Best Practices of Human Elephant Conflict Management in India

Project Elephant Division

Ministry of Environment, Forest & Climate Change

2020

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Message

Globally, wild Asian elephants are present in 13 countries and India holds the largest population of wild Asian elephants (*Elephas maximus*) with nearly 30,000 animals. Human habitation is impinging on the boundary of many Protected Areas and shrinking space, shortage of food often forces wild animals towards populated areas. Each year, human-elephant conflict results in about 500 human deaths and damage to thousands of houses and millions hectares of crops, while over 100 elephants die due to human-related activities, which include poaching for ivory or meat, poisoning, electrocution and collision with trains.

With the increasing instances of human - elephant conflict across the country several State Forest Departments incur huge amounts of expenses towards compensation for death of humans, loss of property and crops. Many conflict mitigation measures have been attempted in bits and pieces by the State Forest Departments with few successes and failures. Therefore, a need was felt to compile all the management strategies adopted by the State Forest Departments and other agencies across the country for mitigation of human - elephant conflict and come up with a guide that can be handy and easily comprehensible by forest staff in implementing on field.

I appreciate the efforts of team for compiling the best management practices adopted by the states to mitigate HEC where conflict is severe and can this guide shall serve as a reference tool for SFDs who are unaware of the HEC mitigative measures adopted by the other states.

Hon'ble Minister, MEF&CC

Message

Human-elephant conflict is a major conservation concern in all elephant range countries including India. However, human–elephant conflict is not a new phenomenon and records exist of records exist of elephant crop raiding in Asia as early as 300 BC. Humans and elephants have been utilizing the same space for thousands of years. Despite widespread reverence for wild elephants, human – elephant conflict is on the rise as local people attempt to protect their livelihoods. Therefore, understanding human-elephant conflict is an important first step in the conservation of highly endangered species that can have adverse effects on human communities, such as elephants.

Addressing this concern, a variety of management strategies have been developed and are practiced at different scales for preventing and mitigating human-elephant conflict. This guide focuses on current human-elephant conflict mitigation strategies, illustrating them with examples of their success and/or failure in mitigating human – elephant conflict. The overall purpose of this guide is to highlight the best practices adopted by states with a goal of mitigating conflicts and promoting human-elephant coexistence. We believe this document will be useful to policy makers, project implementers, academicians and researchers interested in the field of elephant conservation.

Hon'ble Minister of State, MEF&CC

ACKNOWLEDGEMENTS

The Pictorial Guide on Best Practices of Human – Elephant Conflict Management in India has been compiled as a reference for mitigation of human-elephant conflict by states.

At the outset, our sincere gratitude to Shri Prakash Javadekar, Hon'ble Minister of Environment, Forest & Climate Change for his constant guide and support.

The undying support of Shri Babul Supriyo, Hon'ble Minister of State, Environment, Forest & Climate Change has enabled to look out for pragmatic and feasible solutions for human – elephant conflict and help in drafting the document.

Our deep gratitude is also to Shri Rameshwar Prasad Gupta, Secretary, E,F&CC and Shri Sanjay Kumar for their constant support for compiling this document.

We are also thankful to all the State Forest Departments and elephant experts for sharing the photos of the practices adopted for mitigation of human – elephant conflict in their states.

BACKGROUND

India has the largest number of wild Asian Elephants, estimated at 29,964 according to 2017 census by Project Elephant, i.e. about 60% of the species' global population. Friction between humans and elephants termed Human-Elephant Conflict (HEC) occurs mainly over space and is a major conservation concern across the country for governments, conservationists and people living close to the wild animals. Loss of natural habitat and fragmentation have been bringing wild elephants closer to human habitations, sparking these conflicts. Over 500 humans are killed in encounters with elephants annually, and crops and property worth millions are also damaged. Many elephants are also killed in retaliation due to conflict.

To tackle such conflicts and avoid losses on both sides, it is important to strengthen the human-elephant coexistence through by active management interventions by the State Forest Departments, involvement of various stakeholders and sensitization and generating awareness in local communities of forest fringe areas. A variety of management strategies and practices has been developed and customized are implemented at different scales by the State Forest Departments for preventing and mitigating human-elephant conflict. Though majority of existing prevention strategies are driven by site-specific factors that offer short-term solutions, but many interventions adopted have resulted in successfully removing elephants from the human habitations. This pictorial guide summarises the various management inventions successfully adopted by the elephant range states and serves as a reference manual for adoption of the best possible site specific mitigative measures that can be adopted to reduce human – elephant conflict.

RETAINING ELEPHANTS IN THEIR NATURAL HABITATS

Habitat Management Activities for Mitigating HEC

1. Development and Maintenance of Perrenial Water Holes

Water Holes in Karnatka, Tamil Nadu and Chhattisgarh

2. Solar Powered Borewells

Borewells in Tamil Nadu, Karnataka and Uttarakhand

➢ To improve the availability of water, waterholes are created and filled with water naturally or artificially. The existing water sources are desilted and disinfected periodically to increase storage capacity.

