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Ministry of Environment, Forest and Climate Change, Government of India

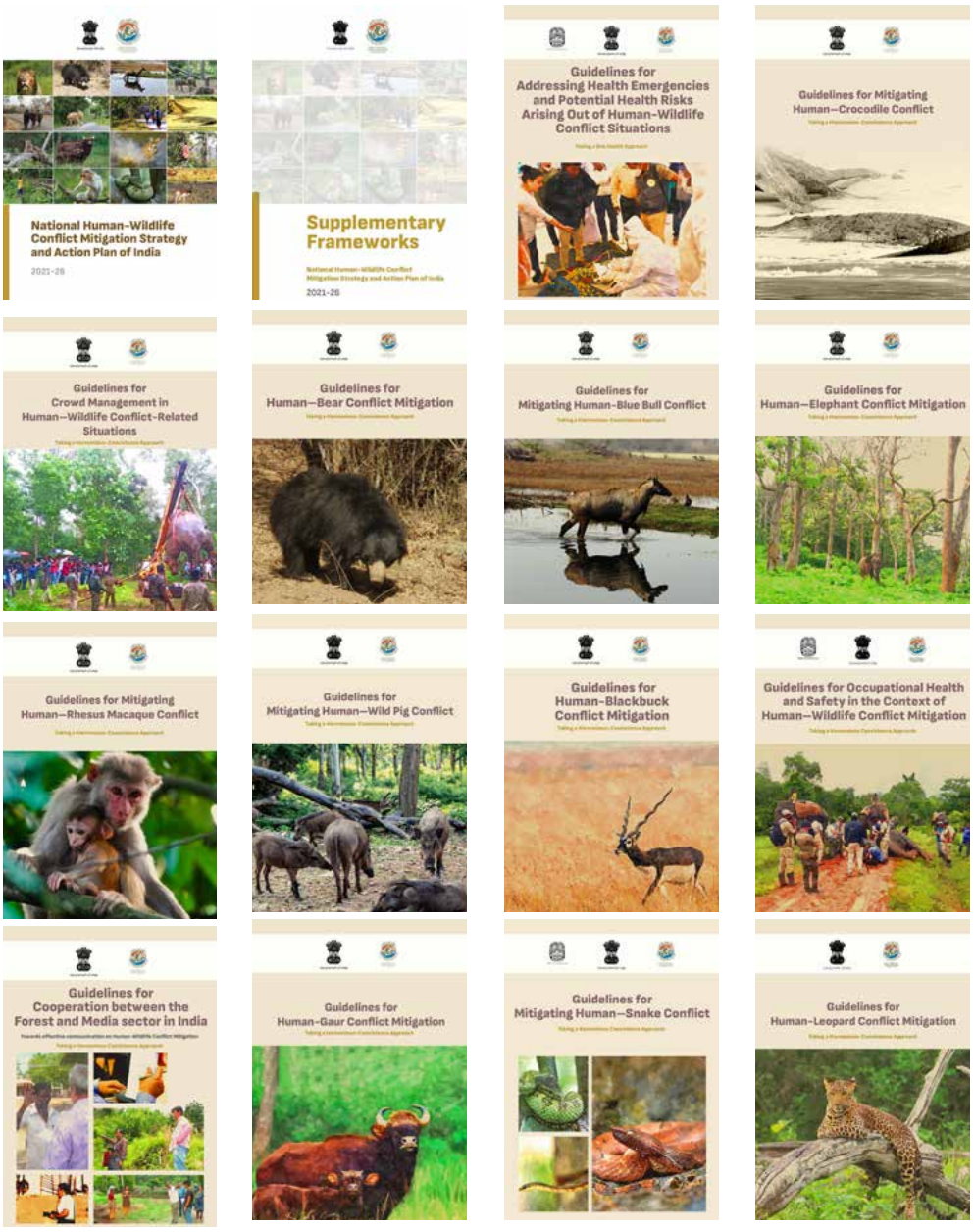
Directorate of Forests
Government of West Bengal

Training Resource Material

Content Module 3

Legal, Policy, and Administrative Framework for HWC Mitigation in India

A Holistic Approach to Human-Wildlife Conflict (HWC) Mitigation in India



Imprint
Training Resource Material: A Holistic Approach to Human-Wildlife Conflict (HWC) Mitigation in India

Module HWC-01:	An Introduction to Human-Wildlife Conflict Mitigation: Taking a Holistic and Harmonious Coexistence Approach
Module HWC-02:	The Overall Context: Understanding HWC in a Development Context
Module HWC-03:	Legal, Policy, and Administrative Framework for HWC Mitigation in India
Module HWC-04:	Tools and techniques for effective and Efficient Human-Wildlife Conflict Mitigation
Module HWC-05:	Strengthening Community Engagement for Effective and Sustainable Mitigation of Human-Wildlife Conflict
Module HWC-06:	Operationalizing the Holistic and Harmonious coexistence Approach to Mitigate Human-Wildlife Conflict through Cross-sector Cooperation
Module HWC-07:	Holistic, Effective and Ethical communication on Human-Wildlife Conflict Mitigation: Taking a Harmonious Coexistence Approach
Module HWC-08:	A Primer on Developing Leadership and other Non-technical Competencies for HWC Mitigation
Module OH-01:	An introduction to the One Health Approach, Zoonotic and Other Emerging Diseases

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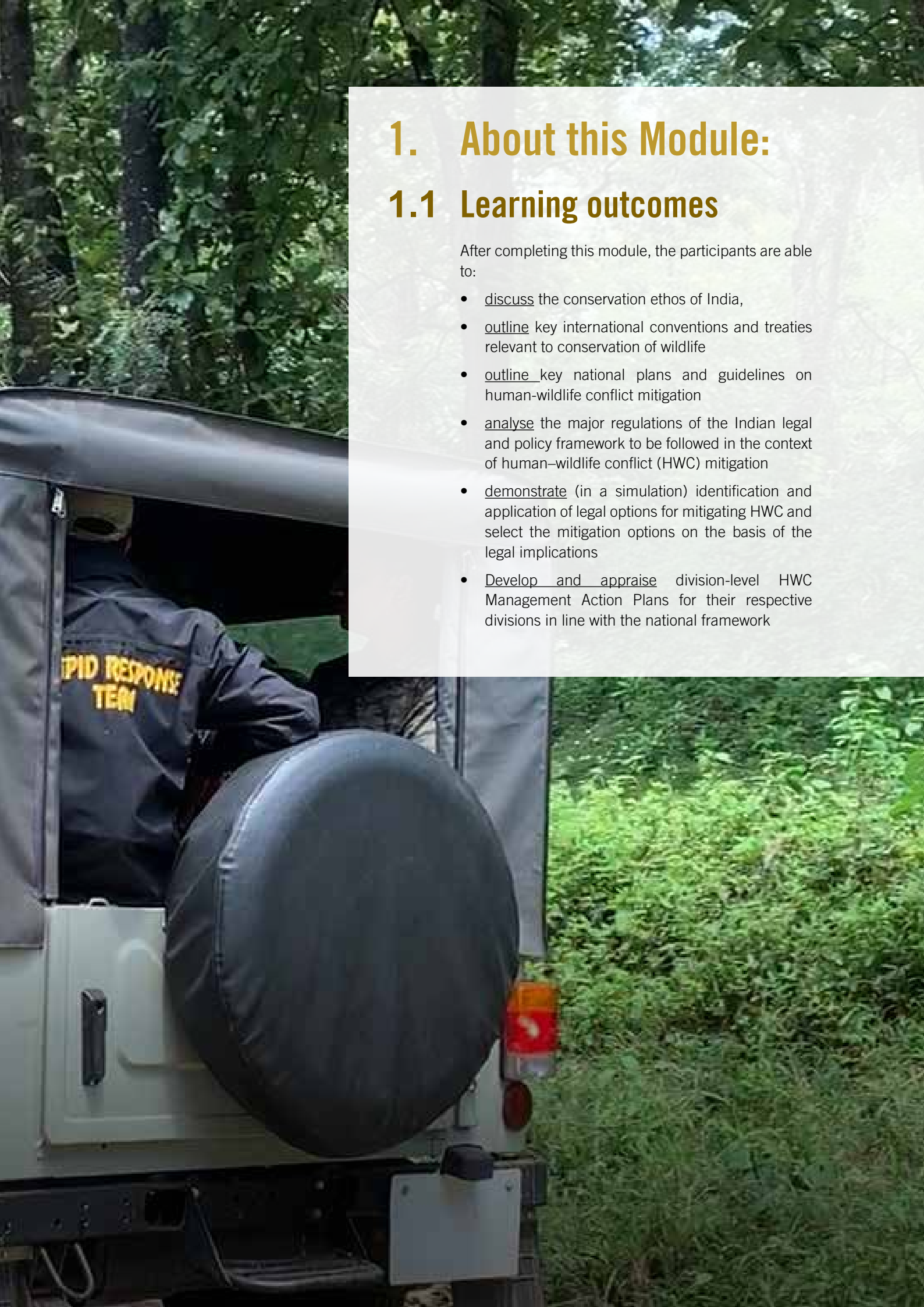
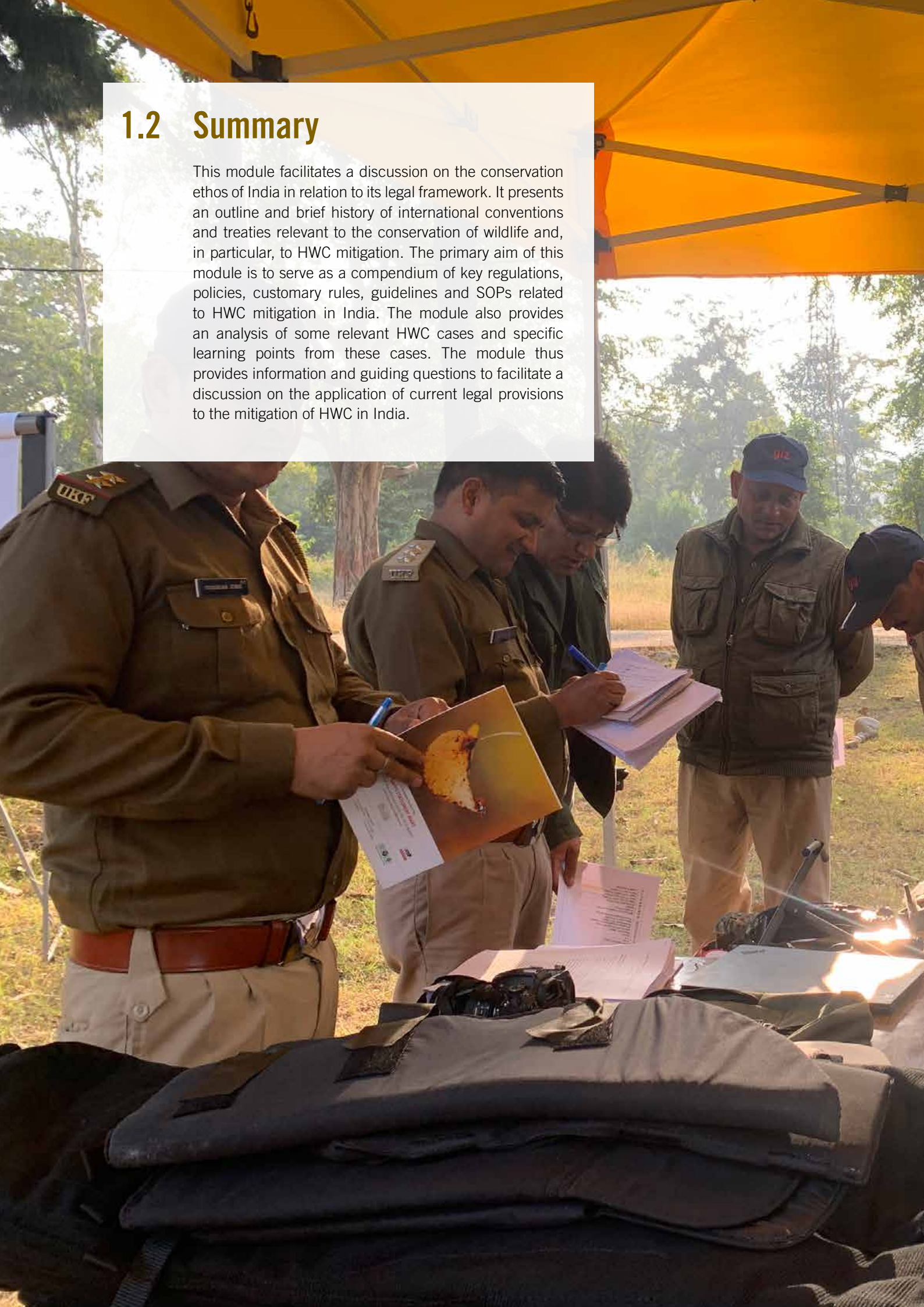


1. About this Module:

1.1 Learning outcomes

After completing this module, the participants are able to:

- discuss the conservation ethos of India,
- outline key international conventions and treaties relevant to conservation of wildlife
- outline key national plans and guidelines on human-wildlife conflict mitigation
- analyse the major regulations of the Indian legal and policy framework to be followed in the context of human–wildlife conflict (HWC) mitigation
- demonstrate (in a simulation) identification and application of legal options for mitigating HWC and select the mitigation options on the basis of the legal implications
- Develop and appraise division-level HWC Management Action Plans for their respective divisions in line with the national framework



1.2 Summary

This module facilitates a discussion on the conservation ethos of India in relation to its legal framework. It presents an outline and brief history of international conventions and treaties relevant to the conservation of wildlife and, in particular, to HWC mitigation. The primary aim of this module is to serve as a compendium of key regulations, policies, customary rules, guidelines and SOPs related to HWC mitigation in India. The module also provides an analysis of some relevant HWC cases and specific learning points from these cases. The module thus provides information and guiding questions to facilitate a discussion on the application of current legal provisions to the mitigation of HWC in India.

1.3 Key messages from this module

- Living in harmony with nature has been an integral part of Indian culture. This has been abundantly reflected in a variety of traditional practices, religious beliefs, rituals, folklore, arts and crafts and the daily lives of the Indian people from time immemorial. The present-day global concerns about sustainable development and conservation of natural resources, spanning the two decades between the Stockholm Conference of Environment, 1972, and the United Nations Conference on Human Environment and Development (Earth Summit), Rio de Janeiro. 1992, are of recent origin in comparison with the long tradition and cultural ethos of nature conservation in India.
- The Wild Life (Protection) Act 1972 provides for the protection of wild animals, birds and plants and for matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country. Sections 11 and 12 of the Wild Life (Protection) Act, 1972 have great significance in HWC mitigation and management. Section 11 of the Wild Life (Protection) Act, 1972 states that in certain circumstances hunting of wild animals is permitted. If the Chief Wildlife Warden is satisfied that an animal listed in Schedule I, Schedule II, Schedule III or Schedule IV is becoming a threat to human life or any property or such an animal has been affected by an incurable disease from which it cannot recover, the Chief Wildlife Warden may granting permission to a person to hunt it, stating the reasons in writing.
- To effectively and responsively address the issue of HWC, the Ministry of Environment, Forest and Climate Change (MoEF&CC), the Government of India has facilitated, under Indo-German Cooperation, the development of the National Human–Wildlife Conflict Mitigation Strategy and Action Plan (HWC-NAP) for India taking a participatory, integrated, and inclusive approach. HWC-NAP is a guiding document facilitating a holistic approach to mitigating HWC, inclusively and sustainably, and is supported by four supplementary frameworks.
- Ministry has issued 14 guidelines in 2023 that aim to facilitate a common understanding among key stakeholders on what constitutes effective and efficient mitigation of the species-specific conflict in India, leading to co-existence, and to ensure standardization in performing mitigation operations most effectively and efficiently, with minimum damage to humans and animals
- The Standing Committee of the National Board of Wildlife (SC-NBWL) in its 60th meeting held on 05th January has approved the advisory for the management of Human-Wildlife Conflict (HWC) in the country. The advisory makes important prescriptions for the States/ Union Territories for dealing with Human-Wildlife conflict situations and seeks expedited inter-departmental coordinated and effective actions
- The Ministry from time to time has issued advisories/guidelines to States/ Union Territories to deal with human-wildlife conflict. The Ministry has also received representations in this regard from various parts of the country. In continuation of the Advisory issued by the Ministry on 06.02.2021, the following guidelines are issued for the management of wildlife/mitigation of crop damage due to human-wildlife conflict.

1.4 Key terms

#Act In the legal parlance the signifies the result of a public deliberation or the decision of a prince, legislative body, council, court of justice or magistrate. Also, it means a decree, edict, law, judgment, resolve, award or determination.

#CITES This stands for the Convention on International Trade in Endangered Species of Wild Fauna and Flora, an international agreement between governments aiming to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES protects endangered species by restricting and regulating their international trade through export permit systems. For species threatened with extinction that are or may be affected by trade (listed in Appendix I of the convention), export permits may be granted only in exceptional circumstances and subject to strict requirements; the importation of these species also requires a permit, while trade for primarily commercial purposes is not allowed. For species that may become endangered if the trade is not subject to strict regulation (listed in Appendix II), export permits (including for commercial trade) can only be granted if the export is not detrimental to the survival of that species and if other requirements are met. For species subject to national regulations and needing international cooperation for trade control (listed in Appendix III), export permits may be granted for specimens not obtained illegally.

