

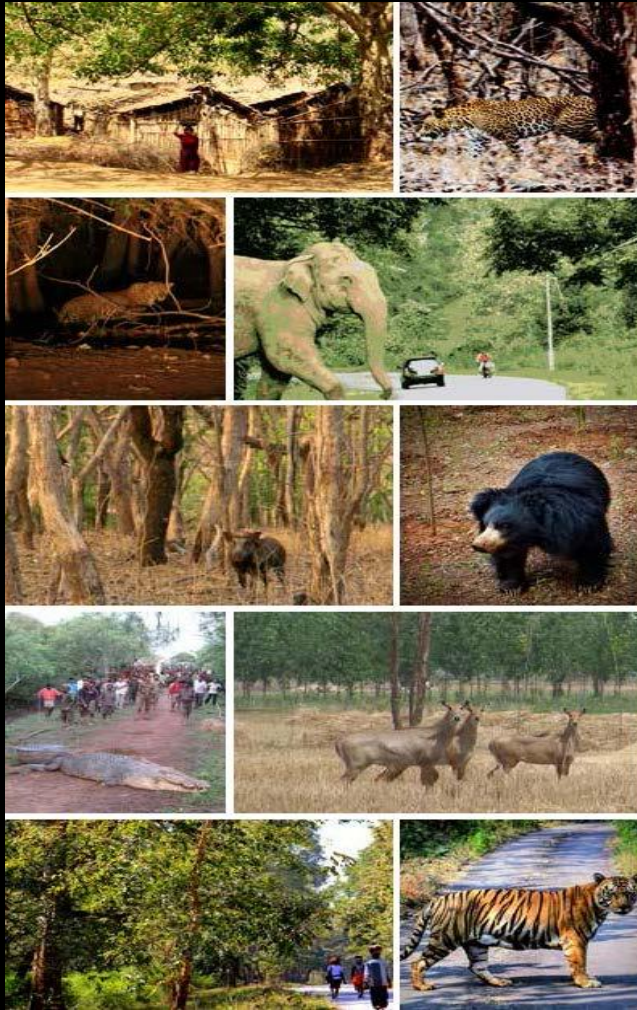
# Human Wildlife Conflict

## Legislation for mitigating conflict

P C Tyagi  
Former PCCF & CWLW (HOFF)



- National HWC Mitigation Strategy & Action Plan
- State HWC Mitigation strategy and Action Plan
- Divisional HWC Mitigation Strategy and Action Plan
- Guidelines, Supplementary Framework, Operating Procedure and Pilot Implementation Pack



Animals: Elephant, Indian Gaur, Wild Pig, Nilgai, Black Buck, Leopard, Rhesus macaque, crocodile and Snakes + Media and Occupational health and safety Development of competency Framework and Curriculum on HWC mitigation