➢ Due to extreme dry conditions in certain ranges, adequate water availability in forests is a big issue. Solar power borewells have been established to tackle this issue. Identified large ponds are filled with solar powered bore wells which ensured availability of water all round the year.

➢ Water management and distribution is largely done by leveraging gravitational force to channelize the flow of water. Waterholes and saltlicks help in monitoring and eco-tourism

Habitat Management Activities for HEC Management

3.   Creation of Fodder Plantations

Fodder Plantation in Tamil Nadu (Pennisetum pedicellatum-Elephant Grass)

4.   Fire Management for Control of HEC

Fire Managemetn in Karnataka

➢ Possibility of using coppicing and pollarding of fodder trees/poles preferred by elephants for fresh fodder at appropriate scale.
➢ Plantation of fodder grass keeps elephant herds confined to forest.
➢ Canopies are also opened up in patches for the fodder plants to grow as done in few National Parks and Tiger Reserves and these are extensively used by elephants.
➢ Using controlled fire to encourage new growth of flush.
➢ Construction of watch towers is necessary for early detection of fire and quick response.
➢ Modern fire-fighting equipment like blowers, beaters etc. are used to contain and curtail the spread of fire.
➢ Drones are used to detect fire.
➢ Local fire-watchers are also employed in summer months. Morning and evening patrolling is done to collect litter and keep area clean and avoid fire. Fire lines are maintained.

5. Collection of Grass Seeds

Collection of Grass Seeds in Karnataka

6. Grassland Management

Grassland management in Karnataka

7. Vayal Management

Vayal management in Kerala

> ➢ After removal of weeds, locally available palatable grasses should be planted/ grass seeds should be sown in the area and maintained for the next three/four years
> ➢ Vayals are Microhabitats forming an Ecological Niche and marshy Meadows surrounded by forest. Vayals may be managed to reduce threat of infestation of exotic/invasive weeds such as Lantana, Eupatorium, Mikania, Mimosa etc.

Habitat Management Activities for HEC Management

8. Wattle Removal	**9. Weed Removal (Cassia and Lantana)**
Nilgiris, Tamil Nadu	*Weed removal in Karnataka and Kerala*

10.   Management of Invasie Species

> ➢ Invasive species like Prosopis and wattle needs to be removed from wildlife habitats and rigorous monitoring and ecological restoration should be done to prevent reinvasion. It is practiced in Tamil Nadu and Karnataka among other states.
> ➢ Physical removal of invasives like Cassia and Lantana etc. *viz.* physical removal requires huge investment of money and human resources. This may be taken up under habitat management programmes.

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Habitat Improvement for HEC Management

1.   Bamboo Planting/Restocking

Bamboo planting in Karnataka

2.   Intensive Soil Working

Soil Working Around Bamboo Plants in Karnataka

➤ New bamboo plantations/Restocking of existing degraded bamboo areas and also in lantana removed areas.

➤ To improve the habitat by adding fodder and canopy, *Ficus* cuttings and bamboo wildlings have been planted around the waterholes

RESTRICTING ELEPHANTS IN THEIR NATURAL HABITATS

Installation of Barriers

1. Elephant Proof trenches

EPT in Tamil Nadu

2. Hanging fences

Installed by Karnataka FD

3. Rubble Walls
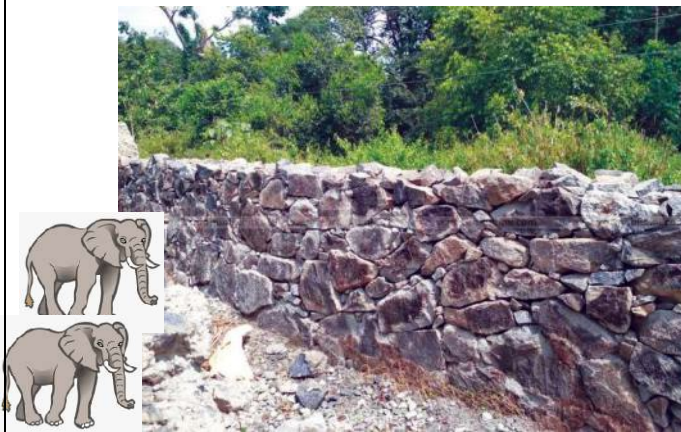
Constructed in Coorg, Karnataka

4. Solar Powered High Electric Fences

Erected by Karnataka FD

> ➢ Elephant Proof Trenches (EPTs) are advisable around small forest blocks but moderately useful around large forest blocks. The recommended design of EPTs consists of segments separated by walls (septa) to prevent water flow. Tried in several states but not good in hilly terrains.
> ➢ Solar electric fences require lower investment than EPTs. Hanging fences are very effective in Karnataka and Tamil Nadu.
> ➢ Strong barriers are using steel channels, used rails and concrete walls are useful over small distances.
> ➢ Involvement of the local community or the stakeholder is most important in erection and maintenance of barriers.