#Convention on Biological Diversity (CBD) This is an international legal instrument for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources" that has been ratified by 196 nations. Its overall objective is to encourage actionsthat will lead to a sustainable future, and CBD is a common concern of humankind. It covers biodiversity at all levels—ecosystems, species and genetic resources—encompassing all possible domains that are directly or indirectly related to biodiversity and its role in development, ranging from science, politics and education to agriculture, business, culture and much more.

 # Convention on the Conservation of Migratory Species of Wild Animals (CMS). The adoption of CMS at Bonn in 1979 required cooperation among "range states" that host migratory species that regularly crossing international boundaries. For Appendix I species that are considered as endangered, states must conserve and restore their habitats; prevent, remove or minimize impediments to their migration; prevent, reduce and control factors endangering them; and prohibit their taking. With regard to other species that have an unfavorable conservation status (listed in Appendix II), range states undertake to conclude agreements to maintain or restore them to a favourable conservation status.

#Easement Act. IThis is an act to define and amend the law relating to easements and licenses. An easement is a right that the owner or occupier of certain land possesses, as such, for the beneficial enjoyment of that land, to do and continue to do something, or to prevent and continue to prevent something being done, in or upon, or in respect of, certain other land not his own. "Easement is that legal servient which can be exercised on some other piece of land specifically for the beneficial enjoyment of one's own land. Right of easement is basically a form of privilege, the integral part of which is to do an act or prevent certain acts on some other land for enjoyment of one's own land".

 # Environment Protection Act, 1986. This is an act enacted in the wake of the Bhopal Gas Tragedy, or Bhopal Disaster. The purpose of the act is to implement the decisions of the United Nations Conference on the Human Environment. They relate to the protection and improvement of the human environment and the prevention of hazards to human beings, other living creatures, plants and property. The Act is an "umbrella" legislation designed to provide a framework for the central government to coordinate the activities of various central and state authorities established under previous laws, such as the Water Act and the Air Act.

#Global convention. Global conventions are international treaties or agreements between countries. "Global convention" is often used interchangeably with terms such as "international convention", "international treaty", "international agreement", "compact", and "contract between states". The existing international conventions cover different areas, including the environment, biodiversity, wildlife, trade, science, crime, disarmament, transport and human rights.

#Guidelines. A guideline is an indication or outline of policy or conduct.

 # International treaties. These are multilateral agreements and protocols that are the primary source of international law. The Vienna Convention on the Law of Treaties (1969 Vienna Convention) defines "treaty" as an "international agreement concluded between states in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments and whatever its particular designation". Therefore a treaty or convention is an instrument that is intended to create legal rights and obligations between parties.

#National Wildlife Action Plan. India unveiled the third National Wildlife Action Plan for 2017–2031, spelling out the future road map for wildlife conservation. The third action plan comes after the first plan (1983) and the second plan (2002–2016). The third National Wildlife Action Plan is unique as it represents the first time that India recognized the concerns relating to the impact of climate change on wildlife and stressed that the actions that need to be taken for mitigating it must be integrated and adopting in wildlife management planning processes.

#Multilateral Environment Agreements (MEAs). MEAs are agreements between countries that may take the form of "soft-laws", setting out non-legally-binding principles that parties are obligated to consider when taking actions to address a particular environmental issue, or "hard-laws", which specify legally-binding actions to be taken toward an environmental objective. Amongst the global environmental issues that MEAs are designed to respond to are loss of biological diversity, adverse impacts of climate change, depletion of the ozone layer, hazardous wastes, organic pollutants, marine pollution, trade in endangered species and destruction of wetlands.

#Policy. A policy is a principle or course of action adopted or proposed as desirable, advantageous or expedient, one formally advocated by a government, a definite course or method of action selected from alternatives and in light of given conditions to guide and determine present and future decisions. It can also be a high-level overall plan embracing the general goals and acceptable procedures, especially one of a governmental body.

#Population management. "Wildlife population management refers" to any strategy that seeks to maintain a target population at a level that can be supported by the ecosystem by biological or legal methods. This can involve protecting a threatened population from declining further or even re-stocking a population. Conversely, when the numbers of a target population have become too great to be sustained by the food or territory available, then predators can be introduced, or a human-mediated cull can be carried out. Culls have also been carried out when an infectious disease is present in a population—the deliberate killing of the infected animals can help protect other members of the population as well as other species in the same habitat. Put another way, population management strategies focus on the habitats of the species of concern.

#Rules. A law, rule, regulation, precept, statute, ordinance or canon is a principle governing action or procedure. "Law" implies imposition by a sovereign authority and the obligation of obedience on the part of all subjects to that authority. "Rule" is used in more restricted or specific situations.

#SOP. A standard operating procedure (SOP) is a set of step-by-step instructions compiled by an organization to help workers carry out complex routine operations. SOPs aim to achieve efficiency, quality output and uniformity of performance while reducing miscommunication and failure to comply with the regulations of an organization.

#Wild Life (Protection) Act, 1972. This is an act that provides for the protection of wild animals, birds and plants and for matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country.


Human Wildlife
Conflict Mitigation in India

2. Introduction

2.1 A Summary of the overall landscape of law, policies, plans and guidelines relevant to HWC mitigation in India:

The history of conservation in India is as old as its civilisation. In Indian mythology, animals were worshipped as incarnations of different gods, and any act of harm to the animals was considered an ethical offence. One of the best-known examples of this is the practice of protecting sacred spaces and elements. These were areas or species left largely untouched because of the religious sentiments associated with them. They included patches of forest, lakes and ponds, high-altitude valleys or peaks, islands, marine stretches, mangroves, grasslands and parts of nearly every other kind of ecosystem. Such sacred areas were associated with certain deities that resided in them, and fear of the deity bringing ill-fortune prevented people from violating the rules of these sacred spaces. Extraction of resources, if at all, happened after intricate religious rituals. Many of these sacred elements continue to survive even today although they are slowly becoming eroded because of changing social and cultural environments. In addition, there have been numerous examples of communities protecting different plant and animal species for religious or cultural purposes. For example, protection of the blackbuck, the peafowl, freshwater turtles in temple tanks, fish such as the mahseer or the trout in river stretches and keystone species such as the banyan *(Ficus bengalensis)*.

After independence, the constitutional provisions of our country were also in help for the conservation of wildlife. In India, there are several laws for managing HWC, such as the Indian Forest Act 1927, Wild Life (Protection) Act 1972, Environment (Protection) Act 1986 and Biological Diversity Act 2002. Besides, policies such as the National Forest Policy, National Wildlife Action Plan also have a direct bearing on HWC mitigation, apart from a dedicated National Human-Wildlife Conflict Mitigation Strategy and Action Plan of India (2021-26), 10 species-specific and 4 issues-specific HWC mitigation guidelines, two advisories, and several Standard operating procedures (SOPs), based on these laws, have been developed to deal with the emergency situations arising due to HWC.

The National Tiger Conservation Authority (NTCA) has developed SOPs to deal with emergencies arising due to human-tiger conflict.

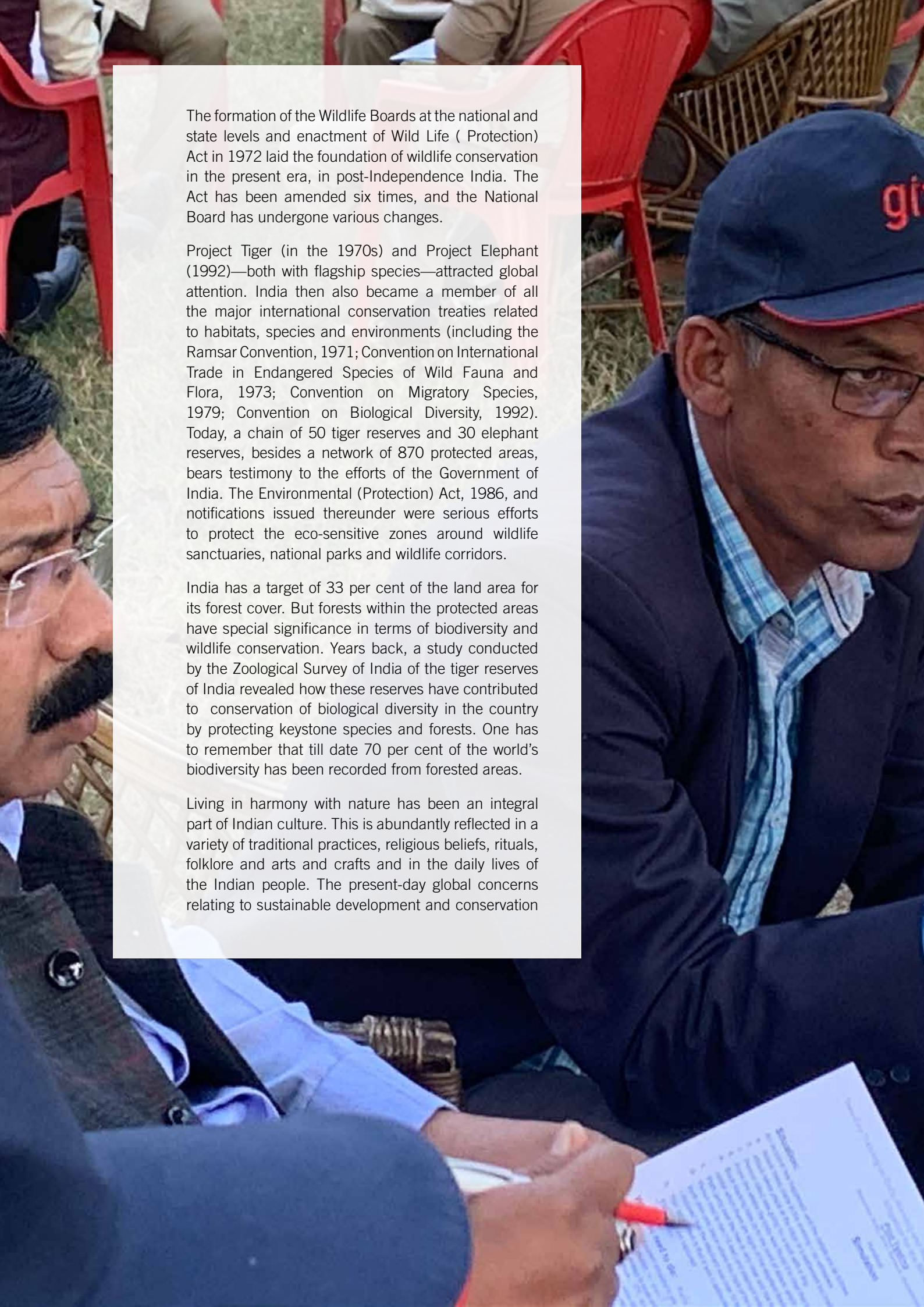
Compensation/*ex-gratia* payments, crop insurance schemes, MNREGA and Namma Sangha are some of the government programmes contributing to HWC mitigation. Involvement of local communities, civil society and the media is crucial in the implementation of and compliance with the legal provisions. The HWC Management Action Plan at the division level will help in better discharge of HWC management.

Besides, there are several international conventions and treaties that have a direct bearing on the laws relating to the wildlife of our country. These are also relevant in the Indian context of HWC mitigation. The major instruments are the Convention on Biological Diversity (CBD), United Nations Framework Convention on Climate Change (UNFCC), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and Convention on the Conservation of Migratory Species of Wild Animals (CMS). Implementation, ensuring compliance with and enforcement of these regulations remain challenging but are not daunting. Further, international guidelines and protocols issued by various institutions such as the IUCN act as a safeguard/instrument for conflict management. Reintroduction guidelines, IUCN's Connectivity Conservation Area Guidelines and the IUCN SSC Task Force on HWC are the key relevant documents for HWC mitigation.

2.2 Conservation Ethos of India

Wildlife conservation in India has a long history, dating back to the colonial period, during which it was restricted to selected species and that too in a defined geographical area. Wildlife populations in India had declined significantly over a long period due to anthropogenic pressures, habitat degradation and rampant poaching. The communities and their development activities in proximity to forests and PAs have enhanced their dependence on the forest biomass, leading to degradation of the fringes of the forest. Mining activities inside forests and adjoining areas have also contributed to degradation and fragmentation of habitats and affected the fragile connectivity between forests. The invasion of weeds in large areas of our wildernesses, forests and wildlife habitat is a matter of great concern as these have proliferated in wetlands and marshes, which are prime foraging habitats, and have greatly diminished the availability of forage, herbs and shrubs. Some undesirable tree species such as Prosopis and wattle have also invaded large areas of forest and made these habitats unsuitable for the movements of wild animals, thereby forcing them to move into rural and semi-rural agricultural landscapes, exacerbating the conflict between humans and wild animals.

The behaviour of wild animals that have moved outside their natural habitat has changed due to close interactions/encounters with humans in rural and semi-urban areas. The wild animals have become habituated to semi-rural and rural environments, forage on crops and lift domestic cattle. They have greatly altered their ranging and territorial pattern and turned into resident animals living outside the forest, taking shelter in small insular forest patches and moving in a set pattern, damaging crops, killing cattle and injuring humans, instilling fear in communities.



The formation of the Wildlife Boards at the national and state levels and enactment of Wild Life (Protection) Act in 1972 laid the foundation of wildlife conservation in the present era, in post-Independence India. The Act has been amended six times, and the National Board has undergone various changes.

Project Tiger (in the 1970s) and Project Elephant (1992)—both with flagship species—attracted global attention. India then also became a member of all the major international conservation treaties related to habitats, species and environments (including the Ramsar Convention, 1971; Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973; Convention on Migratory Species, 1979; Convention on Biological Diversity, 1992). Today, a chain of 50 tiger reserves and 30 elephant reserves, besides a network of 870 protected areas, bears testimony to the efforts of the Government of India. The Environmental (Protection) Act, 1986, and notifications issued thereunder were serious efforts to protect the eco-sensitive zones around wildlife sanctuaries, national parks and wildlife corridors.

India has a target of 33 per cent of the land area for its forest cover. But forests within the protected areas have special significance in terms of biodiversity and wildlife conservation. Years back, a study conducted by the Zoological Survey of India of the tiger reserves of India revealed how these reserves have contributed to conservation of biological diversity in the country by protecting keystone species and forests. One has to remember that till date 70 per cent of the world's biodiversity has been recorded from forested areas.

Living in harmony with nature has been an integral part of Indian culture. This is abundantly reflected in a variety of traditional practices, religious beliefs, rituals, folklore and arts and crafts and in the daily lives of the Indian people. The present-day global concerns relating to sustainable development and conservation

of natural resources, spanning the two decades between the Stockholm Conference of Environment (1992) and the United Nations Conference on Human Environment and Development (Earth Summit), at Rio de Janeiro (1992) are of recent origin in comparison with the long tradition and cultural ethos of nature conservation in India.

> *We share the earth not only with our fellow human beings but with all other creatures.*
>
> *The Dalai Lama*

However, during the last decade, populations of wild animals are showing signs of recovery because of enhanced protection, enforcement measures and the realization amongst a vast section of society through education and awareness programmes that wildlife and its habitats need to be conserved for posterity. The pressure exerted on the biomass of forests by dependent communities and by mining activity has reduced due to participatory forest management and strict enforcement. The Draft National Forest Policy, 2019 acknowledges that despite serious conservation challenges, the wildlife management in the country has demonstrated gains in protection of flagship species, securing key habitats and re-establishing wildlife populations. Quick enforcement responses, dedicated teams of well-equipped and trained personnel, mobility, strong interfaces with the health and veterinary services, rescue centres, objective and speedy assessment of damage and quick payment of relief to victims and weed eradication drives for recovering habitats have complimented the efforts made for the recovery of populations in the forest landscape.

3. International Conventions and Treaties Relevant to HWC Mitigation

3.1 Convention on Biological Diversity (CBD)

History

Considering the fact that the earth's biological resources are crucial to humanity's economic and social development, there was growing recognition that the planet's biological diversity is a global asset of fabulous value to present and future generations. But at the same, the threats to species and ecosystems were increasing. Species extinction caused by human activities continued at a disturbing rate. The United Nations Environment Programme (UNEP), responding to the same, convened the Ad Hoc Working Group of Experts on Biological Diversity in November 1988 to explore the need for an international convention on biological diversity. In May 1989, it established the Ad Hoc Working Group of Technical and Legal Experts to prepare an international legal instrument for conservation and sustainable use of biological diversity. The experts were to take into account "the need to share costs and benefits between developed and developing countries" as well as "ways and means to support innovation by local people".

The Ad Hoc Working Group had become known as the Intergovernmental Negotiating Committee by February 1991. The Nairobi Conference adopted the Agreed Text of the Convention on Biological Diversity on 22 May 1992 as a culmination of its efforts. The Convention was opened for signature on 5 June 1992 at the United Nations Conference on Environment and Development (the Rio "Earth Summit"). It remained open for signature until 4 June 1993, by which time it had received 168 signatures. The Convention came into force on 29 December 1993, which was 90 days after the 30th ratification. The first session of the Conference of the Parties was scheduled from 28 November to 9 December 1994 in the Bahamas.

The Convention on Biological Diversity was motivated by the world community's growing dedication to sustainable development. It represents a dramatic step forward in the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the use of genetic resources.