*Chapter 4.3 Alignment with Existing Legal Framework*

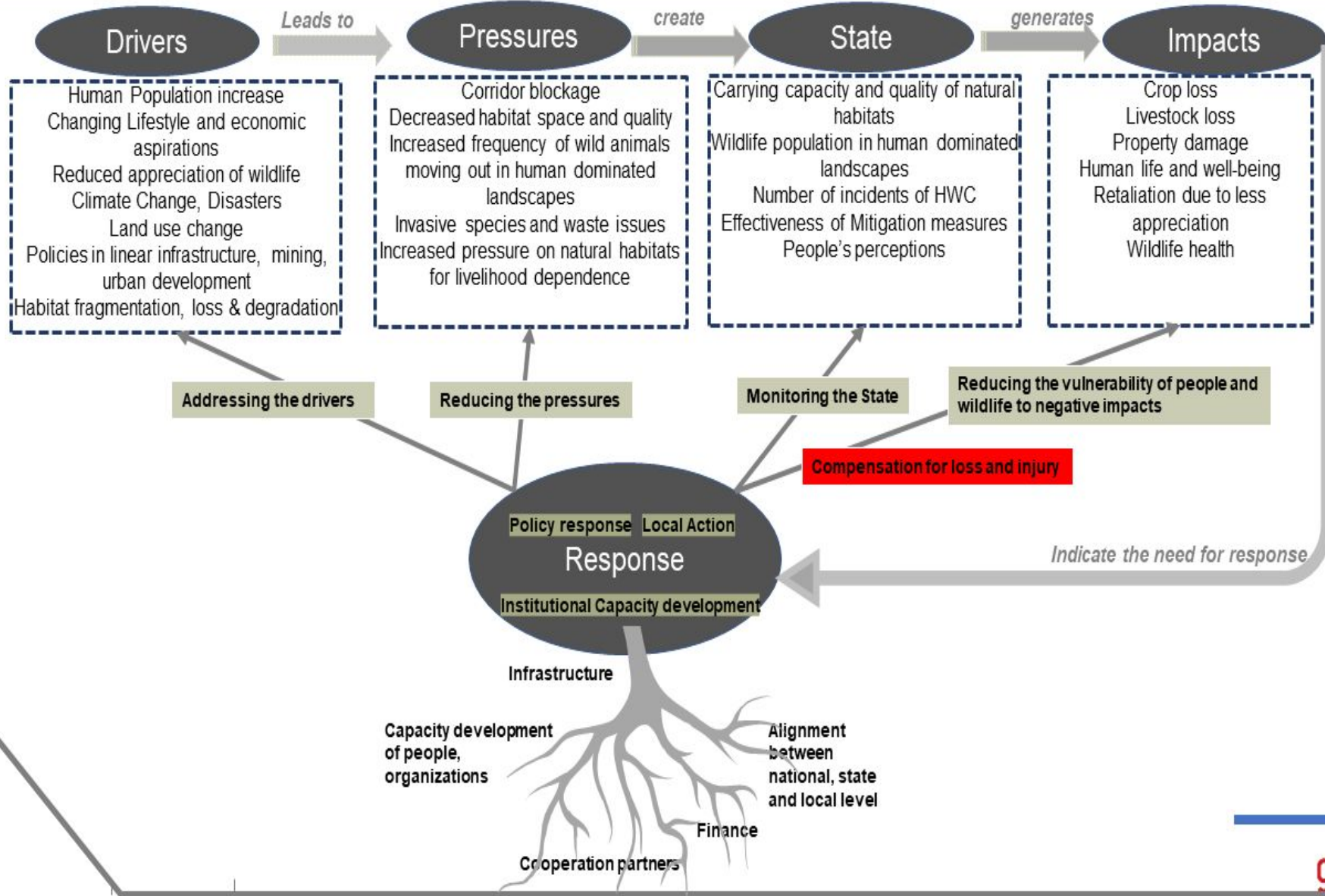
# **The National/State HWC Mitigation Strategy and Action Plan (HWC-NAP)**

- Steering & guiding document facilitating a holistic approach to mitigate human wildlife conflict, in an inclusive and sustainable manner
- Comprehensive, holistic and inclusive planning and implementing measures for HWC mitigation at the national level/State level. Presents policies, plans and programs of the forest sector and other sectors, and at all levels of implementation – national, state and local
- Advocates 5 strategic priority, 24 strategic goals with time frames to address the drivers; reducing the pressures ;collecting and collating data and information and rapid response; reducing impacts on humans and wildlife; and strengthening institutional and financial structures for effective implementation.
- Further to facilitate effective and efficient implementation of the HWC-NAP, a detailed “Implementer’s Guide and Toolkit” has been developed
- For cooperative planning and implementation in forest divisions a “Supplementary framework for developing division-level HWC Management Action plans” has been developed