Installation of Barriers

5.   Community Electric Fences

Community fencing being erected at WB   Fencing erected at Kerala (Vengoor, Athikunni, Kalankandy)

6.   Bee Hive Fence

In Amba village, S.Wyanad Division, Kerala

7.   Rail Fence

Rail Fences erected at Bandipur, Karnataka

> ➢ Involvement of the local community or the stakeholder is most important for effectiveness of barriers. The stakeholders must be actively involved in installation and the maintenance of the barrier. Has been tried in West Bengal and Kerala.
> ➢ A series of bee hives is created at short intervals along fences at the boundary of the enclave. The bee hives are connected to the fence to drive away elephants. Successful in Kerala.
> ➢ Rail fencing though expensive is eco-friendly and more effective than solar electric fences, elephant proof trenches, which are partially successful. It has been successful in Karnataka.

Installation of Barriers

8.   Bio Fence

Biofencing in West Bengal

9. Chilly Fences

Chilli fencing and curtains at West Bengal and around Banerghatta NP, Karnataka. Photo:WWF-India

> ➢ Forest Departments are adopting biofences as a biological elephant barricade which is made of thorny plant varieties. Biofencing is cost effective and done in West Bengal, Assam, Tamil Nadu etc.
> ➢ Chilli is known to have an irritating effect on olfactory nerves of elephants and act as a psychological barrier. Chilli fence are made of 2-3 strands of strings strung along poles surrounding a crop field. The ropes have clothes or rags soaked in chilli oil hung on the strands. Chilli ropes were found to be more effective against elephant family groups than bulls, and in drier regions as compared to high rainfall regions. Effective in Karnataka.

10. Concrete Barriers

Erected in Coimbatore, Tamil Nadu

Bridges, additional bays and opaque barricading in Nagaon, Assam

> ➢ Concrete/masonary structures like pillars/ precast blocks are created to deter the movement of elephants into roads or rails cutting the forests.
> ➢ These structures are more prominent and effective as barriers for crop protection.

1. Radio Collaring for Monitoring of Problematic Elephants

Radio collared elephants in Karnataka and Chhattisgarh

2. Watch Tower for Tracking Eelephant

Watch Tower in Karnatka

3. Drones

Used by MP & WB FD (Sunderban, Buxa, Bankura)

> ➢ Radio collaring of elephants is used for tracking of movement patterns of tagged elephant and is often the best method used in wide ranging species like elephants.
> ➢ Watch towers erected by FD help in keeping a vigil over the movement of elephants and aids in warning the villagers of elephants moving into human habitation.
> ➢ Early warning SMS alert systems/WhatsApp Group are useful in situations where encounters with elephants are high. Warning about elephant presence may also be advertised through local/ cable TV channels. Early warning system through WhatApp and regular broadcasting of herd locations every day and their possible route are useful.
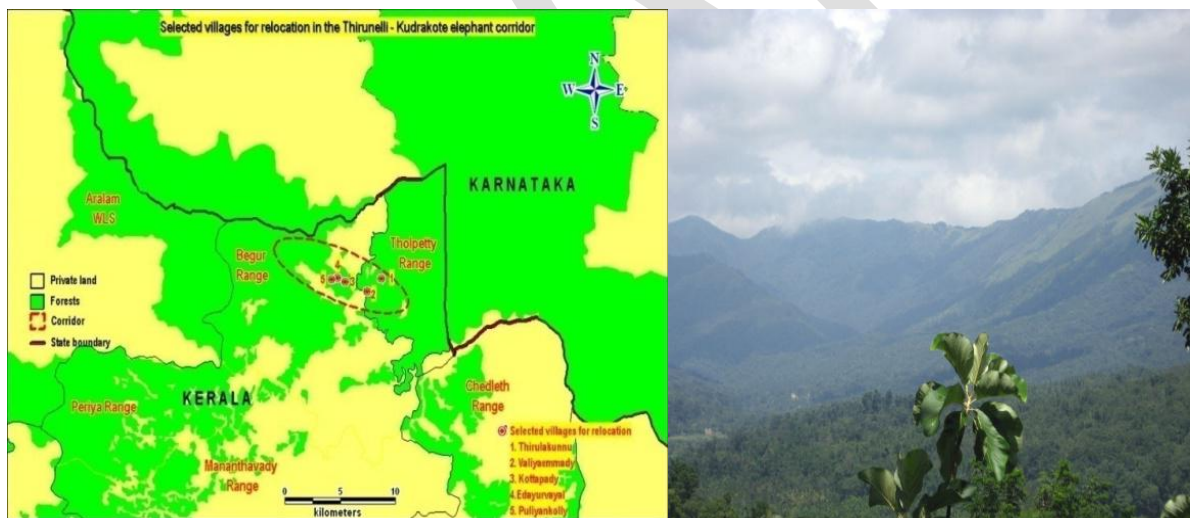
Strengthening Elephant Corridors for HEC Management