Objectives

The main objectives are:

- The conservation of biological diversity
- The sustainable use of the components of biological diversity
- The fair and equitable sharing of the benefits arising out of the utilization of genetic resources

Kunming-Montreal Global Biodiversity Framework

The Kunming-Montreal Global Biodiversity Framework (GBF) was adopted during the fifteenth meeting of the Conference of the Parties (COP 15) following a four year consultation and negotiation process. This historic Framework, which supports the achievement of the Sustainable Development Goals and builds on the Convention's previous Strategic Plans, sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. Among the Framework's key elements are 4 goals for 2050 and 23 targets for 2030.

GBF target directly relevant to HWC mitigation:

Target 4. Threatened species are recovering, genetic diversity is being maintained and human-wildlife conflict is being managed

Ensure urgent management actions to halt human induced extinction of known threatened species and for the recovery and conservation of species, in particular threatened species, to significantly reduce extinction risk, as well as to maintain and restore the genetic diversity within and between populations of native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex situ conservation and sustainable management practices, and effectively manage human-wildlife interactions to minimize human-wildlife conflict for coexistence.

3.2 United Nations Framework Convention on Climate Change (UNFCCC)

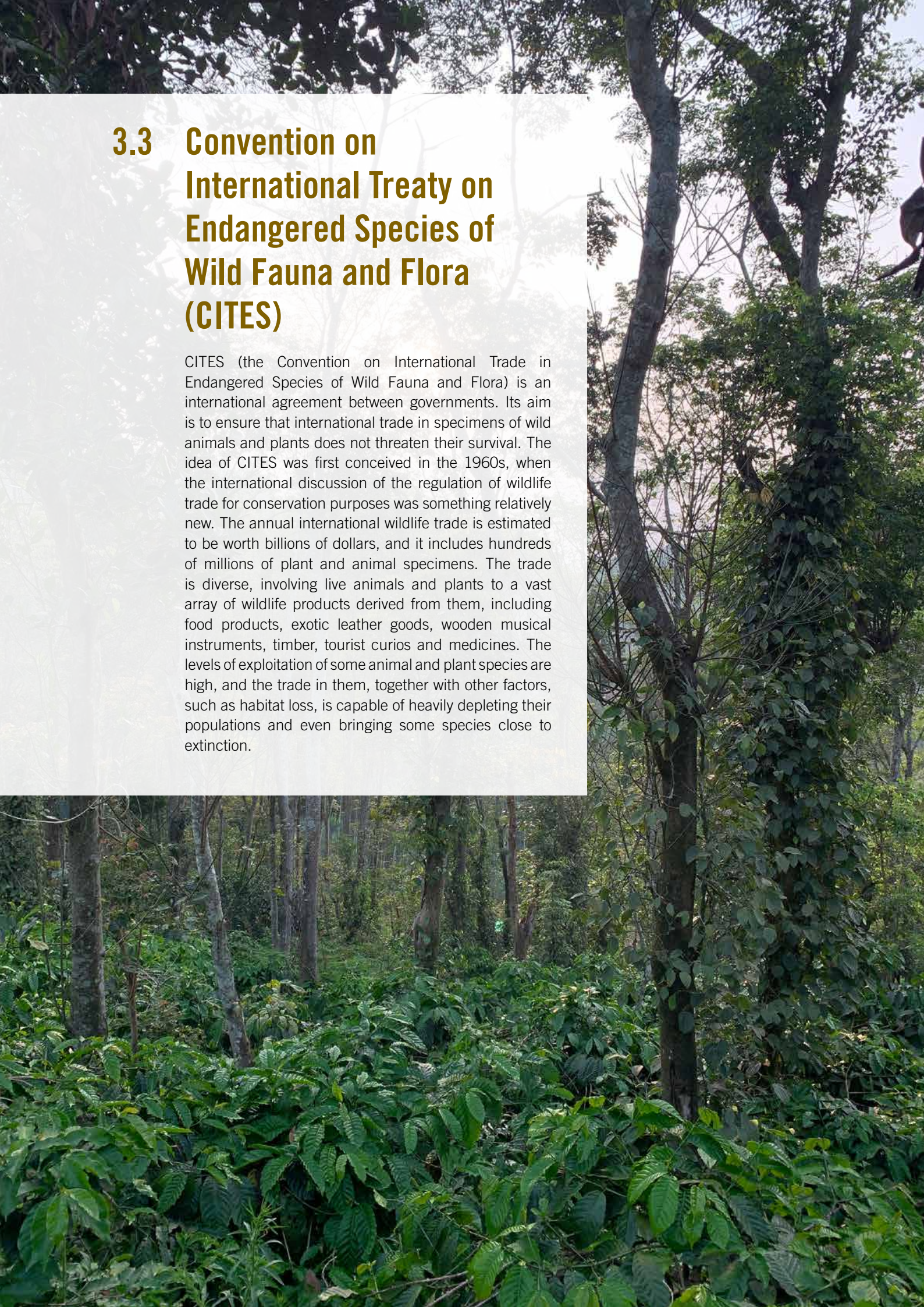
The UN Framework Convention on Climate Change (UNFCCC) is an intergovernmental treaty developed to address the problems of climate change. The UNFCCC is a "Rio Convention" as it was negotiated between February 1991 and May 1992 and opened for signature during the UN Conference on Environment and Development (UNCED) (Rio Earth Summit) in June 1992. Its sister Rio Conventions are the UN Convention on Biological Diversity and the Convention to Combat Desertification. The three are intrinsically linked. The UNFCCC came into force on 21 March 1994, 90 days after the 50th country's ratification had been received. Presently, it has been ratified by 197 countries.

The ultimate objective of the Convention is to stabilize greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system". It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner".

Parties to the Convention continue to meet regularly to take stock of progress in implementing their obligations under the treaty and to consider further actions to address the climate change threat. They have also negotiated a protocol to the Convention. The Kyoto Protocol was first agreed on in December 1997 in Kyoto, Japan, although discussions were needed between 1998 and 2004 to finalize the "fine print" of the agreement. The Protocol obliges industrialized countries and countries of the former Soviet bloc (known collectively as "Annex I Parties") to cut their emissions of greenhouse gases by an average of about 5% during 2008–2012 compared with 1990 levels. However, under the terms agreed on in Kyoto, the Protocol only comes into force after ratification by 55 Parties to the UNFCCC and if these 55 countries include a sufficient number of Annex I Parties such that at least 55% of that group's total carbon dioxide emissions for 1990 are represented. Although the world's largest emitter of greenhouse gases, the United States, rejected the Kyoto Treaty in 2001 after the election of President George W. Bush, a majority of other Annex I Parties, including Canada, Japan and the countries of the European Union, ratified the treaty. In November 2004, the Russian Federation also ratified the Protocol, thus reaching the 55% threshold. The Protocol finally came into force as a legally binding document on 16 February 2005. Presently, the Protocol had been ratified by 192 countries.

The 2015 Paris Agreement, adopted in Paris on 12 December 2015, marks the latest step in the evolution of the UN climate change regime and builds on the work undertaken under the Convention. The Paris Agreement charts a new course in the global effort to combat climate change.

The Paris Agreement seeks to accelerate and intensify the actions and investment needed for a sustainable low-carbon future. Its central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. The Agreement also aims to strengthen the ability of countries to deal with the impacts of climate change.



3.3 Convention on International Treaty on Endangered Species of Wild Fauna and Flora (CITES)

CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. The idea of CITES was first conceived in the 1960s, when the international discussion of the regulation of wildlife trade for conservation purposes was something relatively new. The annual international wildlife trade is estimated to be worth billions of dollars, and it includes hundreds of millions of plant and animal specimens. The trade is diverse, involving live animals and plants to a vast array of wildlife products derived from them, including food products, exotic leather goods, wooden musical instruments, timber, tourist curios and medicines. The levels of exploitation of some animal and plant species are high, and the trade in them, together with other factors, such as habitat loss, is capable of heavily depleting their populations and even bringing some species close to extinction.

Many wildlife species that are involved in trade are not endangered, but the existence of an agreement to ensure the sustainability of the trade is important to safeguard these resources for the future. Because the trade in wild animals and plants crosses borders between countries/states, the effort to regulate it requires international cooperation to safeguard certain species from over-exploitation. CITES was conceived in the spirit of such cooperation. Today, it accords varying degrees of protection to more than 37,000 species of animal and plant, whether they are traded as live specimens, fur coats or dried herbs. CITES was drafted as a result of a resolution adopted in 1963 at a meeting of members of IUCN. The text of the Convention was finally agreed on at a meeting of representatives of 80 countries/states in Washington, D.C., the United States of America, on 3 March 1973, and on 1 July 1975 CITES came into force. The original document of the Convention was deposited with the Depositary Government in the English, French and Spanish languages, each version being equally authentic.

CITES is an international agreement to which countries and regional economic integration organizations adhere voluntarily. Countries that have agreed to be bound by the Convention are known as Parties. Although, CITES is legally binding on the Parties, it does not take the place of national laws. The Parties/countries have to implement the Convention. Rather, it provides a framework to be respected by each Party, which has to adopt its own domestic legislation to ensure that CITES is implemented at the national level. Presently, CITES has 183 Parties.

The CITES species

Roughly 5,800 species of animal and 30,000 species of plant are protected by CITES against over-exploitation through international trade. They are listed in the three CITES Appendices. The species are grouped in the Appendices according to how threatened they are by international trade. They include entire groups, such as primates, cetaceans (whales, dolphins and porpoises), sea turtles, parrots, corals, cacti and orchids. The accompanying table shows the approximate numbers of species that are included in the CITES Appendices as of 2 January 2017*.

	Appendix I	Appendix II	Appendix III
FAUNA			
Mammals	318 spp. (incl. 13 popns) + 20 sspp. (incl. 4 popns)	513 spp. (incl. 17 popns) + 7 sspp. (incl. 2 popns)	52 spp. + 11 sspp
Birds	155 spp. (incl. 2 popns) + 8 sspp.	1278 spp. (incl. 1 popn) + 4 sspp.	27 spp.
Reptiles	87 spp. (incl. 7 popns) + 5 sspp	749 spp. (incl. 6 popns)	61 spp.
Amphibians	24 spp.	134 spp.	4 spp.
Fish	16 spp.	107 spp.	24 spp. (incl. 15 popns)
Invertebrates	69 spp. + 5 sspp.	2171 spp. + 1 sspp.	22 spp. + 3 sspp.
FAUNA TOTAL	**669 spp. + 38 sspp.**	**4952 spp. + 12 sspp.**	**190 spp. + 14 sspp.**
FLORA	**334 spp. + 4 sspp.**	**29644 spp. (incl. 93 popns)**	**12 spp. (incl. 1 popn) + 1 var.**
GRAND TOTAL	**1003 spp. + 42 sspp.**	**34596 spp. + 12 sspp.**	**202 spp. + 14 sspp. + 1 var.**

Any type of wild plant or animal may be included in the list of species protected by CITES, and the range of wildlife species included in the Appendices extends from leeches to lions and from pine trees to pitcher plants. While the more charismatic creatures, such as bears and whales, may be the better known examples of CITES species, the most numerous groups include many less popular plants and animals, such as aloes, corals, mussels and frogs.

3.4 The Convention on the Conservation of Migratory Species of Wild Animals (CMS—also known as the Bonn Convention)

CMS, as an environmental treaty under the aegis of the United Nations Environment Programme, provides a global platform for the conservation and sustainable use of migratory animals and their habitats. CMS brings together the countries/states through which migratory animals pass and the range countries/states and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range. Presently, CMS has 130 Parties.

CMS, as the only global convention specializing in the conservation of migratory species, their habitats and their migration routes, complements and co-operates with a number of other international organizations, NGOs and partners in the media as well as in the corporate sector. Migratory species threatened with extinction are listed in Appendix I of the Convention. CMS Parties strive towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Besides establishing obligations for each country/state joining the Convention, CMS promotes concerted action among the range countries/states of many of these species.

Migratory species that need or would significantly benefit from international co-operation are listed in Appendix II of the Convention. For this reason, the Convention encourages the range countries/states to conclude global or regional agreements. In this respect, CMS acts as a framework convention. The agreements may range from legally binding treaties (called Agreements) to less formal instruments, such as memoranda of understanding, and can be adapted to the requirements of particular regions. The ability to develop models tailored according to the conservation needs throughout the migratory range is a capacity unique to CMS.

India hosted the 13th meeting of the conference of parties to the Convention on Migratory Species (CMS), wherein India's proposal for inclusion of the Asian elephant in the Appendix I of the Convention was adopted. The inclusion of Asian elephants in Appendix I of the CMS is expected to provide the species with the benefits of international cooperation and in providing legal protection to the migratory routes of the elephants across international boundaries. Besides, this would also facilitate in strengthening the gene base of the populations and in reducing the human–elephant conflict across the migratory route of the elephants.

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#UPDATE :#CMSCOPIndia
India's proposal to include mainland Asian elephant in Appendix I of @BonnConvention accepted unanimously.

Move will promote conservation of Asian Elephant in its natural habitat as well as to reduce human elephant conflict in range countries.

#CMSCOP13

Key development policy objectives must address both poverty reduction and the conservation of biodiversity and ecosystem services.

4. International guidelines, protocols and institutions

4.1 IUCN reintroduction guidelines

The executive summary of the Guidelines for Reintroductions and Other Conservation Translocations of the IUCN says that "Conservation translocation is the deliberate movement of organisms from one site for release in another. It must be intended to yield a measurable conservation benefit at the levels of a population, species or ecosystem, and not only provide benefit to translocated individuals".

"Conservation translocations consist of (i) reinforcement and reintroduction within a species' indigenous range, and (ii) conservation introductions, comprising assisted colonisation and ecological replacement, outside the indigenous range. Translocation is an effective conservation tool but its use either on its own or in conjunction with other conservation solutions needs rigorous justification. Feasibility assessment should include a balance of the conservation benefits against the costs and risks of both the translocation and alternative conservation actions. Risks in a translocation are multiple, affecting in many ways the focal species, their associated communities and ecosystem functions in both source and destination areas; there are also risks around human concerns. Any proposed translocation should have a comprehensive risk assessment with a level of effort appropriate to the situation. Where risk is high and/or uncertainty remains about risks and their impacts, a translocation should not proceed".

"Translocations of organisms outside of their indigenous range are considered to be especially high risk given the numerous examples of species released outside their indigenous ranges subsequently becoming invasive, often with massively adverse impacts. Any translocation will impact and be impacted by human interests. Social, economic and political factors must be integral to translocation feasibility and design. These factors will also influence implementation and often require an effective, multi-disciplinary team, with technical and social expertise representing all interests. Design and implementation of conservation translocations should follow the standard stages of project design and management, including gathering baseline information and analysis of threats, and iterative rounds of monitoring and management adjustment once the translocation is underway. This ensures that process and progress are recorded; changes in translocation objectives or management regime can then be justified, and outcomes can be determined objectively. Finally, translocations should be fully documented, and their outcomes made publicly and suitably available to inform future conservation planning".

The full text of the guidelines can be found at https://portals.iucn.org/library/efiles/documents/2013-009.pdf.

4.2 IUCN's "Areas of Connectivity Conservation Guideline"

Introduction

Habitat fragments lose species after they are isolated because these islands are no longer part of a larger natural system. What we learned was that conservation depends not only on protection but also on connection.

Lovejoy and Wilson 2015

The advanced Draft on Connectivity Conservation Area Guidelines of the IUCN issued on 4 May 2016 states that "Connectivity Conservation Areas (CCAs) contribute importantly to the conservation of biodiversity on Earth. They are an essential conservation accessory to protected areas and a critical response to climate change caused environmental health and biodiversity conservation threats. CCAs interconnect protected areas and connect them to the wider semi-natural and natural landscapes, freshwater scrapes and seascapes. They provide a fundamental contribution to maintaining the ecological integrity of protected areas (and other effective area-based conservation areas) and the habitats and species they conserve. They exist across terrestrial areas; include bird and non-bird flight migratory routes; they are found along and within freshwater rivers; across lakes and estuaries and in estuarine and marine environments. CCAs are not however, a substitute 'use' category (on land, freshwater or the sea) for areas that should otherwise be permanently protected for their important natural and cultural values. CCAs are indeed, complementary to protected areas. The IUCN Connectivity Conservation Area Guidelines provide the IUCN definition for a CCA. They provide brief background information including the environmental, social and policy context for CCAs and guidance provided by the Convention on Biological Diversity's (CBD) 2011–2020 Plan. The Guidelines provide a brief historical insight to IUCN's involvement with connectivity conservation action and a snapshot of the science underpinning connectivity conservation. Similar to IUCN's definition of protected areas, the CCA definition is provided for all environment types of Earth. The Guidelines identify different 'Types' of CCAs; they identify criteria for their selection and they describe the different governance types for these areas. The Guidelines also provide a glossary of terms that may be used to describe CCAs and IUCN World Conservation Congress Resolutions that guided and mandated IUCN action for connectivity conservation".

Definition

IUCN's definition of "Connectivity Conservation Area" is guided by the Papallacta Declaration and the Convention on Biological Diversity 2011–2020 Strategic Plan, Target 11, and it is further refined to include migratory and other species movements for flight, on land and in association with freshwater and salt water environments. As per the draft document, a Connectivity Conservation Area is "A recognised, large and/or significant spatially defined geographical space of one or more tenures that is actively, effectively and equitably governed and managed to ensure that viable populations of species are able to survive, evolve, move and interconnect within and between systems of protected areas and other effective area based conservation areas. The purpose of a Connectivity Conservation Area is to connect protected areas and other effective area based conservation areas and to maintain or restore ecosystem function and ecological and evolutionary processes of species and ecosystems across (and between) landscapes, fresh waterscapes or seascapes for biodiversity conservation in areas that may also be used and occupied for a variety of human purposes, so that people and other species are able to survive and to adapt to environmental change, especially climate change". The full text of the draft Guidelines can be found at https://www.iucn.org/sites/dev/files/import/downloads/cca_advdraft_guidelines_may2016.pdf.