# Guiding Principles and approach

- Working towards harmonious co-existence: Protect human and wildlife from conflict, Animal welfare concerns, Ex-gratia/compensation for loss of life and property.
- Holistic & integrated landscape level approach in addressing Human Wildlife Conflicts (HWC) by considering the thematic triangle of driver-prevention-damage mitigation
- Five priority areas: Addressing the drivers creating policy environment with cross-sectoral reduce conflict, Use , traditional knowledge and modern, Create database, generate clear information and data on conflicts and mitigation measures, Use economic, communication and cooperation means to reduce impact of HWC
- Participatory approach to plan, develop and implement HWC mitigation measures
- HWC- NAP as a capacity development tool

# Systems thinking: Conceptual Framework for HWC Strategy and Action Plan





# Strategic Priority & Goals

<p><b>Strategic Priority A:</b>Addressing the key drivers of Human-Wildlife Conflict in India</p>	<p><b>Goal 1:</b> HWC mitigation is integrated into overall development planning as well as policies and plans of key relevant sectors</p> <p><b>Goal 2:</b>All development activities are sensitive to potential human wildlife conflicts</p> <p><b>Goal 3:</b> Comprehensive and integrated land use planning ensures that wildlife habitats are protected from loss, fragmentation and degradation</p> <p><b>Goal 4:</b> People are enabled in working on their risk perception, improving their tolerance and enabling co-existence with wildlife in the same landscape</p>
<p><b>Strategic Priority B:</b> Measures to reduce the direct pressures leading to conflict situation</p>	<p><b>Goal 5:</b>Critical wildlife corridors, migratory routes, and movement paths of key wildlife species in conflict are identified, assessed and secured</p> <p><b>Goal 6:</b> Livelihood dependence of people on protected areas, corridors, forests and other natural habitats is reduced</p> <p><b>Goal 7:</b>Reduced incidences of wildlife entering or co-occurring in human dominated areas, by applying effective and wildlife-friendly preventive measures</p> <p><b>Goal 8:</b>Development of efficient and effective Response teams in each Forest division at the HWC hotspots in India</p> <p><b>Goal 9:</b>Restoration of habitats within protected areas and forests</p> <p><b>Goal 10:</b>Sustainable waste management and HWC-safe food storage in and around Protected Areas, and at HWC conflict hotspots</p>
<p><b>Strategic Priority C:</b> Availability of information and data on HWC to decision makers and field response teams for effective prevention and mitigating measures</p>	<p><b>Goal 11:</b> Wildlife research in the country addresses critical issues related to HWC mitigation</p> <p><b>Goal 12:</b> Evidence-based HWC mitigation measures that are effective and wildlife-friendly, are designed, implemented and customized for site specific needs</p> <p><b>Goal 13:</b>A national database is available, to assess, monitor and report on HWC and its mitigation in the country</p> <p><b>Goal 14:</b> States, agencies and other stakeholders systematically share data, information, experiences and knowledge with each other to co-create long-term solutions on HWC mitigation</p>



# Strategic Priority & Goals

<b>Strategic Priority D:</b> Reduction of the negative impacts of HWC on humans and wildlife	<b>Goal 15:</b> Reduced vulnerability of people
	<b>Goal 16:</b> Reduced vulnerability and enhanced occupational health and safety of field teams responsible for HWC mitigation
	<b>Goal 17:</b> Reduced vulnerability of wildlife species and animal welfare measures
	<b>Goal 18:</b> Most Vulnerable sections of the society such as poor, youth and women participate in planning, development and implementation of mitigation measures
<b>Strategic Priority E:</b> Effective implementation of National, State and local level HWC mitigation plans, by strengthening financial and institutional structures	<b>Goal 19:</b> Individual competencies and institutional capacities in forest and other key relevant sectors are strengthened for effective implementation of HWC mitigation in the country
	<b>Goal 20:</b> A system to support Mahouts and Daily Wage Workers is developed
	<b>Goal 21:</b> State level HWC Strategy and Action Plans (HWC-SAP) are developed and implemented in all States and UTs of India, taking a landscape approach
	<b>Goal 22:</b> Division level HWC Management Action Plans (HWC-MAP) in all States and UTs of India are developed and implemented
	<b>Goal 23:</b> Finance and infrastructure is available for implementing National, State and Divisional Plans
	<b>Goal 24:</b> Measures are in place for fostering partnerships between key stakeholders, for sustainability and greater outreach in HWC mitigation efforts