1. Relocation of Villages from Elephant Corridors/Protected Areas

Goloor, Wayanad in Kerala before and after relocation

2. Securement of Elephant Corridors

Thirunelli-Kudrakote Elephant Corridor, Kerala

> ➢ SFD should make efforts to protect corridor land, voluntary relocation of people or securing with support from local community. The model of relocation of community (Goloor tribal community) from Wyanad, Kerala may be referred to regenerate habitats within the forest.
> ➢ State Forest Departments may consider using CAMPA funds or funds from other sources for legal acquisition of elephant corridor lands and protect the wildlife/elephant corridors.
> ➢ Karnataka Forest Department has relocated people from the elephant corridor of Edayarahalli-Doddasampige by purchasing 25.37 acres of private land ensuring the safe movement of elephant in the corridor.

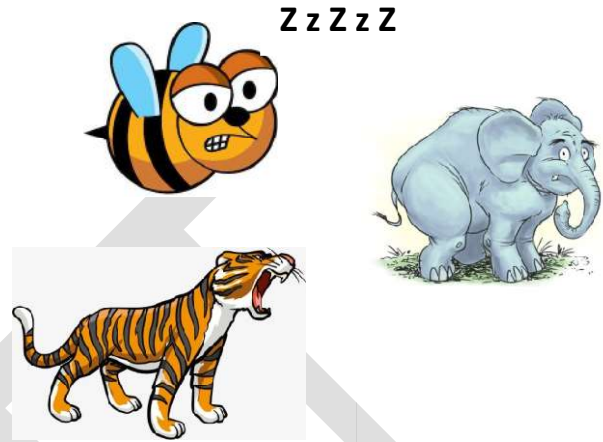# GUIDING ELEPHANTS BACK INTO THEIR NATURAL HABITATS

Repellent Methods

1. Fire crackers, Drum Beating

Drum beating in Odisha

2. Bee, Carnivore Sounds

Z z Z z Z

Used in Assam, Kerala

3. SMS Alerts and Whatsapp

Elephant is on its way

Be careful

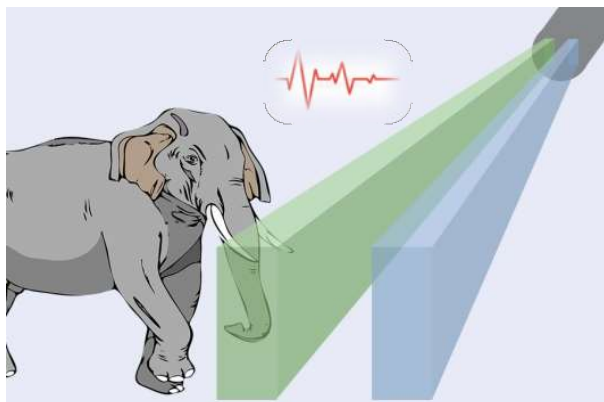WhatsApp

Used in Chhattisgarh, West Bengal, Odisha etc.

4. Use of Loud Speaker

Use of Loud Speaker in Odisha

➢ Beating of drums shouting, and bursting crackers are sometimes effective, depending on the habituation of the elephants. Practiced in Odisha, West Bengal.

➢ Bee sound played has been used as a repellent method in Africa and found to be very effective, especially if it is backed by beehive fences. Playback calls of predators such lion, tiger and leopards may evoke negative responses in elephants. Used in Kerala in many divisions.

➢ Drone is a good option to implement if resources for drones are available. Practised in MP, West Bengal FD.

➢ Electric torch, kerosene torch are moderately effective if done systematically. Villagers hold fire torches to prevent elephants from entering. Used in West Bengal.

Deterrent Methods	
1. Trip Alarm, Sensory Based Alarm *Piloted in West Bengal and Tamil Nadu*	**2. Crop Guarding** *Kendrapada, Near Bhittarkanika NP, Odisha*

3. Chilli Smoke

Use of Chilli Smoke in North West Bengal

- ➤ Trip alarm rings when elephants cross the trip and gives sufficient warning to the community to come to the point and drive away elephants.
- ➤ Sensor based alarm system detect elephant in or near village/agriculture land or railway tracks. These are solar powered infra rayed system and could be even fitted with camera and can alert villagers/ driving squad when elephants are detected close to human settlement or agriculture land through SMS/lights/sound, etc. Used effectively in Valparai, Tamil Nadu.
- ➤ Community guarding done in Odisha and many other states is effective ways of protecting crops.
- ➤ Chilly as a repellent can be used in the form of chilli smoke, chilli rope and chilli bricks. Chilli ropes were found to be more effective against elephant family groups than bulls, and in drier regions as compared to high rainfall regions. Used in West Bengal, Karnataka.
- ➤ In Odisha, spikes have been put on electric poles to prevent elephants from getting electrocuted.

