

6. Human-Wildlife Conflict – Environment

The National Tiger Conservation Authority appraised the expansion of Project Cheetah and reviewed measures to address human-wildlife conflict.

Human-Wildlife Conflict (HWC)- Meaning and Scope

Human-Wildlife Conflict (HWC) refers to situations where interactions between humans and wild animals result in negative outcomes for both. Impacts on humans include

1. Loss of human life and injuries
2. Crop damage and livestock predation
3. Damage to houses, infrastructure, and livelihoods

Impacts on wildlife include

1. Retaliatory killings
2. Habitat destruction and fragmentation
3. Increased stress, injury, and mortality

HWC is therefore both a conservation challenge and a socio-economic problem.

Nature of HWC in India

India is one of the world's most biodiversity-rich yet densely populated countries, making conflict structurally unavoidable. Conflicts are most common in

1. Forest fringe villages
2. Wildlife corridors
3. Protected area buffer zones

Species most frequently involved

1. Elephants – crop raiding, human deaths, train collisions
2. Tigers and leopards – livestock predation and human attacks
3. Bears – injuries during accidental encounters
4. Wild boars and monkeys – extensive crop damage

Regions particularly affected

1. Northeast India
2. Central Indian Forest belt
3. Western Ghats
4. Himalayan foothills

Reasons for the Increasing Incidence of HWC

Habitat Degradation and Fragmentation- Deforestation, mining, dams, roads, railways, and urban expansion have

1. Shrunk forest areas
2. Broken continuous habitats into isolated patches

Wildlife is forced to move into human-dominated landscapes in search of food and water.

Rise in Certain Animal Populations- Population increase in species such as

1. Wild pigs
2. Monkeys (especially bonnet macaques)

Reasons include

1. Decline of natural predators
2. Availability of food from farms and human settlements

These species are highly adaptable and thrive near humans, intensifying conflict.

Human Economic Activities- Cattle grazing inside forests attracts predators like leopards and tigers. Shift to water-intensive or cash crops (banana, sugarcane, maize) attracts elephants and wild boars. Poorly managed waste around villages draws monkeys, bears, and wild pigs.

Ecological Imbalances- Historical hunting and habitat loss reduced populations of apex predators.

Resultant trophic imbalance led to

1. Overpopulation of herbivores
2. Increased crop depredation

This reflects a breakdown of natural ecological regulation.

Climate Change and Resource Stress– Changing rainfall patterns and droughts reduce food and water availability inside forests. Animals increasingly move out during dry seasons, escalating encounters.

Government Measures to Address HWC

National Wildlife Action Plan (2017–2035)– Serves as India's long-term strategic roadmap for wildlife conservation. Explicitly prioritises

1. Landscape-level conservation beyond protected areas
2. Mitigation of human–wildlife conflict
3. Community participation and livelihood integration
4. Use of science, GIS, and technology in wildlife management

Wildlife Protection Act, 1972– Provides the legal framework for wildlife conservation in India. Enables

1. Creation of protected areas
2. Regulation of hunting and trade
3. Legal action against wildlife crimes

Expansion of Protected Areas– India currently has

1. 107 National Parks
2. 573 Wildlife Sanctuaries
3. 115 Conservation Reserves

These areas aim to

1. Secure core habitats
2. Reduce spillover of wildlife into human landscapes

Species-Specific Conservation Programmes

Project Tiger and **Project Elephant** focus on

1. Habitat protection
2. Corridor conservation
3. Anti-poaching measures
4. Conflict mitigation and compensation mechanisms

Technological and Operational Innovations

Plan Bee

1. Adopted by the Northeast Frontier Railway
2. Uses sound generated by bees to deter elephants from railway tracks
3. Helps reduce elephant deaths due to train collisions

Operation Thunderbird

1. Coordinated by the Wildlife Crime Control Bureau
2. Targets illegal wildlife trade networks across India

International Monitoring Mechanisms– Monitoring the Illegal Killing of Elephants (MIKE) programme

1. Established under CITES in 1997
2. Tracks elephant mortality trends to inform conservation strategies

Rapid Response and Localised Interventions– States like Kerala have established–

1. Permanent and temporary Rapid Response Teams
2. Early-warning systems and quick animal capture or relocation

Community-level participation has improved emergency response capacity.

Limitations of Current Approaches– Reactive and compensation-focused responses dominate over prevention. Inadequate coordination between

1. Forest departments
2. Local governments
3. Infrastructure agencies

Delays in compensation reduce trust among affected communities. Wildlife corridors often lack legal protection, making them vulnerable to encroachment.

Way Forward- A Preventive and Integrated Strategy

Mainstream HWC into Development Planning- HWC mitigation must be embedded in--

1. Infrastructure projects
2. Land-use planning
3. Environmental Impact Assessments

Preventive design is cheaper and more effective than post-conflict relief.

Strengthen Community Engagement and Awareness- Regular interaction between forest officials and local communities. Awareness about

1. Animal behaviour
2. Seasonal movement patterns
3. Early-warning signals

Community stewardship reduces fear and retaliatory violence.

Corridor Protection and Habitat Restoration- Identify, notify, and legally protect wildlife corridors.

Restore degraded habitats to ensure

1. Safe animal movement
2. Reduced roadkills and accidental encounters

Use GIS, satellite tracking, and AI-based alerts.

Compensation and Livelihood Diversification- Ensure

1. Timely and transparent compensation
2. Insurance-based mechanisms

Promote alternative livelihoods to reduce dependence on forest resources.

Conclusion

Human-Wildlife Conflict in India is a structural outcome of development pressures intersecting with ecological realities. Addressing it requires moving beyond ad-hoc responses towards landscape-level planning, ecological restoration, and community-centric governance. A balanced approach that protects both human livelihoods and wildlife survival is essential for sustainable development.

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