# Implementation Plan

---

- **‘Plan for stakeholder engagement, communication and awareness on the HWC-NAP & SAP:** Engaging key stakeholders in the preparation mapping the goals, outputs and indicators with the national priorities, establish monitoring framework & implementation to the National HWC Mitigation Forum, working groups and task forces, with members drawn from key sectors and stakeholder groups.
- Communication strategy with Innovative instruments such as web-based knowledge sharing platforms, single portal for all information and documents on human-wildlife conflict mitigation, such as national and state level strategy and plans, good practices, case studies, training materials, toolkit, etc.



# Legal strategies for conflict animals

- Strategies for dealing with Sch.I animals posing threat to human life
- 11 (1a) CWLW can permit hunting of animal which has become dangerous to human life or is so disabled or diseased beyond after satisfying that such an animal cannot be captured, tranquilized or translocated, this process to cause minimum trauma to the said animal.
- Option-1: Drive/ chase and allow it to escape to its natural habitat.
- Option-2: If drive fails, capture and rehabilitate it in the wild (i.e., release it in its original habitat or translocate it to an alternative habitat).
- Option-3: Capture and retain it in captivity, if the CWLW has reasons to believe that Option-1 & 2 is not viable.
- Option-4: Kill it, if the CWLW has reasons to believe that Options-1 and 2 & 3 are not viable.
- Option-4 can be exercised by CWLW if the wild animal cannot be captured, tranquilized and translocated

# Legal strategies for conflict animals

- Strategies for dealing with Sch. II to IV animals
- Animals posing threat to human life or indulging in destruction of crops, livestock, houses, follow the options as cited above.
- S.11(1)(b) permits killing, this option should be exercised only sparingly and till the CWLW /AO has enquired and concluded that all reasonable alternative options to protect crops / livestock have been exhausted. Permission limited to killing a limited number of animals for a limited period of time. Only habitual crop-raiders / livestock-killers should be targeted for killing
- Wild animal is involved in human-killing just by accident, allow to return to its natural habitat.
- Any animal continues to remain in human area inspite of driving/chasing and deliberately seeks humans, injures and kills, should be eliminated as it is habitually indulging in human killing ( Make distinction between opportunistic killing and habitual animal.) Opportunistic, handle through barriers, scaring tactics and precautionary measures, habitual through capture, translocation and if situation so demands killing.

# **Legal strategies for conflict animals**

## **Permission for Hunting (Special purpose)**

Under sec 12, CWLW can grant permit to hunt by an order in writing, with the prior permission of the central government (in respect to animals listed in Schedule I) and the state (in respect to any other wild animal) for the following purposes, education, scientific research, scientific management.

## **Destruction/removal of Wildlife from Sanctuary and National Park**

The CWLW can also give permission to "destroy, exploit or remove" any "wild life" in a protected area (PA) for the "improvement and better management of wildlife" {sections 29 and section 35 (6)} with the permission of the state government and the state wildlife board (in case of sanctuaries) or the national wild life board (in case of national parks). (SC:any non forestry activity/removal of biomass in PA not permitted, without prior permission of SC.