4.3 IUCN SSC Task Force on Human–Wildlife Conflict

The mission of the IUCN SSC Task Force on Human–Wildlife Conflict is to support the IUCN SSC network in addressing human–wildlife conflict (HWC) by providing interdisciplinary guidance and expert support, through an integration of ecological and social sciences. The IUCN SSC Human–Wildlife Conflict Task Force is a global advisory group of experts from a range of subjects working on interdisciplinary approaches to wildlife conservation. The IUCN SSC Human–Wildlife Conflict Task Force (HWCTF) is an interdisciplinary advisory group that aims to support professionals working on HWC by providing interdisciplinary guidance and resources and building capacity. The HWCTF was established with the aim of fostering links between policy, science and communities and assimilating knowledge and capacity for HWC management across the IUCN commissions and members.

The HWCTF's objectives are to:

1) **act as an advisory body** on matters of HWC that can provide a platform for the exchange of best practice;

2) **facilitate interdisciplinary approaches** to HWC mitigation by encouraging the collaboration of experts from many different fields;

3) **build capacity** by developing technical or framework guidance material, conducting training workshops and providing learning platforms.

Outcomes

The HWCTF endeavours to work towards the following outcomes:

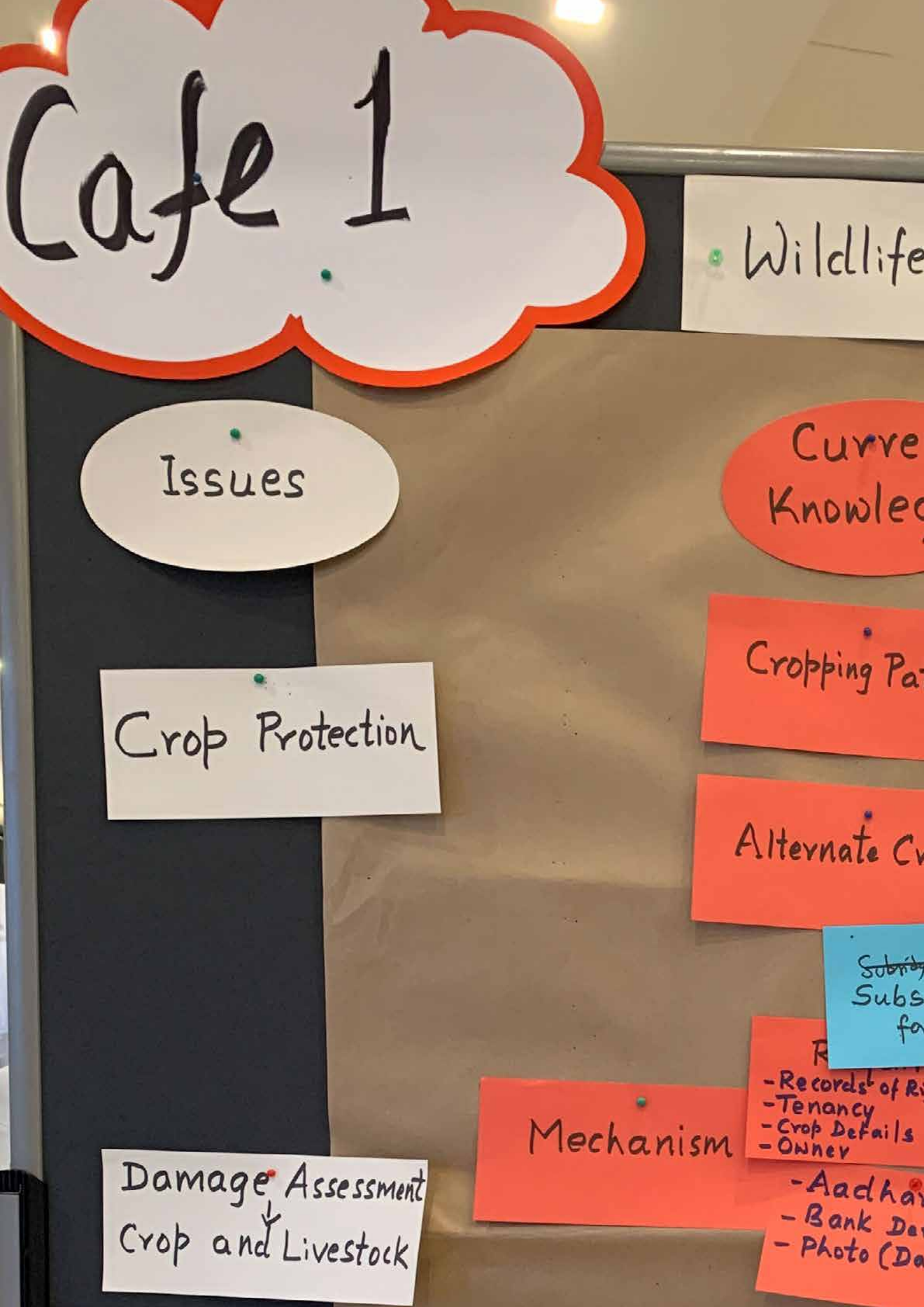
- help increase understanding and awareness of the complexities of conflict;
- facilitate more collaboration between practitioners and policy, science and community;
- catalyse more resources and effort committed to good HWC management;
- encourage proactive and preventative mitigation of emerging HWCs; and
- work towards the integration of effective HWC policies into major biodiversity and development agendas.

Activities

The activities of the HWCTF undertaken towards the foregoing aims and outcomes include the following:

- Developing interdisciplinary collaborations and partnerships in HWC regionally and globally, across SSC groups, IUCN commissions and beyond
- Providing advice or assistance to organizations or governments working on HWC where possible and appropriate
- Acting as a think-tank on the latest issues in HWC, leading and partnering with researchers and organizations and new thinking to support policy and best practice
- Maintaining a resource library of literature, manuals and material on HWC
- Developing, designing, facilitating or participating in workshops, seminars, talks, events, symposia and networking opportunities on HWC around the world
- Producing an IUCN definition and position statement on HWC
- Facilitating the inclusion of HWC in global policy forums, such as the Post-2020 Biodiversity Framework, and national strategies
- Preparing the IUCN SSC Guidelines on Human–Wildlife Conflict and assisting other IUCN SSC groups with the development of their taxon-specific HWC guidelines or policies

Further details are available at: http://www.hwctf.org/.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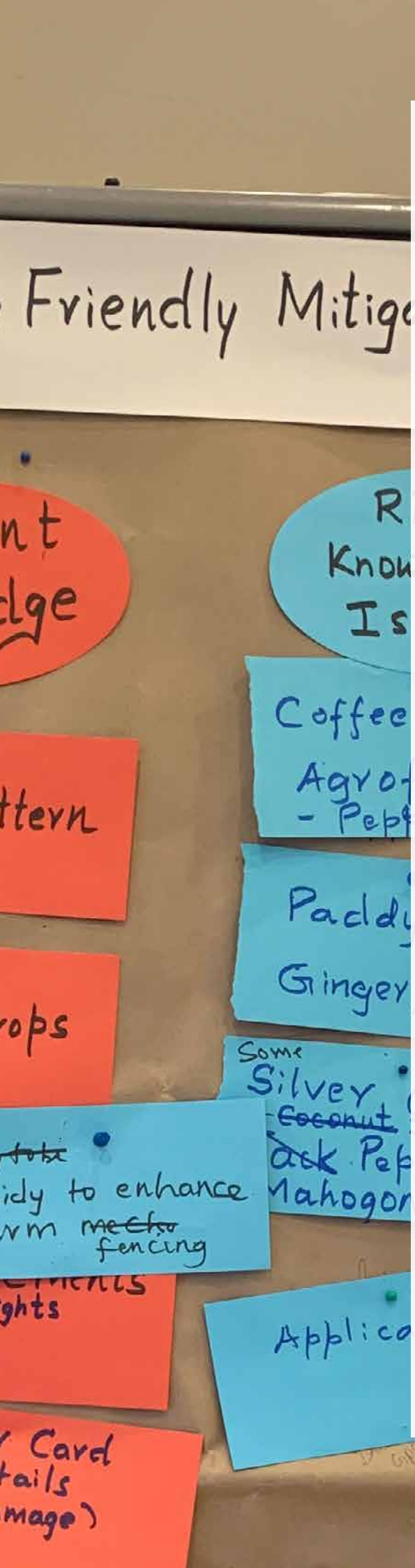


5. Relevant Indian Laws and Policies

5.1 The Wild Life (Protection) Act, 1972

Introduction

The rapid decline of wild animals and birds in India was a cause of grave concern. Some wild animals and birds had already become extinct in the country, and others were in danger of becoming extinct. Areas that once teemed with wildlife had become devoid of it, and even in sanctuaries and national parks, the protection afforded to wildlife needed to be improved. The Wild Birds and Animal Protection Act, 1912 had become completely outmoded. The existing state laws were not only outdated but provided punishments that were not commensurate with offences. An urgent need for introducing comprehensive legislation that would provide protection to wild animals and birds was felt. But the Central Government had no power to make a law in this regard as the subject was related to entry 20 of the state list in the Seventh Schedule. The legislatures of the states of Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Madhya Pradesh, Manipur, Punjab, Rajasthan, Uttar Pradesh and West Bengal passed resolutions empowering Parliament to pass the necessary legislation on the subject. This was intended to provide a comprehensive national legal framework for wildlife protection. Accordingly, the Wild Life (Protection) Bill was introduced in Parliament. It was passed by both the Houses of Parliament and received the assent of the President on 9 September 1972. The Act provides for the protection of wild animals, birds and plants and for matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country. It extends to the whole of India. It has six schedules, which give varying degrees of protection. Schedule I and Part II of Schedule II provide absolute protection—offences under these are prescribed the heaviest penalties. Species listed in Schedule III and Schedule IV are also protected, but the penalties are much lighter. Schedule V is the list of vermin, and these animals can be hunted. The endemic plants specified in Schedule VI are prohibited from cultivation and planting.

The Act adopts a two-pronged conservation strategy:

a. Specified endangered species are protected regardless of location.

b. All species are protected in specified areas.

This being the most significant legislation on wildlife protection, it is based on the ecosystem approach and a regulatory regime of command and control. The objectives of this enactment were three-fold: (1) to have uniform legislation related to wildlife throughout the country; (2) to establish a network of protected areas, i.e., national parks and sanctuaries; and (3) to regulate illicit trade in wildlife and in wildlife products.

Amendments to the act

Over the years, the Act underwent six amendments:

- Wildlife (Protection) Amendment Act, 1982
- Wildlife (Protection) Amendment Act, 1986
- Wildlife (Protection) Amendment Act, 1991
- Wildlife (Protection) Amendment Act, 1993
- Wildlife (Protection) Amendment Act, 2002
- Wildlife (Protection) Amendment Act, 2006.
- Wildlife (Protection) Amendment Act, 2022

egazette.nic.in/WriteReadData/2022/241252.pdf

Refer to the Supplementary Framework to the National HWC Mitigation Strategy and Action Plan (HWC-NAP) "Legislative Framework for HWC

Mitigation in India" for an in-depth analysis of the legal provisions of different HWC situations moef.gov.in/wp-content/uploads/2022/01/National-Human-Wildlife-Conflict-Mitigation-Strategy-and-Action-Plan-of-India-2.pdf

Box 1: Concept of biosphere reserves

The concept of biosphere reserves was created by UNESCO. These reserves shall be model regions for sustainable development considering ecological, economic and social aspects. There is a global network of biosphere reserves that are developed, evaluated and networked by the Man and Biosphere Programme (MAB). MAB is different from classic nature protection. Humans are a major component of the MAB, including the need to have an income. Biosphere reserves have three zones: (1) a core zone, with a focus on nature protection, (2) a buffer zone surrounding the core zone, which is used for activities compatible with sound ecological practices that can reinforce scientific research, monitoring, training and education and (3) a transition area with the greatest level of activity, fostering economic and human development that is socio-culturally and ecologically sustainable. The participation of the inhabitants, inter-disciplinarity and cross-sector collaboration are integral parts of the concept. The management approach of biosphere reserves is holistic and up to a certain degree comparable with the landscape approach. India has 11 biosphere reserves, for example Nilgiri Biosphere Reserve (Tamil Nadu, Kerala, Karnataka), Sundarbans Biosphere Reserve (West Bengal) and Nanda Devi Biosphere Reserve (Uttarakhand).

5.2 The Prevention of Cruelty to Animals Act, 1960

The Prevention of Cruelty to Animals Act is an Act that was enacted in 1960 to prevent infliction of unnecessary pain or suffering on animals and to amend the laws relating to the prevention of cruelty to animals. In accordance with the provisions of the law, the Government of India formed the Animal Welfare Board of India.

The Act however makes a provision under heading [Chapter VI, heading 28] "Saving as respects manner of killing prescribed by religion". Nothing contained in this Act shall render it an offence to kill any animal in a manner required by the religion of any community prevailing.

Animal welfare issues during capture, tranquilisation and translocation

Whatever be the method selected for the capture of a wild animal, all possible care should be taken to ensure the safety and welfare of the animal and avoid all unnecessary cruelty. The term "cruelty" has not been defined in the Prevention of Cruelty to Animals Act, 1960, but Section 11(1) of the said Act describes certain acts of omissions and commissions in respect of animals that are punishable under the Act. These include:

- Subjecting any animal to beating, kicking, and torturing
- Depriving any animal of sufficient food, water or shelter
- Confining any animal to a cage that does not permit it a reasonable opportunity for movement
- Keeping any animal chained or tethered for an unreasonable time or in an unreasonable manner
- Conveying or carrying any animal in such a manner as to subject it to unnecessary suffering
- Wilfully and unreasonably administering an injurious substance to any animal

Translocation cages must be designed according to the specifications of veterinary protocols and the CZA manual.

The Prevention of Cruelty (Capture of Animals) Rules, 1972 also prohibits the capture of animals except by the sack and loop method, using tranquilliser guns or any other method that renders the animal insensible to pain before capture.

Animals known to be indulging habitually in HWC or those playing a major role in HWC (e.g. unattached elephant bulls, alpha-monkeys) should form the main targets of capture.

5.3 Invoking Indian Penal Code (IPC) for cruelty to animals

The provisions of the IPC can also be invoked for harsher punishments.

Sections 428/429 of the Indian Penal Code deal with mischief by killing or maiming an animal (value of Rs.10/Rs.50 or upwards). It is a cognizable offence under Section 428 and Section 429. The punishment for such acts/offences is simple or rigorous imprisonment for a term, which may extend to 2 years, or a fine, or both.

Box 2: Difference between "animal rights" and "animal welfare"

Animal welfare theories acknowledge that animals have interests but allow those interests to be traded away as long as the human benefits are thought to justify that sacrifice.

Animal rights advocates believe that animals, like humans, have interests that cannot be sacrificed or traded away just because such a sacrifice might benefit others. However, the animal rights position does not hold that rights are absolute; an animal's rights, just like those of humans, must be limited, and rights can certainly conflict.

Those who support animal rights believe that animals are not ours to eat, wear, experiment on or use for entertainment. Animal welfare proponents believe these uses are acceptable as long as "humane" guidelines are followed.

5.4 The Environment (Protection) Act, 1986 (EPA)

Provisions for mitigating HWC

The Environment (Protection) Act, 1986 vests the Central Government with powers to regulate activities in certain areas facing environmental threats. Where HWC occurs apparently because of human activities in certain areas and regulation of such activities is considered an option for management of HWC, the following provisions of the EPA are relevant:

Section 3(1). Subject to the provisions of this Act, the Central Government shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution.

Section 3(2). In particular, and without prejudice to the generality of the provisions of sub-section (1), such measures may include measures with respect to all or any of the following matters.

- Co-ordination of actions by the State Governments, officers and other authorities:
  - under this Act, or the rules made thereunder; or
  - under any other law for the time being in force that is relatable to the objects of this Act;
- Restriction of the areas in which any industries, operations of processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards;
- Such other matters as the Central Government deems necessary or expedient for securing the effective implementation of the provisions of this Act.The Environment Protection Rule 5(1) outline the principles and procedures for implementing regulations. Among others, some of the factors for imposing restrictions include the following:

1. The biological diversity of the area that, in the opinion of the Central Government, needs to be preserved.

2. Environmentally compatible land use.

Section 5 of EPA empowers the Central Government (MoEFCC) or any authority created under EPA to issue directions to any person, officer or authority to comply with such restrictions imposed under Section 3.

Penalties for contravention of the provision of the Act are provided in Section 15, imprisonment up to 5 years or a fine of one lakh rupees or both, with further up to five thousand rupees per day in case of continued contravention. For any such continuance beyond one year, imprisonment up to seven years is prescribed.

Section 19 provides for powers of the Central Government to authorise any authority or officer to file complaints regarding violation of the provisions of the Act.

Section 23 provides for powers of the Central Government to delegate its regulatory powers to any officer, state government or authority.