1. Kumki Elephant

Use of Forest Department Kumki Elephants in Coimbatore, Tamil Nadu

2. Alternate Cropping

Growing of alternate crops like citrus, chilies, ginger not liked by elephants

➢ Elephant drive is done to drive the elephant herd out of one range to another division or from human habitation towards the forest.

➢ Kumki elephants are effective in driving away elephants from villages, for monitoring/capturing/ tranquilizing/ translocating/ training/ hunting of problem elephants.

➢ Alternate cropping with non-edible crops crops like chilli, citrus, ginger, onion not consumed by elephants could be grown in forest fringes as well as areas near settlements in forest fringes may deter elephants from reaching and raiding the crop fields.

Individual Identification and Monitoring of Elephants for HEC Management

1. Daily monitoring of elephants

Daily movement record of Elephant in South West Bengal

Date	Circle	Division	Range	Beat	Police Station	Administrative Block	No. of Migratory Elephants	No. of Residential Elephants	Total No. of Elephants	Remarks
21.06.2016	Central Circle	Bankura(N)	Barjora	Barjora	Barjora	Barjora	27	2	29	
21.06.2016	Central Circle	Bankura(N)	Sonamukhi	Hamirhati	Sonamukhi	Sonamukhi		2	2	
21.06.2016	Central Circle	Bankura(N)	Gangajalghati	Gangajalghati	Gangajalghati	Gangajalghati	12	5	17	
21.06.2016	Central Circle	Bankura(N)	Gangajalghati	Amarkanan	Gangajalghati	Gangajalghati		2	2	
21.06.2016	Central Circle	Bankura(N)	Beliatore	Beliatore	Beliatore	Barjora		2	2	
21.06.2016	Central Circle	Panchet	Bishnupur	Basudebpur	Bishnupur	Bishnupur		1	1	
21.06.2015	Western Circle	Medinipur	Lalgarh	Bhadui	Lalgarh	Binpur-I	8	0	8	
21.06.2016	Western Circle	Rupnarayan	Goaltore	Goaltore	Goaltore	Garhbeta-II		2	2	
21.06.2016	Western Circle	Jhargram	Manikpara	Balibhasa	Jhargram	Jhargram		1	1	
21.06.2016	Western Circle	Kharagpur	Chandabila	Patina, Chandabila	Nayagram	Nayagram		2	2	
21.06.2016	Western Circle	Kharagpur	Nayagram	Kalmapukuria	Nayagram	Nayagram		2	2	
21.06.2016	Western Circle	Kharagpur	Hijli	Porapara	Kharagpur (Local)	Kharagpur - I		1	1	
21.06.2016	Western Circle	Kharagpur	Kalaikunda	Bardanga	Sankrail	Rohini		1	1	
21.06.2016	South West Circle	Purulia	Jhalda	Khamar		Jhalda-I	15		15	Reported by Purulia Div.
Total							62	23	85	

2. Profiling of Elephants and Creation of Elephant Dossier

IDENTIFICATION CHARACTERS:

1. Sex : Male   Age: 30-35 years   Body: Koomrah Bandh

2. Circumference of Front foot   : 179 cm

3. Shoulder height : 9 ft 6 inch / 289cm

4. Tusker / Makna : Tusker with both tusks present

5. Tusk Shape & size : Samtaal, right tip up-broken & tip up-sharp, 3ft 6 inch .

1. Back shape : Sloping Back

2. Tail : Pankhi dum

3. Special Identifying characters : Pink depigmentation marks on trunk base, head & ear lobes.

> ➤ Individual monitoring of elephants helps in knowing herds and solitary elephant movement. This is important for coordination. All Wildlife and Territorial Divisions are involved in this process.

> ➤ An elephant dossier should be maintained for all elephants which have the history of being ill-tempered. West Bengal Forest Department has maintained elephant dossiers which is very useful in HEC situations. Chhattisgarh FD has individually identified all elephants of the state.

Equipping of Forest Department Staff and Communities for HEC Management

1. High Beam Torches

Use of High Beam Torches by Chhattisgarh FD

2. Fluorescent Jackets

Use of fluoroscent jackets by Chhattisgarh FD

3. Well Equipped Vehicle

ADS Vehicles in Chhattisgarh and West Bengal

> ➢ Anti Depredation Squads (ADS) should be equipped with a vehicle, torch, siren, fire crackers and sometimes even double barrel guns. ADS should be trained regularly to address HEC situations in a systematic manner.
> ➢ It is essential that mahouts and kawadis are imparted training regularly in proper handling of elephants.
> ➢ Well equipped vehicles called Airawat in West Bengal FD and Gajaraj in Chhattisgarh are kept in place to attend to HEC emergencies.