## **Declaration of any Wild animal as vermin**

State Govt can approach Central Govt to declare any wild animal except those specified in sch I and Part II of Sch II to be vermin for any area and for such period as specified, wild animal be deemed to have been included in schedule V (Vermin) (section 62)

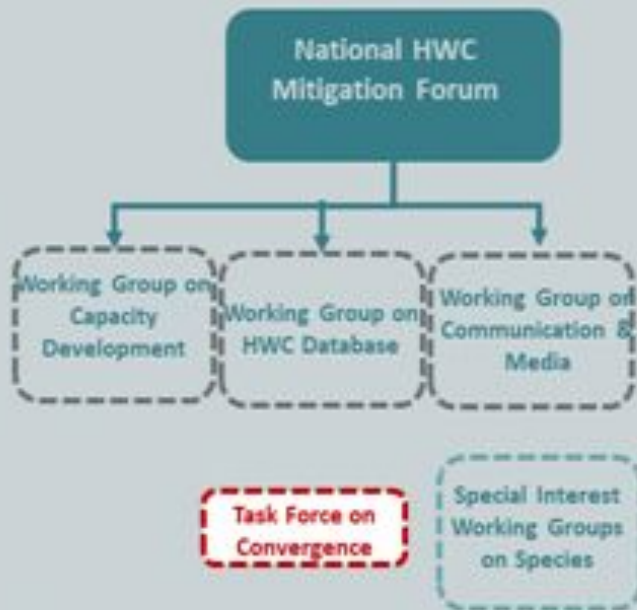
All animals, and their products, hunted legally or illegally, except when they are a notified vermin, are government property (section 39). Vermin can be killed & consumed

# Institutional mechanism for Implementation of the HWC-NAP

Task Force on  
Readiness (2021-22)

## National HWC Mitigation Cell

Secretariat for Implementation and Coordination of HWC-NAP



National level

## State HWC Mitigation Forum



State Level



## Role of Stakeholders

- Primary stakeholders are the policy makers, legislature's, MoEF & CC (Wildlife section), Forest department, apart from this the wildlife lawyers and NGOs are the other interested stakeholders.
- Railways should incorporate rules for dealing with such hazards caused due to wild animals in their Safety Manual as per provisions of The Railway Act, 1989.
- NHAI/State Highways Authority: There should be special rules and provision included in Highway manual and the authority which maintains and manages the national highways in consonance with the National Highway Act, 1956 to prevent such accidents. Also, mitigation measures for linear infrastructure should be followed.

## Role of Stakeholders

- Agriculture and horticulture department :Work out modalities and strategy to mitigate and reduce conflict, type of crops grown and insurance to offset loss to the farmer. The Revenue Code should have a chapter on such exigencies
- Role of Police:The Police manual should have instructions how to manage conflict situation and their specific roles
- District Disaster Management Authority :DDMA Manual should incorporate HWC mitigation measures and ensure capacity building of its team to ensure that they provide assistance to the DFO/Wildlife manager in the event of HWC.
- Veterinary Department: The veterinarian should be aware of the provisions in Indian Veterinary Council Act (1984) and Indian Veterinary Council Rules (1985), in respect of capture/ tranquilization and treatment of elephants/s.

# Addressing Drivers & Pressure

- Degradation, fragmentation & loss of habitat
- Dev activities near forest and growing human population & settlements
- Heavy human dependence on forest, most attacks take place when people are inside forest for fuel, fodder, livelihood or daily activities
- Declining prey base in the forest for carnivores
- Changes in the feeding habits of the animals
- Depletion of forage, water and other critical requirements
- Population beyond carrying capacity
- Most of the orchards and agriculture fields been which were acting as buffer areas between forest land and human settlements have been developed into residential areas
- Linear infrastructure Project (Road, Railway line, canal etc.).
- Lack of livelihood opportunity for local communities

## **HWC mitigation operation personnel**

---

- Rapid Response team(RRT) in district having HWC & additional RRT during the conflict season led by Ranger / Senior Deputy Ranger and comprise 10-12 permanent / contractual staff with adequate equipment communication & transport
- Range level Primary Response team (PRT)
- Village level Primary Response team (PRT)



# Major Wild animals involved in HWC

Blue bull, Elephant, Rhesus macaque, Bonnet macaque, Wild pig, Indian bison, Blackbuck, sloth bear, brown bear, brown, Tiger, Common leopard, Crocodile and snakes