HWC mitigation by invoking EPA provisions

1. These provisions can be relevant in framing a long-term strategy for avoidance of conflicts by facilitating co-existence through regulation of land use in areas of potential HWC due to proximity to habitats and with scope of fragmentation due to certain land uses that may have the potential of developing HWC issues.

a) Regulating cropping patterns in high-conflict zones

b) Animal mortality on railway tracks

c) Mining in high-conflict zones

d) Infrastructure development in high-conflict zones.

Does the EPA prevail over other legislative provisions?

The Doctrine of Repugnancy has been stated in Article 254 of the Indian Constitution, under Part XI. If any provision of a state law is repugnant to a provision in a law made by Parliament that Parliament is competent to enact, or to any existing law regarding any matter in the Concurrent List, then the Parliamentary law would prevail over the State law. It will be of no importance whether the Parliamentary law was enacted before or after the State law. To the extent of repugnance, the State law will be void. The important thing to consider is whether the legislation was in respect to the same matter. If the later legislation deals with a matter that is distinct from the subject of the earlier legislation but is of a cognate and allied character, then Article 254(2) will have no application. However, between two central legislation it is not likely that parliament will make law on the same subject matter, but it would be distinct. In the case of legislation on the same matter, it would be explicitly mentioned which legislation will prevail, with words such as “notwithstanding any other law in force”.

The concept of eco-sensitive zones (ESZs) near PAs had been developed on the basis of these provisions, for the purpose of conservation of wildlife where the habitats extends beyond the forests and where some areas outside PAs are needed to function as “shock absorbers”. Though the ESZ concept has not proved to be effective in approach, the use of these provisions can surely prove to be effective along the interface with the fringe communities for adopting the land use practices particularly crops, which would not exacerbate HWC, and planning infrastructure and dwellings in areas with potential of HWC.

Conservation easement

The ecological contiguity of forests in a landscape is through the private agricultural lands, Gram Sabha lands and Government lands under the control of the Revenue Department. The wild animals seasonally migrating over these landscapes through such corridors are most vulnerable to injury and poaching. Besides, the communities residing in close proximity to such corridors are also exposed to chance encounters with the animals and may suffer injury and death. The wild animals may also cause depredation of their crops and inflict monetary losses.

In such situations of human–wildlife interactions, the remedy is to claiming *ex-gratia* payments from the Government, which may not cover the actual losses. The Government should introduce laws for establishing easement rights and provide grants for keeping the land fallow and free of pesticides, fertilizers and herbicides, which are a threat to wildlife. Such measures will mitigate the conflict and prevent wildlife crime.

A conservation easement is a voluntary, legal agreement that permanently limits uses of the land in order to protect its conservation values. Conservation easement allows landowners to retain the ownership and management responsibilities of their land, but it requires that they (and all future owners) observe certain prohibitions and limitations regarding development and use in order to protect the land's conservation values. Conservation easements are often described as splitting the bundle of rights guaranteed by the Constitution and law. In a conservation easement, the government acquires partial property rights from a landowner to restrict land uses such as building, mining or timber harvesting, cultivation of land, altering the soil characteristic through the use of fertilizers, weedicides and herbicides, etc. Conservation easements for protecting wildlife corridors from development and cultivation are essentially wildlife habitat easements that provide for ecosystem management. The owners are partially divested of their property rights and paid compensation for keeping the land fallow. The owners have to voluntarily choose such an easement and are paid compensation for restricted use rights.

In a wildlife corridor easement, the property rights vary with the landscape. In rural regions, the land holdings vary from small marginal farmers to those with medium to large holdings, and if there are restrictions on the use of the land and curtailment of rights, limiting development, and partially allowing grazing, timber harvesting or agriculture. Conservation easements are cost-effective in rural areas, as the value of the properties may be relatively low.

The Indian Easement Act, 1982 recognizes two rights: (1) easement rights (S-4) and (2) rights as a licensee (S-52). The State Government, when declaring any area as a sanctuary for protecting wildlife and the ecological function of the land, appoints a Collector to determine the nature and extent of the rights of persons in or over the land within the sanctuary, to adjudicate on claims on the basis of records and evidence and to pass orders admitting or rejecting the claims. The Collector may exclude such land from the limits of the proposed sanctuary or acquire such land or rights except where the owner has agreed to surrender his rights to the Government on payment of such compensation as is provided for in the Land Acquisition Act, 1984. This Act can be amended to provide easement rights by payment of reparation. Hence the Easement Act, 1982 can be invoked to preserve the conservation value of any wildlife corridor.

5.5 Indian Veterinary Council Act, 1984

The Indian Veterinary Council Act, 1984 (Act No. 52 of 1984), promulgated on 18 August 1984 is an act that regulates veterinary practice and provides, for that purpose, for the establishment of the Veterinary Council of India and State Veterinary Councils and the maintenance of registers of veterinary practitioners and matters connected therewith. In mitigating HWC, the services of veterinary practitioners are required regularly. Section 30 of the Act prescribes that no person, other than a registered veterinary practitioner, shall:

a. hold office as veterinary physician or surgeon or any other like office (by whatever name it may be called) in Government or in any institution maintained by a local or other authority.

b. practise veterinary medicine in any state.

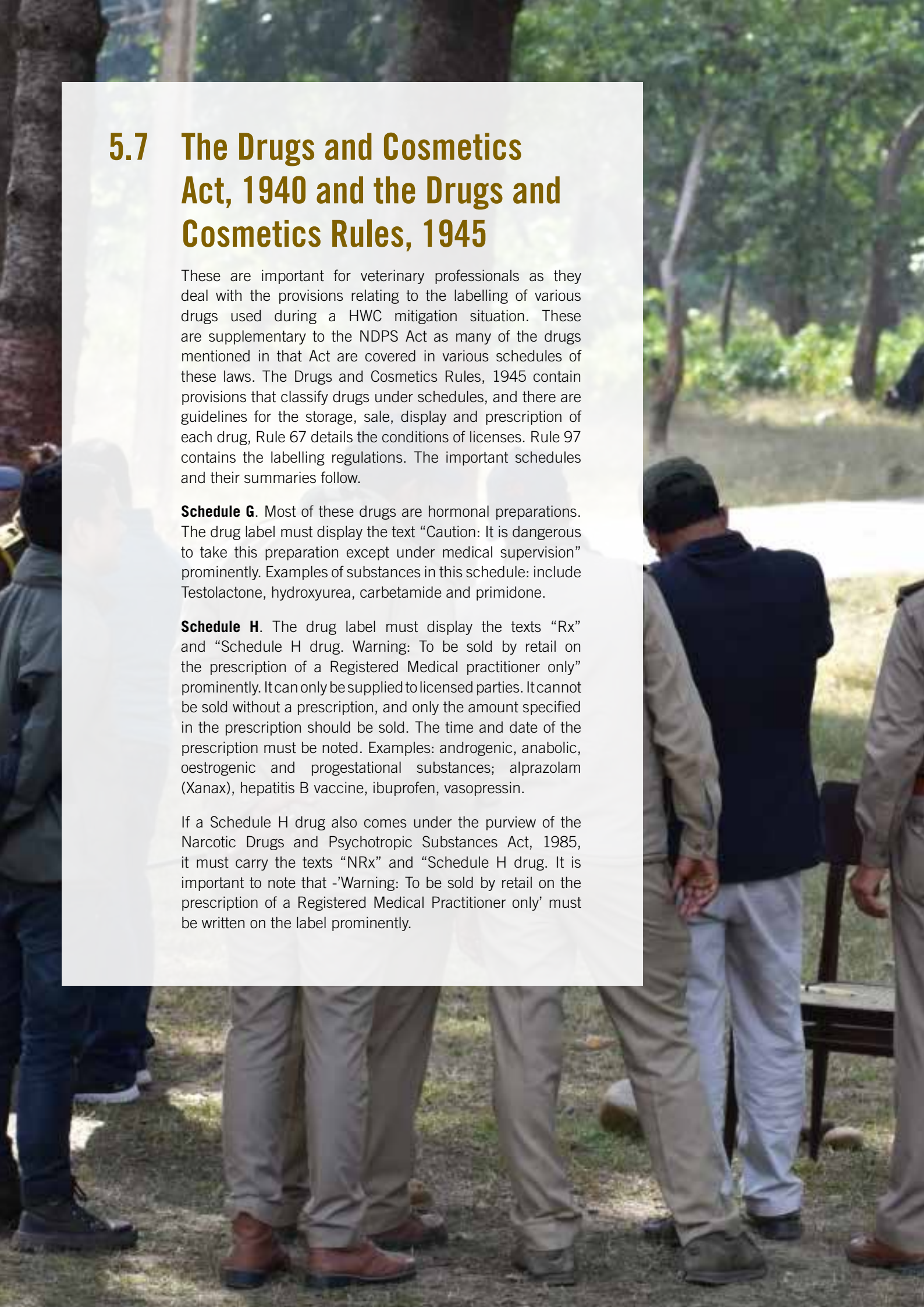
It is also provided that the state government may, by order, permit a person holding a diploma or certificate of veterinary supervisor, stockman or stock assistant (by whatever name it may be called) issued by the Directorate of Animal Husbandry (by whatever name it may be called) of any state or any veterinary institution in India to render, under the supervision and direction of a registered veterinary practitioner, minor veterinary services. "Minor veterinary services" means rendering of preliminary veterinary aid, such as vaccination, castration, and dressing of wounds, and such other types of preliminary aid or treatment of such ailments as the State Government may, by notification in the Official Gazette, specify in this behalf.

(For the full text of the Act: https://indiacode.nic.in/bitstream/123456789/4220/1/The Indian Veterinary Council Act 1984.pdf)

5.6 Narcotic Drugs and Psychotropic Substances (NPDS) Act, 1985

The Narcotic Drugs and Psychotropic Substances Act, 1985, commonly referred to as the NDPS Act, is an act of the Parliament of India that prohibits a person from producing/manufacturing/cultivating, possessing, selling, purchasing, transporting, storing, and/or consuming any narcotic drug or psychotropic substance. The Narcotic Drugs and Psychotropic Substances Bill, 1985 was introduced in the Lok Sabha on 23 August 1985. It was passed by both the Houses of Parliament and received the assent of President Gyani Zail Singh on 16 September 1985. The Act came into force on 14 November 1985. The NDPS Act has since been amended thrice: in 1988, 2001 and 2014. The Act extends to the whole of India, and it also applies to all Indian citizens outside India and to all persons on ships and aircraft registered in India. Under one of the provisions of the act, the Narcotics Control Bureau was set up with effect from March 1986. The Act is designed to fulfil India's treaty obligations under the Single Convention on Narcotic Drugs, the Convention on Psychotropic Substances and the United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances. Under the NDPS Act, it is illegal for a person to produce/manufacture/cultivate, possess, sell, purchase, transport, store, and/or consume any narcotic drug or psychotropic substance. Ketamine, etorphine, buprenorphine, diazepam, midazolam, etc., which are used for immobilisation, fall under the list of substances controlled under the NDPS Act. The procurement, storage, issue and use of these drugs by authorised persons in mitigating HWC situations will have to be in a perfectly lawful manner as prescribed in the NDPS Act.

(For the full text of the Act: https:// the narcotic drugs and psychotropic substances, act, 1985.pdf)



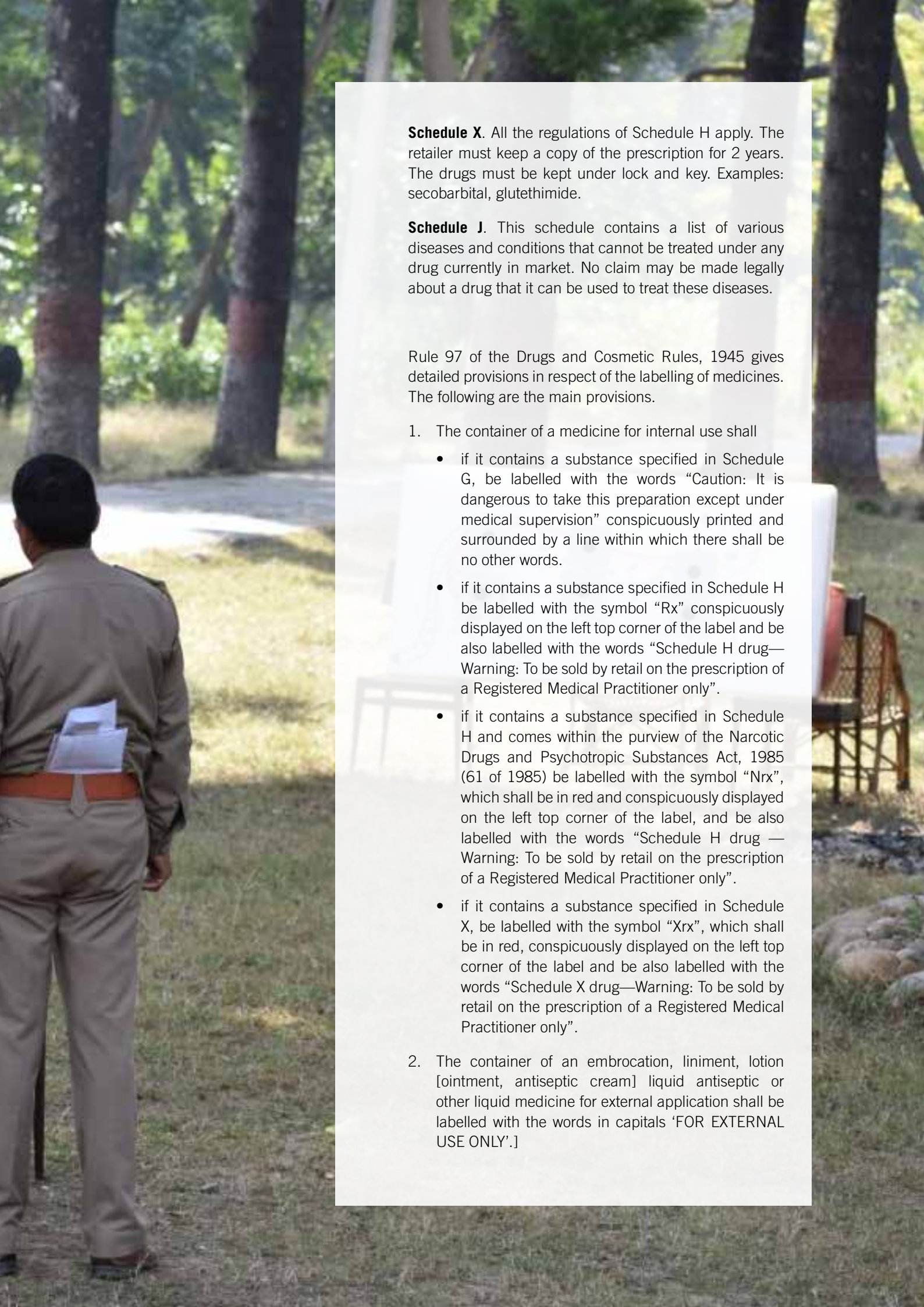
5.7 The Drugs and Cosmetics Act, 1940 and the Drugs and Cosmetics Rules, 1945

These are important for veterinary professionals as they deal with the provisions relating to the labelling of various drugs used during a HWC mitigation situation. These are supplementary to the NDPS Act as many of the drugs mentioned in that Act are covered in various schedules of these laws. The Drugs and Cosmetics Rules, 1945 contain provisions that classify drugs under schedules, and there are guidelines for the storage, sale, display and prescription of each drug, Rule 67 details the conditions of licenses. Rule 97 contains the labelling regulations. The important schedules and their summaries follow.

Schedule G. Most of these drugs are hormonal preparations. The drug label must display the text "Caution: It is dangerous to take this preparation except under medical supervision" prominently. Examples of substances in this schedule: include Testolactone, hydroxyurea, carbetamide and primidone.

Schedule H. The drug label must display the texts "Rx" and "Schedule H drug. Warning: To be sold by retail on the prescription of a Registered Medical practitioner only" prominently. It can only be supplied to licensed parties. It cannot be sold without a prescription, and only the amount specified in the prescription should be sold. The time and date of the prescription must be noted. Examples: androgenic, anabolic, oestrogenic and progestational substances; alprazolam (Xanax), hepatitis B vaccine, ibuprofen, vasopressin.

If a Schedule H drug also comes under the purview of the Narcotic Drugs and Psychotropic Substances Act, 1985, it must carry the texts "NRx" and "Schedule H drug. It is important to note that -'Warning: To be sold by retail on the prescription of a Registered Medical Practitioner only' must be written on the label prominently.



Schedule X. All the regulations of Schedule H apply. The retailer must keep a copy of the prescription for 2 years. The drugs must be kept under lock and key. Examples: secobarbital, glutethimide.

Schedule J. This schedule contains a list of various diseases and conditions that cannot be treated under any drug currently in market. No claim may be made legally about a drug that it can be used to treat these diseases.

Rule 97 of the Drugs and Cosmetic Rules, 1945 gives detailed provisions in respect of the labelling of medicines. The following are the main provisions.

