

Table 2. Priority Interventions for Lakhimpur Kheri and Bahraich

Priority area	Proposed intervention	Expected benefit
Biodiversity	Restore native habitats and protect wetlands and grasslands	Maintains ecological functions
Connectivity	Map and conserve wildlife corridors	Supports animal movement
Community safety	Establish reliable village alert and response systems	Improves preparedness
Agriculture	Promote locally appropriate crop and livestock protection	Reduces avoidable losses
Compensation	Simplify reporting and provide timely financial support	Reduces household vulnerability
Geospatial planning	Integrate satellite imagery and verified incident records	Supports evidence-based prioritisation
Public awareness	Provide species-specific safety education	Reduces risky encounters
Governance	Coordinate forest, agriculture, health, and local authorities	Improves response and accountability
Research	Evaluate interventions using long-term data	Identifies effective and equitable measures

Future research should prioritise district-specific evidence rather than relying exclusively on general descriptions of human–wildlife conflict. Useful research questions include:

- How have forest cover, grasslands, wetlands, and agricultural land changed around Dudhwa, Kishanpur, and Katarniaghat?
- Which landscape characteristics are associated with recurring wildlife incidents?
- How do crop damage and livestock losses vary across villages and agricultural seasons?
- How effective are early-warning systems, compensation schemes, and livestock-protection measures?
- Which communities bear the greatest costs, and how can support be distributed more equitably?

A combined methodology involving satellite-image classification, GIS hotspot analysis, household interviews, field verification, and official incident records would provide a stronger empirical basis for answering these questions. Research should also examine whether interventions reduce incidents overall or simply shift them to neighbouring locations.

9. Conclusion

Human–wildlife conflict in Lakhimpur Kheri and Bahraich reflects the complex relationship between biodiversity conservation, agricultural livelihoods, and changing land use in the Terai region of Uttar Pradesh. The presence of Dudhwa National Park, Kishanpur Wildlife Sanctuary, and Katarniaghat Wildlife Sanctuary makes the landscape important for wildlife conservation, while its agricultural fields and rural settlements create areas of potential human–wildlife interaction.

Habitat degradation, fragmentation, changing resource availability, agricultural expansion, and infrastructure development can contribute to conflict, but their effects differ among species and locations. The Dudhwa–Pilibhit research demonstrates that harmful tiger encounters can occur both within forests and in agricultural fields, illustrating why conservation planning must extend beyond protected-area boundaries. The wolf-attack episode reported in Bahraich in 2024 further demonstrates the need for species-specific investigation rather than attributing every conflict incident to biodiversity loss alone.

This paper proposes an integrated strategy based on habitat restoration, corridor conservation, community participation, early-warning systems, safer agricultural practices, fair compensation, and coordinated governance. GIS and remote sensing can strengthen the approach by identifying landscape changes and supporting the analysis of verified incident records.

For Lakhimpur Kheri, particular attention should be paid to forest–agriculture interfaces and wildlife movement around Dudhwa and Kishanpur. In Bahraich, management should consider Katarniaghat's forest and riverine habitats, settlement patterns, and connections with protected areas in Nepal. Both districts would benefit from locally adapted prevention measures and systematic evaluation.

Ultimately, the objective should not be to eliminate wildlife from human-dominated landscapes, but to reduce harmful encounters while maintaining biodiversity and protecting rural livelihoods. A coordinated Terai landscape strategy, supported by reliable data and meaningful community participation, offers a practical foundation for achieving safer and more sustainable coexistence.

References

Chatterjee, M., Chatterjee, N., Chandel, P., Bhattacharya, T., & Kaul, R. (2022). Predicting negative human-tiger (Panthera tigris) interactions in mosaic landscapes around Dudhwa and Pilibhit tiger reserves in India. Frontiers in Conservation Science, 3, Article 999195. https://doi.org/10.3389/fcosc.2022.999195

Dickman, A. J. (2010). Complexities of conflict: The importance of considering social factors for effectively resolving human–wildlife conflict. Animal Conservation, 13(5), 458–466. https://doi.org/10.1111/j.1469-1795.2010.00368.x

Government of India, National Tiger Conservation Authority. (n.d.). Dudhwa Tiger Reserve. https://ntca.gov.in/assets/uploads/briefnote/dudhwa.pdf

Government of Uttar Pradesh, District Bahraich. (n.d.). Katarniaghat Wildlife Sanctuary. https://bahraich.nic.in/tourist-place/katarniaghat-wildlife-sanctuary/

IPBES. (2019). Global assessment report on biodiversity and ecosystem services. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

IUCN SSC Human-Wildlife Conflict Task Force. (2023). IUCN SSC guidelines on human-wildlife conflict and coexistence. International Union for Conservation of Nature. https://portals.iucn.org/library/efiles/documents/2023-009-En.pdf

Madden, F. (2004). Creating coexistence between humans and wildlife: Global perspectives on local efforts to address human-wildlife conflict. Human Dimensions of Wildlife, 9(4), 247–257. https://doi.org/10.1080/10871200490505675

Nyhus, P. J. (2016). Human–wildlife conflict and coexistence. Annual Review of Environment and Resources, 41, 143–171. https://doi.org/10.1146/annurev-environ-110615-085634

Redpath, S. M., Bhatia, S., & Young, J. (2015). Tilting at wildlife: Reconsidering human–wildlife conflict. Oryx, 49(2), 222–225. https://doi.org/10.1017/S0030605314000799

Treves, A., & Karanth, K. U. (2003). Human–carnivore conflict and perspectives on carnivore management worldwide. Conservation Biology, 17(6), 1491–1499. https://doi.org/10.1111/j.1523-1739.2003.00059.x

Secretariat of the Convention on Biological Diversity. (2020). Global biodiversity outlook 5. Convention on Biological Diversity.

Chaudhary, S., & Khalid, M. A. (2026). Human–wildlife conflict in the Terai of Uttar Pradesh (India) in context to global patterns, drivers and mitigation practices: A comprehensive review. Genetics and Molecular Research, 25(19s). https://doi.org/10.4238/t152at17