# Conflict landscape

- Inside the Forest (low/moderate):
  - People entering forests (reduce dependency, construct toilet, provide subsidy for energy needs)
  - People living in forests (dependency and interface, relocation and rehabilitation)
- Interface area (moderate/high):
  - Clear and hard boundary (barriers/guarding)
  - Diffuse boundary (physical barriers)
  - Mosaic of forest and human use area (consolidation)
- Inside Human-use area (low/very high):
  - Agriculture/rural areas
  - Estates/agro-forestry areas
  - Urban areas

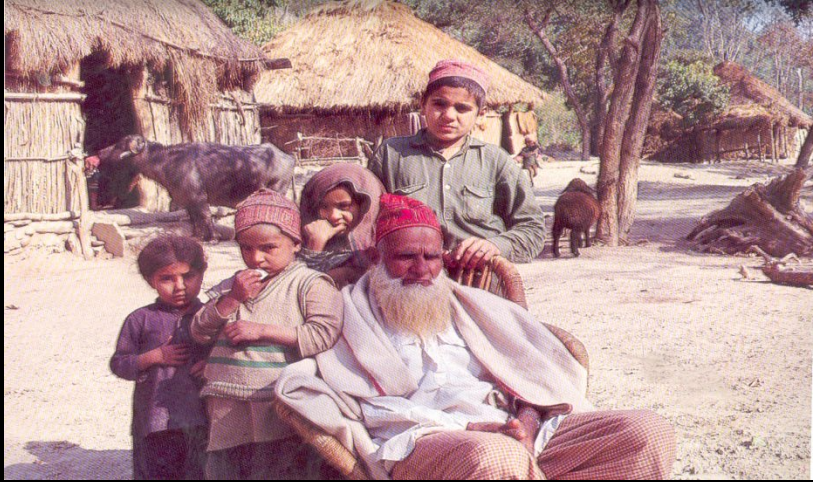


# Biotic pressures on the wildlife habitats is increasing





# Human settlements inside wildlife habitats



Gujjars in Rajaji NP



# Compensation

- Compensation is meant to provide relief to people and to win their support and sympathy for wild animals and forest staff.
- 1. Inadequate and delayed payment of compensation cause dissension among public.
- 2. Concept of compensation has changed public perception of wild animals from 'nature's creation' to 'Their (Forest Department's) animals'.
- 3. Too much emphasis on compensation in wildlife management.
- 4. Misuse of compensation.
- Alternatives to Cash Compensation:
  1. Relief in the form of food-grains & building-material
  2. Subsidy for growing alternative crops and alternative livelihoods
  3. Support for setting up wildlife-proof barriers
  4. Reward by enhanced allocation for eco-development
  5. Insurance of human-life and crops
  6. Categorizing wildlife-depredation as 'Natural Calamity' and providing relief to the victims through district administration

# Management of conflict

Conflict can be minimized by a combination of strategies:

## Animal oriented strategies:

### A. Immediate Measures:

Measures to drive away the animal from the problem spot.

### B. Long Term Measures:

Creating conducive habitat for the animals

### C. Special Measures:

Measures based on understanding the nature and limitations of the target animals and exploiting the same.

### D. Dealing with Problem Animals:

Identify and remove a problem animal when it becomes a liability.

## A. Immediate Measures

- Quick Response Teams (RRT & PRT) Hulla-parties, Kumki elephants
- Distribution of crackers, kerosene, search-lights, etc. to villagers
- Crop-guarding posts (Machans)



## B. Long Term Measures

- Exclusive reserves (National Park, Sanctuary, Conservation Reserve) for wild animals
- Habitat improvement (Food, Water, Cover)
- Corridors for wild animal movement (for linking fragmented habitats)
- Population Management (based on Carrying Capacity or the degree of conflict) [e.g. sterilization of monkeys and dogs]
- Reduce biotic pressure (i.e. regulate fire, grazing, fodder collection, etc.)