1. The container of a medicine for internal use shall
    - if it contains a substance specified in Schedule G, be labelled with the words "Caution: It is dangerous to take this preparation except under medical supervision" conspicuously printed and surrounded by a line within which there shall be no other words.
    - if it contains a substance specified in Schedule H be labelled with the symbol "Rx" conspicuously displayed on the left top corner of the label and be also labelled with the words "Schedule H drug—Warning: To be sold by retail on the prescription of a Registered Medical Practitioner only".
    - if it contains a substance specified in Schedule H and comes within the purview of the Narcotic Drugs and Psychotropic Substances Act, 1985 (61 of 1985) be labelled with the symbol "Nrx", which shall be in red and conspicuously displayed on the left top corner of the label, and be also labelled with the words "Schedule H drug — Warning: To be sold by retail on the prescription of a Registered Medical Practitioner only".
    - if it contains a substance specified in Schedule X, be labelled with the symbol "Xrx", which shall be in red, conspicuously displayed on the left top corner of the label and be also labelled with the words "Schedule X drug—Warning: To be sold by retail on the prescription of a Registered Medical Practitioner only".
2. The container of an embrocation, liniment, lotion [ointment, antiseptic cream] liquid antiseptic or other liquid medicine for external application shall be labelled with the words in capitals 'FOR EXTERNAL USE ONLY'.]

3. The container of a medicine made up ready only for the treatment of an animal shall be labelled conspicuously with the words “Not for human use; for animal treatment only” and shall bear a symbol depicting the head of a domestic animal.

4. The container of a medicine prepared for treatment of human ailments shall if the medicine contains industrial methylated spirit, indicate this fact on the label and be labelled with the words “FOR EXTERNAL USE ONLY”.

5. Substances in bulk form specified in Schedule X shall bear a label wherein the symbol as specified in sub-rule (1) shall be presented conspicuously in red letters.

Box 3: Procedure for import of drugs for restraint and immobilization of wild animals

Provisions in various laws

The Officer/DFO/Wildlife Warden coordinating the HWC management in the field along with the veterinary officer assigned such tasks should be aware of various sections under the Drugs and Cosmetics Act (1940) and the Narcotic Drugs and Psychotropic Substance Act (1985) that are applicable in relation to the possession and use of tranquilizing drugs.

As per Section 8(c) of the NDPS Act, 1985, no person shall produce, manufacture, possess, sell, purchase, transport, warehouse, use, consume, import inter-State, export inter-State, import into India, export from India or trans-ship any narcotic drug or psychotropic substance, except for medical or scientific purposes and in the manner and to the extent provided by the provisions of this Act or the rules or orders made thereunder and in a case where any such provision imposes any requirement by way of licence, permit or authorisation also in accordance with the terms and conditions of such licence, permit or authorisation.

The veterinarian should be aware of the provisions in the Indian Veterinary Council Act (1984) and Indian Veterinary Council Rules (1985) in respect of capture/tranquilization and treatment of wild animals.

Procedure

The scheduled drugs that are required for anaesthetic procedures in a wild animal may be procured through a proper process of import and documentation. The procurement process is described step-wise in the following.

Step 1: Obtaining “No Objection” from Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India

The yearly requirement of various anaesthetic drugs has to be calculated and a manufacturer/ supplier who has specialized in the manufacture and supply of wildlife restraint drugs may be contacted for this purpose. Mention the exact quantities of the drugs(mg/ml/vials) and the full address of the manufacturer/supplier. The exact quantity is important for obtaining a “No Objection”.

The contact details are given below:

Animal Husbandry Commissioner, Government of India
Ministry of Fisheries, Animal Husbandry and Dairying
Government of India
Krishi Bhawan
New Delhi 110 001
Email: ahc-dadf@nic.in
Phone: 011-23384146

Step 2: Obtain a drug import license/permit from the Drugs Controller General (India)

After obtaining the “No Objection” from the Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, apply for a drug import permit from the Central Drugs Standard Control Organisation.

The contact details are given below:

The Drugs Controller General (India)
Central Drugs Standard Control Organisation
Directorate General of Health Services
Ministry of Health & Family Welfare
Government of India
FDA Bhawan, ITO, Kotla Road, New Delhi 110002
Email: dci@nic.in

Step 3: Obtain (1) a Possession Certificate/License and (2) a Transport Permit from the Excise Commissioner of the state where the narcotic and psychotropic drugs are being imported.

Step 4: For narcotic drugs and psychotropic drugs such as etorphine HCl, and ketamine HCl, an additional import permit from the Narcotics Commissioner, Central Bureau of Narcotics, Government of India is also required (http://www.cbn.nic.in), which is to be obtained as per a procedure (http://www.cbn.nic.in/html/importexportcbn.htm) with the required forms (http://www.cbn.nic.in/html/formscbn.htm) filled in.

(The detailed import procedure is provided in the CBN websites mentioned above.)

An application for import of narcotic and psychotropic drugs addressed to the Narcotics Commissioner should be submitted with the following documents:

- No Objection from Ministry of Animal Husbandry, Fisheries & Dairying
- Drug Import License/Permit from Drugs Controller General (India)
- Possession Certificate/License and Transport Permit from Excise Commissioner

The contact details are given below:

Narcotics Commissioner, Government of India
Central Bureau of Narcotics
19, The Mall, Morar,
Gwalior 474006
Madhya Pradesh, India
Phone: 0751-2368996 and 0751-2368121(Narcotics Commissioner—Direct)
Email: narcommr@cbn.nic.in
Website: http://www.cbn.nic.in/

Safety considerations for storage and audit

There are safety and handling considerations relating to all the anaesthetic drugs used in wildlife management. All the drugs must be kept safely in a highly secure safe and at a temperature as per the labelling on the drug. A six-monthly audit must be done on the procedures related to the storage, handling and documentation on the expiry and safe disposal of any unused drugs after the expiry date of the drug. Human safety and first aid should be considered during the immobilization of wild and zoo animals.

6. National Policy and Plans Relevant to HWC Mitigation

6.1 National Forest Policy, 1988

The National Forest Policy, 1988, advocates that the forest management should take special care of the needs of wildlife conservation and that the forest management plans should include prescriptions for this purpose. It is essential to provide for "corridors" linking the protected areas in order to maintain genetic continuity between artificially separated sub-sections of migrant wildlife.

The Draft National Forest Policy, 2019 states that human–wildlife conflicts have escalated over the years due to a combination of factors related to habitats and populations of certain wildlife species within and outside forests. The regular spatial and temporal dynamics of conflicts would be assessed to formulate and implement a state-level strategy to manage human–wildlife conflicts. A quick response, dedicated teams of well-equipped and trained personnel, mobility, a strong interface with the health and veterinary services, rescue centres, objective and speedy assessment of damage and quick payment of relief to the victims would be at the core of the short-term action. Monitoring and management of populations of wild animals would be adopted on a long-term basis within and outside forests to maintain the balance.

Download a copy form this link: https://mpforest.gov.in/img/files/Policy_NFP.pdf

6.2 National Wildlife Action Plan 2017–2031

The Union Ministry of Environment, Forests and Climate Change (MoEFCC) has announced the third National Wildlife Action Plan, for 2017–2031. The Wildlife Action Plans are envisaged to conserve and protect wildlife in India through the protected area-centric approach. Protected areas are well-defined geographical spaces, recognised through legal and other means, to achieve long-term conservation of nature with its associated ecosystems. The first Wildlife Action Plan was released for 1983–2001 and the second for 2002–2016.The third Action Plan was drafted by a 12-member committee headed by J.C. Kala, a former Secretary in MoEFCC. The plan contains detailed recommendations to be practiced in the protected areas. The key focus areas of this plan are wildlife health, conservation of marine ecosystem, reduction of HWC, conservation of coastal ecosystems and integration of climate change into wildlife planning.

- This is the first time that an action plan on wildlife is recognising the impact of climate change on wildlife.
- The plan focuses on integrating climate change mitigation actions into the wildlife management planning process.
- It suggests planting along ecological gradients and assisted wildlife migration because climate change has caused the death of certain plants.
- It has a special focus on habitat conservation in coastal, marine and inland aquatic ecosystems and on the recovery of threatened species.
- The plan talks about the issue of animal–human conflict and its impact on wildlife habitats, such as its shrinkage, deterioration and fragmentation.
- Highlighting the importance of people's participation in this regard, the plan encourages awareness about conservation, eco-development, education, training and outreach programmes for the people.
- It also suggests that the private sector participate in the wildlife conservation process.

It prescribes that a concerted approach be adopted to protect, conserve and manage wildlife throughout the country. The NWAP recognizes that HWC has caused monetary and material loss directly and indirectly to humans and has led to growing antipathy among the people to wildlife conservation, resulting in retaliatory killing or injuries to animals. It also recognises that other than habitat degradation and fragmentation, HWC in several cases has also increased owing to substantial recoveries of once dwindling populations of some animals such as ungulates and to the cultivation of crops more palatable to the wild animals along the fringes of forests. The welfare of animals must be the primary consideration, and animals must be captured when it is absolutely necessary when managing conflict. The captured animal must be released in the wild according to the species-specific exigency of the situation. Animals in trauma, injured animals and juveniles who cannot sustain themselves in the wilderness should not be released. Released animals should be monitored using modern technological aids in order to determine the success of the relocation. Overall, the NWAP prescribes that HWC must be a focus in wildlife management and related aspects need to be made core components thereof.

6.3 National Human-Wildlife Conflict Mitigation Strategy and Action Plan of India (2021-26)

HWC-NAP is built on 'systems thinking', which enables us to find the root causes of a problem, rather than only treat its symptoms, and thus can be helpful in perceiving new opportunities. The model of Drivers–Pressures–State–Impact–Response (DPSIR) is used as the basic conceptual framework.

HWC-NAP has five strategic priorities:

Strategic Priority A: Addressing the key drivers of HWC in India

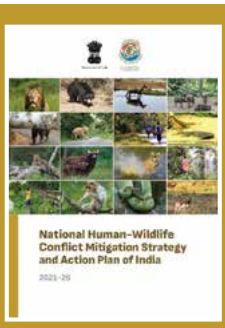
Strategic Priority B: Reducing the direct pressures that lead to a conflict situation

Strategic Priority C: Making available information and data on HWC to decision-makers and field response teams, for effective mitigation

Strategic Priority D: Reducing the negative impacts of HWC on humans and wildlife

Strategic Priority E: Effectively implementing the national, state, and local HWC mitigation plans by strengthening financial and institutional structures

These priorities are complemented by 24 strategic goals, 88 desired results and achievements, and 54 indicators designed to measure progress at the process, output, and impact levels.



The foundation for developing an institutional framework for implementing HWC-NAP already exists in India, in the form of established systems and mechanisms, at the central, state, and division/district levels. Additional soft structures and mechanisms are planned, including a national HWC Mitigation Forum, State-Level Coordination Committees (SLCCs), and District-Level Coordination Committees (DLCCs), to ensure that all key stakeholders are able to effectively participate in the planning, development, and implementation of HWC mitigation intervention.

The HWC-NAP is supported by four supplementary frameworks:

6.4 Common framework to develop state-level Human-Wildlife Conflict Mitigation Strategy and Action Plan

The effectiveness and sustainability of all HWC mitigation strategies and plans depend on the successful involvement and commitment of key stakeholders, at all levels of decision-making. While the union government, through MoEFCC, provides an overall enabling policy and institutional environment, state-level authorities play a crucial role in addressing HWC at the field level. In this context, to operationalize the implementation of the HWC-NAP, it is imperative that the state governments develop HWC-SAPs.

6.5 Common framework to develop division-level Human-Wildlife Conflict Management Action Plans

HWC-MAP facilitates bottom–up feedback to the state- and national-level strategies and action plans on good practices in HWC mitigation. This integration of field knowledge and experiences into the national- and state-level plans will ensure that the approach taken by the national and state governments is reflected in the local-level planning and implementation.

7. Advisories and Guidelines relevant to HWC Mitigation

To effectively and responsively address the issue of HWC, the Ministry of Environment, Forest and Climate Change (MoEF&CC), the Government of India has facilitated, under Indo-German Coperation, the development of 14 guidelines taking a participatory, integrated, and inclusive approach.

Key elements of the process of development of HWC-NAP and guidelines included a systematic effort to assess the existing HWC situation—magnitude, impacts, effectiveness, and wildlife-friendliness of existing mitigation measures, robust mechanisms for consultation with the key stakeholders to develop a common understanding and shared vision, identification of strategic priorities, an action plan, and mechanisms to monitor progress and results.

HWC-NAP is a guiding document facilitating a holistic approach to mitigating HWC, inclusively and sustainably, and is supported by four supplementary frameworks.

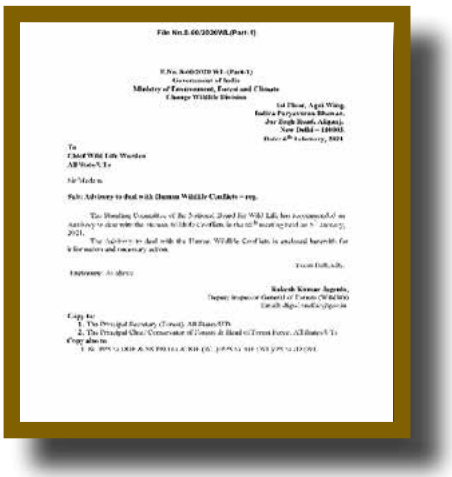
The guidelines aim to facilitate a common understanding among key stakeholders on what constitutes effective and efficient mitigation of the species-specific conflict in India, leading to co-existence, and to ensure standardization in performing mitigation operations most effectively and efficiently, with minimum damage to humans and animals.

Guidelines on Human–Wildlife Conflict (HWC) Mitigation get the overall context from the Wild Life (Protection) Act 1972, National Wildlife Action Plan (2017), Human–Elephant Conflict Guidelines (2017), Advisory to deal with human wildlife conflicts (MoEFCC 2021) and National Human–Wildlife Conflict Mitigation Strategy and Action Plan (HWC-NAP) . HWC-NAP provides the overall conceptual and institutional framework for implementing the guidelines.

7.1 Advisory to deal with Human Wildlife Conflicts (2021)

The Standing Committee of the National Board of Wildlife (SC-NBWL) in its 60th meeting held on 05th January has approved the advisory for the management of Human-Wildlife Conflict (HWC) in the country. The advisory makes important prescriptions for the States/ Union Territories for dealing with human-wildlife conflict situations and seeks expedited inter-departmental coordinated and effective actions.

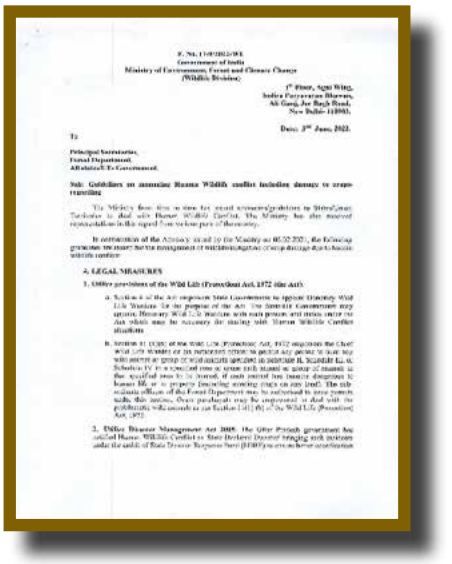
Highlights of the advisory are:



- State Governments/ UT Administrations of the affected States/ UTs should constitute a State Co-ordination Committee (SLCC) headed by the Chief Secretary with membership of Secretary in-charge of finance, natural resources, infrastructure, home and forest departments of State/ UT, Director General of Police, PCCF-HoFF and representatives of concerned Central Government departments (Railways, Revenue Intelligence, Customs, etc.). The Chief Wild Life Warden is to act as the member secretary of this committee.
- On the recommendation of Chief Wild Life Warden (CWLW), the State Government/UT Administration should constitute an inter-departmental coordination committee "District-level Coordination Committee (DLCC)" in all or identified district(s) of the State/ UT that are vulnerable to HWC to be chaired by District Collector, and comprising of district-level officers of departments/organisations included in the SLCC. The Wild Life Warden of the District headquarter is to act as Member Secretary.

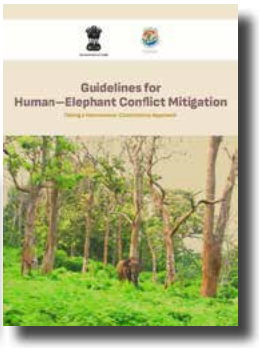
7.2 Guidelines on managing Human Wildlife conflict including damage to crops (June 2022)

The Ministry from time to time has issued advisories/guidelines to States/Union Territories to deal with Human-Wildlife Conflict. The Ministry has also received representations in this regard from various parts of the country. In continuation of the Advisory issued by the Ministry on 06.02.2021, the following guidelines are issued for the management of wildlife/mitigation of crop damage due to human-wildlife conflict.



7.3 Guidelines for Mitigating Human-Elephant Conflict

HEC mitigation so far has largely focused on the use of barriers, short-distance drives, and *ex gratia* payments or compensation for loss and damages. While these efforts have helped contain HEC, the problem continues to grow as a holistic approach has not been incorporated into the mitigation effort (MoEFCC 2023a).



A holistic approach to HEC is elaborated in the "Guidelines for Human-Elephant Conflict Mitigation'.

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7.4 Guidelines for Mitigating Human-Leopard Conflict

Several measures are being implemented to mitigate HLC, including making *ex gratia* payments for human injuries and losses, establishing Rapid Response Teams (RRT), using early warning equipment (such as camera traps and radio collars/chips), carrying out forensic investigations and capturing and translocating or confining Leopards (MoEFCC, 2023g).