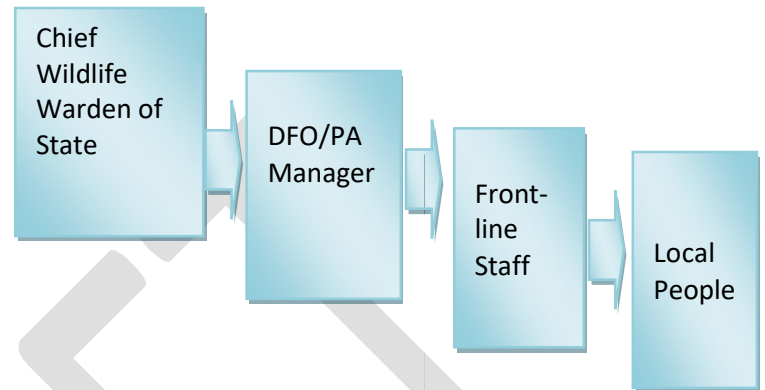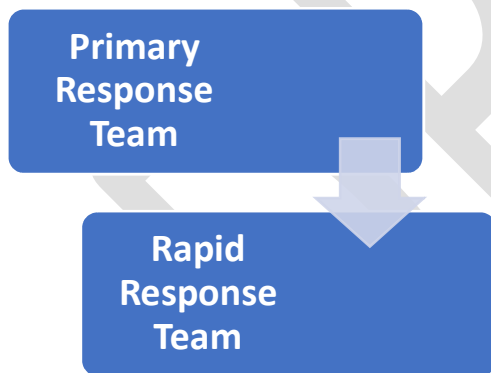# EMERGENCY MEASURES ADOPTED TO MITIGATE HUMAN ELEPAHNT CONFLICT

Emergency measures	
1. Mob Control to Prevent Casualties	**2. Ensure Clear Communication to Field Officials**

Chief Wildlife Warden of State → DFO/PA Manager → Front-line Staff → Local People

3. Primary Response Teams, Rapid Response Teams

Primary Response Team → Rapid Response Team

4. Anti Depredation Squads

ADS in Tamil Nadu

- ➢ Communication channels between the community and Forest Department should remain open at all times. The community should be informed contact numbers of the local member of frontline staff in case of arrival of elephants or crop damage. SFDs also need to set up a grievance redressal system for communities and the frontline staff.
- ➢ Develop Primary Response Team (PRT) comprising forest watchers/village volunteers in each village who could work as first level of defense to drive the elephant and keep crowd under control till the time the Rapid Response team (RRT) reaches. Used effectively in many states like Tamil Nadu, Karnataka, Kerala, West Bengal, Odisha.
- ➢ Anti Depredation Squad should be composed of trained staff and local volunteers.

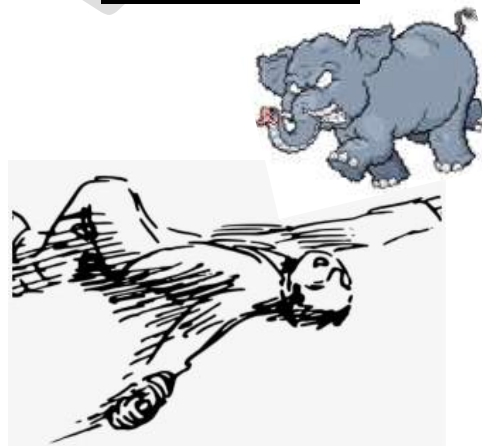| Emergency measures |
|:---:|

5. <u>Capture and Relocation</u>

Customised Airavat Vehicle operated and Elephant Capture/Removal by West Bengal FD

6. **Crop Compensation**

Crop compensation provided by FD

7. <u>Ex-gratia Payment</u>

Highest ex-gratia in Maharashtra -15lakhs

> ➢ In regions where elephants have repeatedly moved out into human-dominated landscapes primarily for crop raiding, the option of releasing the elephants in forests should be first examined. Relocated elephants should be fitted with GPS-based collars to monitor their movement with the option of recapturing them in case they again come into conflict. Successful in West Bengal.
> ➢ Compensation for crop damage should be expedited.
> ➢ In case of human death the ex-gratia should be paid as MoEF&CC guidelines or may be paid at enhanced rates as being done in Maharashtra and Kerala.

Establishment of Rescue Centers and Elephant Camps for Managing HEC

1. Elephant Camp Housing Kumki Elephants

Mudumalai, Tamil Nadu   *Wayanad Camp, Kerala*

2. Elephant Rescue Center

Tamor Pingla, Elephant Rescue Center, Chhattisgarh and M.R.Palayam, Tiruchi, Tamil Nadu

> ➤ Elephant camps in South India are housing kunki elephants which are used in patrolling, elephant drives and capture operations.
>
> ➤ All elephant rescue/ rehabilitation centers housing problematic elephants should get approval of CZA and follow CZA guidelines and MoEF&CC guidelines for their management.