## **D. Identifying and removing a problem animal**

- A problem animal (habitual man-killer, cattle lifter or house-breaker) may be a liability and may defeat the purpose of conservation.
- Good wildlife management calls for quick 'removal' of a problem animal.
- The WPA-1972 permits 'Removal' of a problem animal in the following order:
  1. Translocation
  2. Capture
  3. Killing
- The WPA-1972 stipulates that capture or translocation should be done so as to cause minimum trauma to the animal in question.
- The WPA-1972 permits killing or wounding in good faith of any wild animal in defense of oneself or any other person.



# Capturing



# Translocation

## Limitations:

- Safer habitats are often difficult to find.
- Results sometimes in shifting of the problem.
- Homing instinct in some animals.
- Health hazards.
- Techniques and protocols for group translocation not fully developed.



# Killing

---

- A proper inquiry before the proclamation and correct identification of the 'culprit animal' is a must.
- Availability of a skilled hunter and correct type of weapon is sometimes a limitation.
- Tranquillizers offer the least traumatic way of killing.
- Chemical immobilization also provide an opportunity for verification.



# Managing people



## Managing human-beings

---

Human-management strategies should aim at:

- Increasing tolerance of human-beings for wild animals.
- Reducing competition between wild animals and human-beings for resources (space, food and water).
- Minimizing interface (Contact) between wild animals and human-beings.
- Encouraging 'wildlife-compatible' lifestyles.



# 1. Enhancing people's tolerance





# 2. Reducing competition for resources



# **Need to enhance the capacity of the State Forest Departments to deal with HWC**

- Shortage of staff
- Lack of knowledge among staff about wildlife management techniques (identification, census, habitat manipulation, weed control, HEC management, etc.)
- Shortage of experienced veterinarians
- Shortage of kumki elephants
- Shortage of experienced mahouts and trainers of big elephants
- Shortage of tranquillizing experts & drugs
- Shortage of power fencing experts
- Lack of experience regarding translocation
- Shortage of funds

# Prevalent Reproductive control options for mitigating crop damage by wild animals

Measure	Type
<b>Reproductive control</b>	<b>Immunocontraceptive –</b> Porcine Zona Pellucidae (PZP) (Female) Gonadotropin-Releasing Hormone (GnRH) (Male and Female)

Applicability
Drugs expensive
Not tried in India
<b>Positive results for mammalian herbivores</b>



# Indian experience and expertise

---

## Capture and translocation:

- Limited Indian experience: mass capture of blackbuck and translocation in Andhra Pradesh Srisaillam sanctuary to Nagarjuna Sagar using crude method.
- Most of the captured animals died of capture myopathy, within a month of translocation.
- Mass capture also tried for swamp deer and Spotted deer in Kanha (MP) to STR (13 nos) and Chattisgarh (Captive Population) (50 nos) using Bomas
- Mass capture and translocation of 19 Indian Bison from Kanha to Bandhavgarh was done successfully and animals have stabilised
- Capture and translocation of two wild buffalo from Assam to Chattisgarh

# Options for management of populations

---

- Translocation – expensive
- Contraception – impractical
- Conservation/safari/sport/ trophy hunting – can generate revenues and community incomes but not legally tenable
- Culling – expensive if end product cannot be sold.

## Way Forward

---

- Maintain Habitat Connectivity between Sources
- Spatio-temporal separation people and wildlife --- Zonation
- Control Problem animals immediately --- Backlash to populations and Species
- Large Inviolate Spaces for Conservation: However, our PAs are too small for viable populations of most spp.
- co-existence with humans is an essential conservation strategy.
- Conflict is inevitable, managing conflict by mitigation, incentives, and awareness is the crux of successful conservation
- Understand the social, economic, and ecological context of the conflict is needed for appropriate mitigation

*Thank you*