A holistic approach to HLC mitigation is elaborated in the

"Guidelines for Human-Leopard Conflict Mitigation'

7.5 Guidelines for Mitigating Human-Gaur Conflict

HGC mitigation so far has been largely focused on the use of barriers, short-distance drives and ex gratia payments for damages. While these efforts have helped in mitigating HGC to some extent, a holistic approach to HGC mitigation is required to ensure effectiveness and sustainability in the mitigation efforts (MoEFCC, 2023d).

A holistic approach to HGC mitigation is elaborated in the "Guidelines for Human-Gaur Conflict Mitigation'

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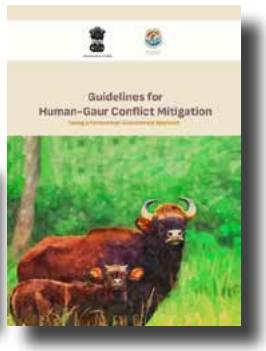


7.6 Guidelines for Mitigating Human-Bear Conflict

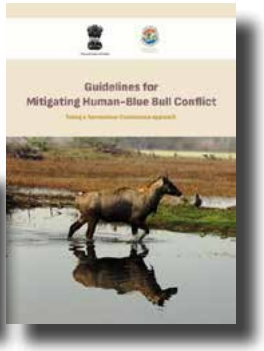
The current response to HBC includes measures to prevent retaliatory killings of bears by humans, creating awareness amongst local communities to reduce accidental encounters and rescuing stranded bears or bears-in-conflict. As HBC leads to a changed perception of humans towards wildlife, the overall support for conservation declines. Therefore, it is important to address the issue holistically, i.e., address the drivers and pressures, further develop prevention and emergency response measures and reduce the vulnerability of humans and bears to

HBC is in the interest of the overall need for the conservation of wildlife/biodiversity in the country (MoEFCC, 2023h).

A holistic approach to HBC mitigation is elaborated in the "Guidelines for Human-Bear Conflict Mitigation'

7.7 Guidelines for Mitigating Human-Bluebull Conflict

To ensure effective HBLC mitigation, there is a need for further information and knowledge management on effective crop guarding methods against Blue Bulls, and standardization of capture and translocation methods for the Blue Bull in India (MoEFCC, 2023c). A holistic approach to HBLC is elaborated in the "Guidelines for Human-Blue Bull Conflict Mitigation'.



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7.8 Guidelines for Mitigating Human-Blackbuck Conflict (HBBC)

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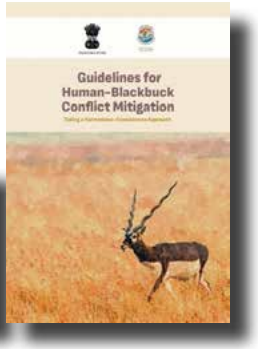
HBBC mitigation measures that are effective and wildlife-friendly, need to be developed and further improved towards crop protection, including fencing, as well as procedures for capture, handling, transportation and translocation, identification of suitable habitats for relocation, and required capacity development of the personnel (MoEFCC, 2023e).

A holistic approach to HBBC mitigation is elaborated in the "Guidelines for Human-Blackbuck Conflict Mitigation'.



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7.9 Guidelines for Mitigating Human-Crocodile Conflict

HCC involves two species of crocodile, viz., saltwater crocodile and Mugger, with key impacts on humans in the form of human injury and death, livestock injury and death. HCC is a serious issue in rural and semi-rural environment.

Human–crocodile conflict is reported in seven states (Odisha, West Bengal, Andaman and Nicobar Islands, Gujarat, Maharashtra, Karnataka and Tamil Nadu). The drivers of HCC include an increase in the human population close to crocodile habitats, changing lifestyles and economic aspirations; reduced appreciation of wildlife; land-use changes; tourism policies; aquaculture; fishing; and wetland habitat fragmentation, loss and degradation (MoEFCC, 2023).

A holistic approach to HCC mitigation is elaborated in the "Guidelines for Human-Crocodile Conflict Mitigation'.

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7.10 Guidelines for Mitigating Human-Snake Conflict

Challenges in mitigating HSC are more complex than any other species-in-conflict. With the enormous increase in the human population, coupled with habitat loss and habitat degradation, the frequency of human–snake interactions has also increased rapidly (MoEFCC, 2023j).

A holistic approach to HSC mitigation is elaborated in the "Guidelines for Human-Snake Conflict Mitigation'. These guidelines have been developed by MoEFCC together with the National Center for Disease Control (NCDC), and Ministry of Health and Family Welfare (MoHFW), under the Indo-German Project.

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7.11 Guidelines for Mitigating Human-Wild Pig Conflict

A key factor of HWPC may be the availability of only a limited number of effective mitigation measures. Therefore, the desired solution may involve a holistic approach that addresses the drivers and pressures, along with effective preventive measures, while reducing the vulnerability of local communities and wild pigs.

A holistic approach to HWPC is elaborated in the "Guidelines for Human-Wild Pig Conflict Mitigation'.

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7.12 Guidelines for Mitigating Human-Macaque Conflict

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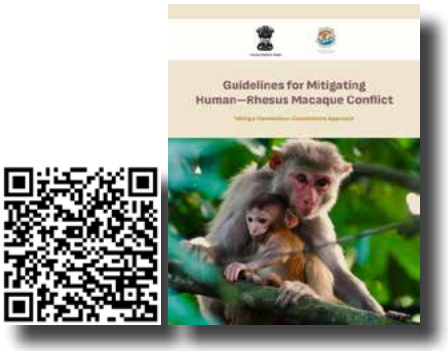

Periodic estimation of the Rhesus Macaque population across the distribution range in India is the highest priority. In states where Rhesus Macaques were declared vermin, permitting their hunting as a measure to reduce HRMC, effectiveness of such measures may be studied and further strengthening of these measures may be done; capacity needs assessment of the local community as well as the frontline staff may be done in order to assess the capacity development needs for effective HRMC. Some states have used non-lethal mitigation measures with considerable success, but the long-term effectiveness of these measures is yet to be assessed (MoEFCC, 2023f).

A holistic approach to HRMC mitigation is elaborated in the

“Guidelines for Human-Rhesus Conflict Mitigation’

7.13 Guidelines for Forest-Media Cooperation

The media can play an important role in HWC mitigation, as it not only reports on the conflict but also creates awareness of what is the holistic approach to HWC mitigation, what is already being done and what more needs to be done, if provided with the relevant information. At present, most of the good practices in forest-media cooperation on HWC mitigation largely exist due to individual efforts. To ensure that the forest-media cooperation is institutionalized, a systematic strategy for engagement is required.

These guidelines intend to facilitate a systematic engagement between media and the forest sector, in terms of dialogue and joint capacity development measures at the institution level, subsequently working towards a common goal of harmonious coexistence between humans and wildlife in the country.

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7.14 Guidelines for Health Emergencies

To effectively address and manage health emergencies during HWC mitigation and tooperationalise a One Health approach to ensure the well-being of humans, animals and the environment, a coordinated effort of wildlife, veterinary and public health is required at the local level, bringing together field teams from these sectors, with the overarching cooperation with the district administration, rural development department.

While the overall planning and coordination of human–animal conflict mitigation operations will be the responsibility of the state forest department, all other concerned key departments and agencies participate in and support the

operations and carry out their functional responsibilities in coordination with the forest department to implement these guidelines.

The guidelines address the issue of health, adopting a holistic approach.

The Ministry of Health has been implementing the 'National One Health Programme for Prevention and Control of Zoonotic Diseases' since the 12th Five-Year Plan in coordination with the Ministry of Fisheries, Animal Husbandry and Dairying and the Ministry of Agriculture. Under the programme, various initiatives are being undertaken, including capacity building of medical, veterinary and wildlife professionals, laboratory strengthening for diagnosis of zoonotic diseases in humans and animals and creating community awareness. State-level zoonosis committees comprising the human, animal and wildlife sectors have already been constituted in 34 states.

These guidelines will further strengthen the ongoing efforts by providing specific advice on addressing health emergencies arising due to HWC situations and taking a One Health approach in all measures relevant to HWC mitigation.

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7.15 Guidelines for Crowd Management

Human–wildlife conflict (HWC) and its mitigation are complex, multi-dimensional and dynamic processes. Thus they require an integrated and holistic approach to finding solutions for prevention and mitigation.

One of the critical areas of concern is the crowd-related incidents in HWC situations that are reported regularly from different parts of the country. There are various causes and triggers for the uncontrolled and retaliatory behaviour of the crowd gathered at the conflict site, including an element of curiosity and a limited understanding of the behaviour and ecology of wild animals. Crowd behaviour can be unpredictable. It can vary from displaying a curiosity to see large animals (to see mega-mammals) to demonstrating irresponsible behaviours (getting too close to wild animals to click pictures or shoot videos to cover such incidents) and very aggressive behaviours (frenzied mobs trying to lynch an animal in retaliation). Sometimes, the crowd is hostile and can even harm forest officials/property and wild animals, due to panic and stress, especially if there is human death or injury caused by the wild animal.

The guidelines aim to facilitate a common understanding among key stakeholders on what constitutes effective and efficient crowd management during HWC-related situations and provide a framework for inter-agency communication and coordination in related crowd management operations.

These guidelines provide measures to prevent and mitigate the negative impacts on people, property and wild animals that may arise due to crowd-related incidents during HWC situations.

These guidelines further provide details on the roles, responsibilities and joint tasks of key stakeholders for effectively mitigating and responding to crowd-related incidents during human–wildlife conflict situations.

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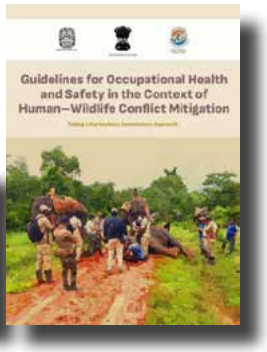
7.16 Guidelines for Occupational Health and Safety

Mitigating human-wildlife conflict (HWC) invariably includes tracking, capture, tranquilisation, restraint/ handling of dangerous wild animals, using hazardous scheduld drugs and exposure to zoonotic diseases. These present unique risks and hazards that require specialised skills, education and awareness to prevent harm. Wildlife managers, veterinarians, biologists and members of response teams face numerous and diverse hazards and risks classified as physical, biological, chemical, mental/ psychological and allergic hazards of the profession and an increased risk of allergen-induced anaphylactic shock. In the context of HWC, a hazard is the inherent danger involved in the capture, tranquilisation and translocation of a wild animal in conflict. The risk is a measure of the likelihood of a drastic consequence of wild animal restraint/ handling and the inherent hazards of such operations.

These guidelines aim to prevent and mitigate accidents, occupational injury, illness, exposure to threats to safetyand other hazards faced by personnel associated with management of wild animals in conflict.

These guidelines focus on developing a common understanding, among the key stakeholders, on the occupational health and safety issues associated with restraint/handling of wild animals, safety training programmes and hazard and risk assessment and provide knowledge of the medical evaluations, vaccinations or immunisations (tetanus, rabies, etc.) involved and the laws in place in India for ensuring occupational health and safety when managing wild animals-in-conflict. These guidelines take into consideration the 'National One Health Programme for Prevention and Control of Zoonotic Diseases' being implemented by the Ministry of Health & Family Welfare (MoHFW), Government of India in coordination with the Ministry of Fisheries, Animal Husbandry and Dairying and the Ministry of Agriculture.

https://indo-germanbiodiversity.com/pdf/publication/publication25-04-2023-1682407397.pdf



8. Government schemes and programmes addressing HWC mitigation

HWC can be managed through a variety of approaches. Prevention strategies endeavour to avoid the conflict in the first place and take action towards addressing its root causes. Protection strategies are implemented when the conflict is certain to happen or has already occurred. Mitigation strategies attempt to reduce the level of impact and lessen the problem. The main difference between the options is the moment at which they are implemented. By definition, management techniques are only cost-effective if the cost of implementing the technique is less than the value of the damage, taking into account the fact that a short period of active management may have a continued effect by instating longer-term protection of crops or herds. The various management possibilities are presented according to the characteristics of the conflict (whether they relate to humans, production, animals or the environment) rather than according to their ability to prevent or mitigate damage.

8.1 Compensation/*ex gratia* payments

The payment of compensation in the event of loss is usually confined to a specific category of loss, such as human death or killing of livestock by wild animals, to some extent, crop damage and damage to properties. These schemes are basically funded pby Government schemes. All are designed to increase damage tolerance levels among the affected communities and prevent them from taking direct action, such as retaliatory killings, themselves.

This system is not sustainable as it depends heavily on the budget of the governments/local governing bodies and/or non-governmental organization (NGO) support. Finally, it does not encourage villagers to protect their holdings and to coexist with wild animals because there are no penalties for actions that exacerbate HWC. Benefit-sharing can also be considered within this broader approach, which provides tangible benefits to land owners in recognition of the role they play in hosting wildlife on their land and covering associated costs. In this way wildlife becomes a valuable resource rather than a liability.

8.2 Crop insurance: Pradhan Mantri Fasal Bima Yojana (PMFBY)

PMFBY aims at supporting sustainable production in the agriculture sector by way of

- providing financial support to farmers suffering crop loss/damage arising out of unforeseen events.
- stabilizing the income of farmers to ensure their continuance in farming.
- encouraging farmers to adopt innovative and modern agricultural practices.
- ensuring flow of credit to the agriculture sector that will contribute to food security, crop diversification and enhancement of the growth and competitiveness of the agriculture sector besides protecting farmers from production risks.

https://pmfby.gov.in/

9. Way forward

9.1 HWC mitigation in environmental impact assessments and strategic environmental assessments

One legal instrument specifically of relevance to mainstreaming HWC mitigation is impact assessment. In the following section, we discuss two forms of impact assessment: Environmental Impact Assessment (EIA), which is already a mandatory requirement in India, is supported by law but a lot is to be done to ensure that it facilitates in integrating human-wildlife conflict mitigation concerns into other sectors' plans and projects, and Strategic Environmental Assessment (SEA), which is still in its infancy is purely voluntary. These two differ in scales and objectives.

To ensure that development is planned and implemented with human-wildlife conflict in mind, impact assessment is being used as an important tool. The major conventions on biodiversity—CBD, the Ramsar Convention and the Convention on Migratory Species— recognise impact assessment as an important decision-supporting tool to help plan and implement development with biodiversity – including wildlife—in mind.

The CBD requires parties to apply impact assessment to projects (EIA) as well as to programmes, plans and policies (SEA), which have potential negative impact on biodiversity.

Environmental legislation in India may offer several opportunities to address HWC, of which Environmental Impact Assessment (EIA) related to development projects, and Strategic Environment Assessment (SEA) related to the development of plans, programmes and policies may of importance.

- If development projects may compound HWC, this should be addressed in EIA. If a significant effect is expected of the construction, presence or operation of the realized structure or other landscape change, the EIA prescribes:
  - measures in the Environmental Management Plan accompanying the project to mitigate the impact,
  - compensation of the increased impacts,
  - the application of an alternative development scenario having less or no impact, or
  - the cancelation of the development project.
- Similarly, SEA can be used to assess the influence of plans, programmes and policies on HWC, and prescribe adaptations to mitigate negative effects and to strengthen positive effects. Addressing HWC in SEA is for example relevant for the development of land use plans, sector development plans and programmes, infrastructure development plans, urban development plans, as well as policies affecting the use of land and natural resources.

Strategic Environmental Assessment (SEA)

- SEA refers to a range of 'analytical and participatory approaches that aim to integrate environmental considerations into policies, plans and programmes and evaluate the inter-linkages with economic and social considerations.' SEA can be described as a family of approaches that use a variety of tools, rather than a single, fixed and prescriptive approach. A good SEA is adapted and tailor-made to the context in which it is applied. This can be thought as a continuum of increasing integration: at one end of the continuum, the principal aim is to integrate the environment, alongside economic and social concerns, into strategic decision-making; at the other end, the emphasis is on the full integration of the environmental, social and economic factors into a holistic sustainability assessment.

- SEA is applied at the very earliest stages of decision-making both to help formulate policies, plans and programmes and to assess their potential development effectiveness and sustainability. This distinguishes SEA from more traditional environmental assessment tools, such as the EIA, which have a proven track record in addressing the environmental threats and opportunities of specific projects but are less easily applied to policies, plans and programmes. SEA is not a substitute for, but complements, EIA and other assessment approaches and tools.

Table 2.1. SEA and EIA compared

EIA	SEA
Applied to specific and relatively short-term (life-cycle) projects and their specifications.	Applied to policies, plans and programmes with a broad and long-term strategic perspective.
Takes place at early stage of project planning once parameters are set. Considers limited range of project alternatives.	Ideally, takes place at an early stage in strategic planning. Considers a broad range of alternative scenarios.
Usually prepared and/or funded by the project proponents.	Conducted independently of any specific project proponent.
Focus on obtaining project permission, and rarely with feedback to policy, plan or programme consideration.	Focus on decision on policy, plan and programme implications for future lower-level decisions.
Well-defined, linear process with clear beginning and end (e.g. from feasibility to project approval).	Multi-stage, iterative process with feedback loops.
Preparation of an EIA document with prescribed format and contents is usually mandatory. This document provides a baseline reference for monitoring.	May not be formally documented.
Emphasis on mitigating environmental and social impacts of a specific project, but with identification of some project opportunities, off-sets, etc.	Emphasis on meeting balanced environmental, social and economic objectives in policies, plans and programmes. Includes identifying macro-level development outcomes.
Limited review of cumulative impacts, often limited to phases of a specific project. Does not cover regional-scale developments or multiple projects.	Inherently incorporates consideration of cumulative impacts.