Mitigation of HEC on Linear Infrastructures-Railway Tracks and Roads

1. Placement of Retroreflective Signages by the Side of Railway Tracks

Signage iIn Uttarakhand

2.   Hoarding in Railway station

Signage in Uttarakhand

3. Joint Patrolling

Joint patrolling in Rajaji NP, Uttarakhand & Karnataka

- ➢ Retroreflective signage giving warning to locopilots and drivers on elephant presence or movement are erected near roads or rails to ensure drivers of vehicles passing through these corridors can take due precaution upon seeing the signages. Therefore suitable signages could also be placed to create awareness about the corridor and its importance
- ➢ Hoardings near roads and rail tracks regarding not throwing waste food materials helps in spreading awareness towards elephant conservation.
- ➢ Night patrolling along the railway track passing through the corridor is essential during the elephant migratory season.
- ➢ Installing an Animal Detection System near the track to alert train drivers will also help.
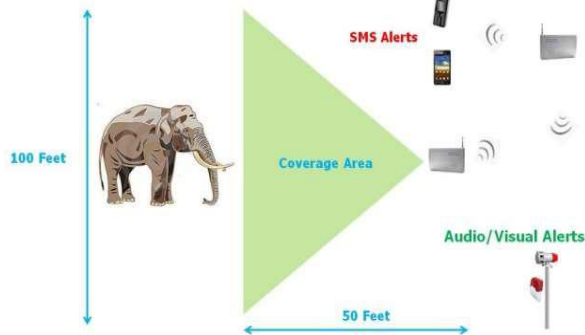
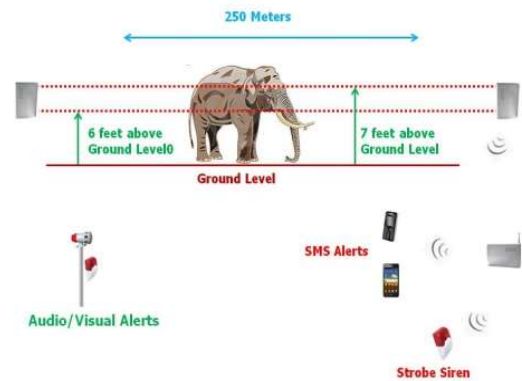# USE OF TECHNOLOGY TO MITIGATE HUMAN ELEPAHNT CONFLICT

Technological Applications to Address HEC

1. Early Warng System for Undulating and Flat Terrain

Early Warning System in Tamil Nadu

2. Technology Near Rail Lines	3. Cell Opearted Flashing LED Lights
West Bengal	*Valparai, Tamil Nadu*

> ➤ A system of sending SMS alerts of elephant presence has been developed to warn of elephant presence. A system of pulsating warning lights on towers that warns of elephant presence in the area has been developed.
> ➤ Mobile operated LED light alert indicators were installed in locations to signal the presence of elephants and their movements within 1km radius of each light. These indicators are equipped with a SIM card and fitted with red flashing LED bulbs on a long pole and are located in strategic places that are visible from up to 1km away. Effective in Valparai, Tamil Nadu.

CAPACITY BUILDING AND AWARENESS DRIVES TO MANAGE HUMAN ELEPAHNT CONFLICT
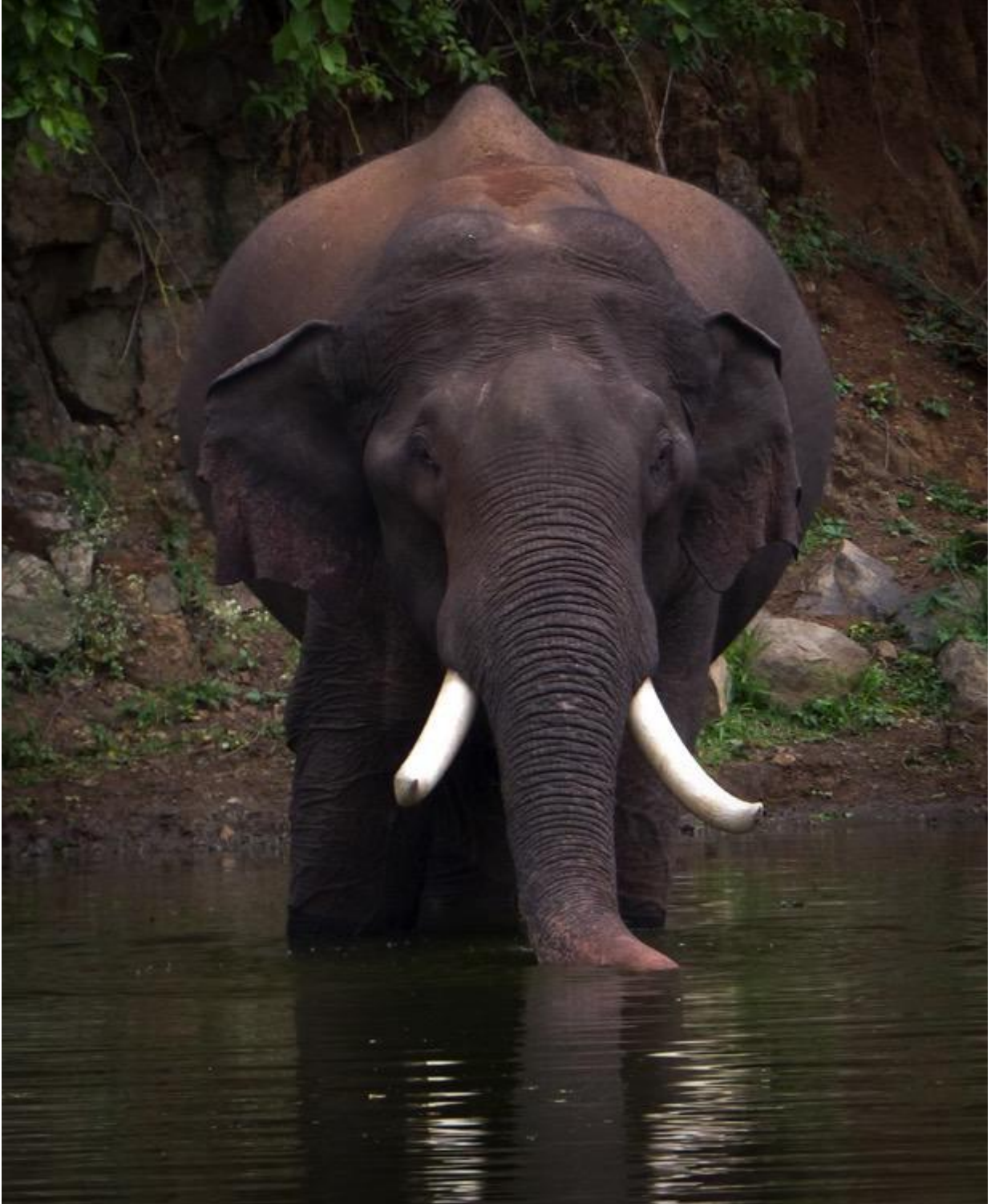
Capacity Building and Spread of Awareness Among Communities for Fighting HEC

1. Capacity Building of ADS

Capacity Building in West Bengal

2. Training of Mahouts

Training in West Bengal

3. Training of Departmental Staff

Training in Chhattisgarh

> ➢ Anti Depredation Squads (ADS) to be equipped with a vehicle, torch, siren, fire crackers etc. ADS should be trained regularly to address HEC situations in a systematic manner.
> ➢ It is essential that mahouts and kawadis are imparted training regularly in proper handling of elephants.
> ➢ Regular training of departmental staff is important.

Awareness among Communities for fighting HEC

1. Awareness Programmes

Awareness Programme in Andhra Pradesh and West Bengal

2. Awareness Programme on Radio

**Hamar Hathi Hamr Gonth Radio Alert programme " in AIR satation Ambikapur , Raipur , Bilaspur & Raigarh

Awareness Programme in Chhattisgarh

> ➢ The frontline staff shall communicate HEC management techniques to the community along with the publicity and awareness brochure. They will train the community in HEC management techniques. Communication channels between the community and Forest Department should remain open at all times.
> ➢ In Chhattisgarh information on elephant movement is also communicated through radios at specific timings on channel called "*Hamara haathi hamara gonth*".

Enlisting Involvement of Other Stakeholders

1. Involve Rest of Linear Agencies

Stakeholder meeting with S. Railways at Chennai

2. Involve Police & District Administration

Meeting by SFD with Telengana Police

3. Community Participation

Community orientation in West Bengal, Karnataka

4. Involvement of School Children

School Children in Assam and Tamil Nadu

➢ Multiple stakeholders like line Ministries of GoI and States should be involved along with the State Forest department and local communities for effective planning and implementation of mitigation measures.

➢ Communities should be involved to establish coordination between FD and community; to get reliable information on wild elephant, to manage situations till FD arrives at HEC site; for a systematic effort and less collateral damage.

➢ School children should be involved to spread awareness on elephant conservation.

Involve Stakeholders and Assist Communities to Mitigate HEC

1. Capacity Building Workshops

Training vets at Kochi, Kerala

Training of FD staff at Dehradun, Uttarakhand

2. Providing Transportation Facilities to School Children

Transporting school children in Karnataka

> ➢ Capacity building workshops of various stakeholders organized at regular intervals by PE Division and SFDs helps in updating and implementing better practices to mitigate HEC.
>
> ➢ In high elephant conflict zones, transportation facility by SFD to school children from their homes to schools helps in reducing the frequency of elephant encounters and thereby reducing conflict.

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