Environmental impact assessment (EIA)

- EIA is a planning tool used to predict and evaluate the potentially significant impacts of the proposed action and provides a mitigation plan for minimising adverse impacts for making decisions on the proposed project/program/policy. It is a procedure to know the positive and negative aspects of a proposed activity, including the natural, social and economic aspects. It is a decision-making process to decide whether a developmental project must start or not.
- The International Association for Impact Assessment (IAIA) defines EIA as 'the process for identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of development proposals prior to major decisions being taken and commitments made.' In environmental cases, the purpose of the assessment is to ensure that decision-makers consider the ensuing environmental impacts when deciding whether a project should be allowed to proceed or not. The EIA includes likely adverse effects on human beings, vegetation cover, animal kingdom, air, water, land and property.
- The EIA is a tool that seeks to ensure sustainable development through the evaluation of those impacts arising from a major activity (policy, project or programme and plan) that are likely to have environmental effects. The purpose of EIA is to ensure the protection and conservation of the environment and natural resources, including human health aspects, against uncontrollable development. It is anticipatory, participatory and systematic, and relies on multidisciplinary input.
- Potential HWC may be included in the ToR for new roads or railways projects to avoid cutting off migration routes. This should be supported by the use of GIS and remote sensing technology.

9.2 Division-level HWC Management Action Plans to maximize the leveraging of the legal, policy and administrative framework in each division, taking a landscape approach

For systematically addressing human-wildlife conflict in the division, a HWC Management Action Plan (HWC-MAP) should be developed by the WPO, in the format provided in Box xx. The objective of the HWC Management Action Plan is to facilitate the implementation of effective and efficient HWC mitigation strategies at the divisions-level. HWC-MAP facilitates alignment of national, state and division level planning, in line with the 14 guidelines[1] released by the Ministry in March 2023. This Plan equips the officers with a holistic approach and instruments towards implementing HWC mitigation measures in a consolidated manner. This will facilitate in enhancing the efficiency and effectiveness of HWC mitigation measures being implemented within the division. The HWC-MAP will also serve as a key tool for inter-agency coordination on HWC mitigation.

1 10 species-specific guidelines-Guidelines for Mitigating Human -Elephant, -Gaur, -Leopard, -Snake, -Crocodile, -Rhesus Macaque, -Wild Pig, -Bear, -Blue Bull and -Blackbuck Conflict; and 4 guidelines on cross-cutting issues- Guidelines for Cooperation between the Forest and Media sector in India: Towards effective communication on Human-Wildlife Conflict Mitigation, Occupational Health and Safety in the Context of Human–Wildlife Conflict Mitigation, Crowd Management in Human-Wildlife Conflict Related Situations, Addressing Health Emergencies and Potential Health Risks Arising Out of Human—Wildlife Conflict Situations: Taking a One Health Approach.

Box 4: Guidance note for developing Human-Wildlife Conflict Management Action Plan (HWC-MAP)

STATEMENT OF SIGNIFICANCE

The National Wildlife Action Plan (NWAP) 2017-2031 mandates each territorial division to develop and implement a Human-Wildlife Conflict Management Action Plan (HWC-MAP), for systematically addressing human wildlife conflict (HWC) mitigation. HWC-MAP facilitates bottom-up feedback to the state and national-level strategies and action plans, on good practices in HWC mitigation. This integration of field knowledge and experiences into the national and state-level plans will ensure that the approach taken by the national and state Governments is reflected in the local-level planning and implementation.

To operationalize the holistic and participatory approach, and to integrate the processes and protocols of the National HWC Mitigation Strategy and Action Plan, HWC-SAP and species-specific Guidelines, it is necessary that an anchoring plan – HWC Management Action Plan (HWC-MAP) – is developed at the forest division level. Since all operational planning related to wildlife management is done at the division level, it is critical to integrate HWC mitigation into the division-level plans. However, since **most of the large wildlife species-in-conflict use large areas at the landscape level, it is important that the plans take into consideration factors related to conflict at the landscape level.** The HWC-MAP also provides anchoring points and instruments for cooperative planning and implementation between several forest divisions within the same landscape.

This Plan provides the Divisional Forest Officer (DFO) with a holistic approach and required instruments towards implementing HWC mitigation measures in a consolidated manner. This will facilitate in enhancing the efficiency and effectiveness of HWC mitigation measures being implemented within the division. The HWC-MAP will also serve as a key tool for inter-agency coordination on HWC mitigation.

A common framework for developing HWC-MAPs1 has been agreed under the Indo-German Cooperation on Human-Wildlife Conflict Mitigation (2017-23) and HWC-MAPs for Virajpet and Madikeri divisions in Karnataka, Haridwar and Rajaji in Uttarakhand and Gorumara in West Bengal are developed under this project, which can be used as reference

RECOMMENDED PROCESS FOR DEVELOPING HWC-MAPS

STEP 1: Baseline process and desk review

STEP 2: Developing the draft action plan

STEP 3: Consultation with field-level officers and experts / Consultation with local communities / Consultation with other sectors

STEP 4: Revisions based on the feedback

STEP 5: Alignment of the HWC-MAP with other similar processes and documents, for e.g., National HWC Mitigation Strategy and Action Plan (HWC-NAP), state Human-Wildlife Conflict Strategy and Action Plan (HWC-SAP), species- and issue-specific Guidelines and Standard Operating Protocols (SOPs), Working Plan of division, and overall Strategic Plan of the state

To support in implementation of this Plan, an "Implementor's toolkit" is developed. The Toolkit also includes details on the development of HWC-MAP, to facilitate divisions in developing and implementing these plans.Step 2: Obtain a drug import license/permit from the Drugs Controller General (India)

After obtaining the "No Objection" from the Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, apply for a drug import permit from the Central Drugs Standard Control Organisation.

1 https://moef.gov.in/wp-content/uploads/2022/01/National-Human-Wildlife-Conflict-Mitigation-Strategy-and-Action-Plan-of-India-2.pdf

Purpose and objectives:

The purpose of the HWC Management Action Plan is elaborating an integrated and landscape-based approach for HWC mitigation for minimising impacts on the affected people and animals in Gorumara Wildlife and its adjoining landscape, by ensuring a coordinated effort by all levels of government and non-government institutions.

The objective of the HWC Management Action Plan is to facilitate the implementation of effective and efficient HWC mitigation strategies, aligned with the national and state-level HWC Mitigation Strategy and Plans, and HWC mitigation guidelines issued by the national and state governments.

Guiding Principles and Approach:

The HWC-MAP is planned, developed and will be implemented to ensure immediate, adequate and sensitive response to HWC situations in Gorumara Wildlife, with a focus on preventive measures.

Community-centric Participatory approach: The HWC-MAP will be implemented through a participatory planning process involving all major stakeholders, using both vertical and horizontal coordination approaches. This would include government officers from various line agencies, the private sector, civil society, NGOs, research and scientists, policymakers, people's elected representatives, local communities and all those who have a stake in HWC mitigation. Rapid response teams and other field personnel will be included in the entire process, to ensure vertical coordination. The plan will be sensitive to the special needs of vulnerable sections such as rural and urban poor, and youth. The concerns of women will be specifically addressed.

Harmonious co-existence approach: Both humans and wildlife will be protected from conflicts while maintaining the balance between the needs of humans and the conservation of nature. All efforts will be made to ensure that the site-specific mitigation measures are developed, assessed, customized implemented and evaluated, on the basis of effectiveness and wildlife-friendliness.

Holistic approach in addressing Human-Wildlife Conflicts by considering the thematic triangle of - addressing the driver and pressures - taking measures for prevention - taking measures to reduce the damage: Addressing the drivers and providing a conducive policy environment, through policy-making and cross-sectoral cooperation, i.e. actions that halt or prevent the creation of new HWC situations or the escalation of existing ones; Effective use of instruments, traditional knowledge and modern technology for preventing the incidents of conflict, i.e. actions to contain, minimize or resolve existing problems; and reduction of the impact of HWC on both humans and wildlife, by using effective economic, communication and cooperation instruments, i.e. actions that deal with the impact of any residual or unavoidable conflict incidents. Landscape approach: Recognizing that unless comprehensive and integrated HWC mitigation plans are implemented over several forest divisions across the landscape, the problem is likely to only shift from one place to another, this plan will consider the larger landscape while developing HWC mitigation measures. One Health approach is taken, especially when planning HWC mitigation measures in the forest fringe areas, in close coordination with the public health and Department of Animal Husbandry. A systematic joint response involving relevant departments and agencies will be operationalized.

Alignment with other processes and plans: All efforts will be made to forge linkages with the Working Plan, Protected Area Management Plans, Tiger Conservation Plans and other similar plans and schemes of forest and other relevant departments.

The Cornerstones of the HWC-MAP: Six HWC mitigation instruments

Early warning and rapid Response: "Early Warning and Rapid Response (EWRR)" is a set of tools, processes and personnel competencies needed for the timely and meaningful generation and dissemination of alert information to individuals, communities and establishments at risk, for optimal preparedness and response and at the appropriate time to reduce the likelihood of injury, death or crop damage. This system of "Early Warning and Rapid Response (EWRR)" will enhance the overall efficiency of mitigation efforts in the division. Early warning aims to the reduction of time of information reaching to the management so that appropriate decision can be taken thereafter to mitigate the HWC incidences. Since it is inevitable to prevent the wildlife and humans from using the same space, role of response teams for timely action to prevent the conflicts and

to reduce the impacts due to such incidents will remain one of the important foundation blocks of the human wildlife conflict mitigation strategy in India for the years to come. A tiered system of response, including a HWC Mitigation Hub, division-level and range-level Rapid Response Teams and community-based Primary Response teams will be facilitated and capacitated.

Competencies-based trainings of the Response teams: The issues surrounding HWC are complex. So are the capacities and competencies required to effectively and efficiently mitigate the conflict. There is increasing expectations by the public from the forest personnel with regard to the performance and ability to respond to HWC situations. This results in a disproportionally high burden on the field response teams, is they are not appropriately equipped, trained and protected. Capacity Development of the Rapid Response Teams, through competencies-based trainings will be an important pillar of this strategy.

Awareness and Communication measures to prevent accidental encounters of humans and wildlife-in-conflict: Risk or threat perception by humans is influenced by several factors, including cultural values, histories and ideologies, knowledge of animal behaviour, novelty of risk and several other factors. Awareness and information on animal behaviour, how to safeguard oneself, and an appreciation of the landscape will encourage behaviours among humans that will change their risk perception, reduce exposure of humans to wild animals, and thus reduce the conflict.

To ensure prevention of accidental encounters, one crucial measure for facilitating coexistence with wildlife will be develop and implement well-planned and effective interventions to facilitate interpretation and outreach using signages and digital medium. Awareness and communication measures for the local communities and other key stakeholders, including effective media engagement, will be an important priority and central theme to all efforts.

Facilitating Cross sector Cooperation: Management and dissemination of knowledge between key sectors and stakeholders is a foundational element of the holistic approach towards mitigating HWC. Departments, agencies and other stakeholders will be facilitated to systematically share data, information, experiences and knowledge with each other to co-create long-term solutions on HWC mitigation.

Sharing and managing knowledge is a complex process, which would require systematic and sustainable instruments and enablers to ensure success. Decision- makers, multi-disciplinary experts and practitioners would need to continuously exchange information on trends, challenges and good practices, with the aim to learn from each other and to find innovative solutions together.

Landscape level planning: For enhanced effectiveness, it would be important that officers look at the larger landscapes for planning and implementing HWC mitigation measures, as some species such as the Elephant and Tiger range/disperse over very large areas. Unless a comprehensive and integrated HWC plan is implemented over several forest divisions, the problem is likely to only shift from one place to another and will yield short-term relief rather than get actually addressed.

This HWC-MAP will, therefore, be implemented in alignment with the plans of the neighbouring divisions and protected areas in the landscape to effectively and sustainably address the HWC.

Reducing the impact of HWC on people and wildlife: Local communities bear the direct brunt of HWC, suffering loss of livestock, human lives and other economic losses, as a direct or indirect result of HWC. A significant priority for the division is to systematically map and analyse key stakeholders of HWC and ensure their effective participation in HWC mitigation measures, primarily through Community PRTs, and facilitating HWC-safe livelihood options, taking an inclusive approach.

OUTLINE OF THE HWC MANAGEMENT ACTION PLAN

Section 1: Guiding principles and expected outcomes

Purpose and objectives

Approach

Section 2: HWC Profile of the Division

2.1. Snapshot of the forest division - Key features of the landscape, wildlife and humans in the division

2.2. Background information and attributes of the landscape

[In this section, specific information and maps of the landscape features, biodiversity, and humans in relation to HWC, is to be presented in a usable digital format for analysis. This information and analysis will serve as the basis for further detailing the strategy for designing HWC mitigation measures for the division and adjoining landscape]

2.3. Humans, Culture and Livelihood

[Brief socio-economic synthesis; livelihood pattern; resource dependency; resource dependency assessment, how different line departments can facilitate to reduce resource dependency on forests and vulnerability of local communities in high-conflict areas/representative villages; synergies and trade-off among various land-use/livelihood patterns]

2.4. Threats, Issues and Problems (DPSIR framework)

2.5. Risk of conflict

[HWC Hotspots]

Section 3: Management actions for effective and efficient HWC mitigation

Monitoring the drivers and pressures of HWC in the division

Wildlife population assessment; anti-poaching measures; fire management; invasive species management; waste management around all HWC hotspots; measures to ensure safe sanitation at all HWC Hotspots; enabling humans to work on their risk perception and co-existence with wildlife within the same landscape.

Reducing HWC impacts on humans and wildlife, by adapting innovative cropping and animal husbandry practices; inclusive implementation of the plans.

Crop- and livestock insurance schemes; community-based wildlife tourism/community conservancies outside the protected areas; relocation of settlements/managing the relocated settlements; enhancing livelihood opportunities.

A system of assessing the effectiveness of mitigation measures; identifying conflict hotspots and maintaining all records at HWC Mitigation Hubs]

Prevention measures

[Early Warning and Rapid Response System – institutional structure and responsibilities; infrastructure development and provision of modern equipment for each team; occupational health and safety for the members of rescue teams.

Area of operation of Response Teams; role and responsibility of HWC Mitigation Hub; composition, role and responsibilities of the various Response Teams key elements of the capacity development approach for Response Teams.

Use of barriers (fences, ditches, canals, electric fences, solar fences, etc.) while keeping the landscape and animal's biology in mind.

Measures to strengthen cross-sector cooperation.

Inter-state dialogue, to understand the issues better and seek cooperation for mitigation of HWC.

Landscape-level HWC Mitigation Planning: studies and dialogue on possible measures for strengthening corridors, between pilot site and adjoining landscape]

Emergency response preparedness in the division

[Key elements and success factors for effective and efficient emergency response – role and responsibilities of response teams/personnel

Processes, Job Aids

Type, level and nature of emergency (framework for developing gradient matrix for responding to emergency situations); tasks involved in emergency response; emergency response teams up-to division level

Emergency Response Mechanism:

Receiving and channelizing the information. detection of an incident/early warning signal. first responder/ Incident Response Person (IRP): The IRP informs the control room, who in turn activates the Range Rapid Response Team Range RRT. Range RRT instructs the IRP to engage with the village Primary Response Team (Community PRT). activation of designated response teams.

General process:

Activation of decision-making/support processes; equipment; Occupational Safety and Health (Rapid Response Team/Primary Response Team Safety); activation of inter-department/departmental support teams at the division-level – which team? how to activate? area command/unified command, (HWC Mitigation Hub/ Control Room + DFO + Chief Wildlife Warden CWLW decision-making tree

Logistic Considerations:

Deployment of intra- and inter-agency Emergency Response Teams (Human Resources); Area of operation of designated Response Teams; Physical location of designated Response Teams (Node); earmarking of staging areas; modes of transport for Response Teams; Personal Protective Equipment (PPE) and personal communication devices of responders; boarding and lodging of Response Teams; requisition/attachment of specialists/experts with Response Teams (veterinary, elephants + mahouts, trackers, darter (from forest department); deployment of material resources (Equipment)

Typology of Material Resources

Checklist of available/authorized equipment with each designate response team

Pre-positioning of material resources (equipment, medical/veterniary supplies and others)

Storage of equipment, drugs and medical/veterniary supplies

Mode of transport for the material resources

Emergency Communication

(Internal – intra-agency; external – inter-agency)

First Aid/medical/veterinary interventions: dealing with medical emergencies arising due to mass casualties; First aid to orphaned young ones of species in the aftermath of an emergency incident; Transport of animals to veterinary centre**s**

Measures to strengthen cross-sector cooperation.

Inter-state dialogue, to understand the issues better and seek cooperation for mitigation of HWC.

Engaging people before/during and after Emergency situation

Crowd control and management procedures; media engagement

Stepwise emergency response procedure (Matrix: up to 72 hours)

Reduction of impact on humans and animals (wildlife)

Ex-gratia and compensation mechanism that is fair, transparent and provides sustainable livelihood]

Section 4: Operational Plan

Section 5: Resource Planning

[Infrastructure and human resources for implementing HWC-MAP.
Fostering partnerships.
Financial mechanism for implementing the plan in the most effective manner.
Consolidation of work related to HWC mitigation currently being implemented by various agencies in this landscape]

Section 6: Monitoring and Evaluation

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Appendix

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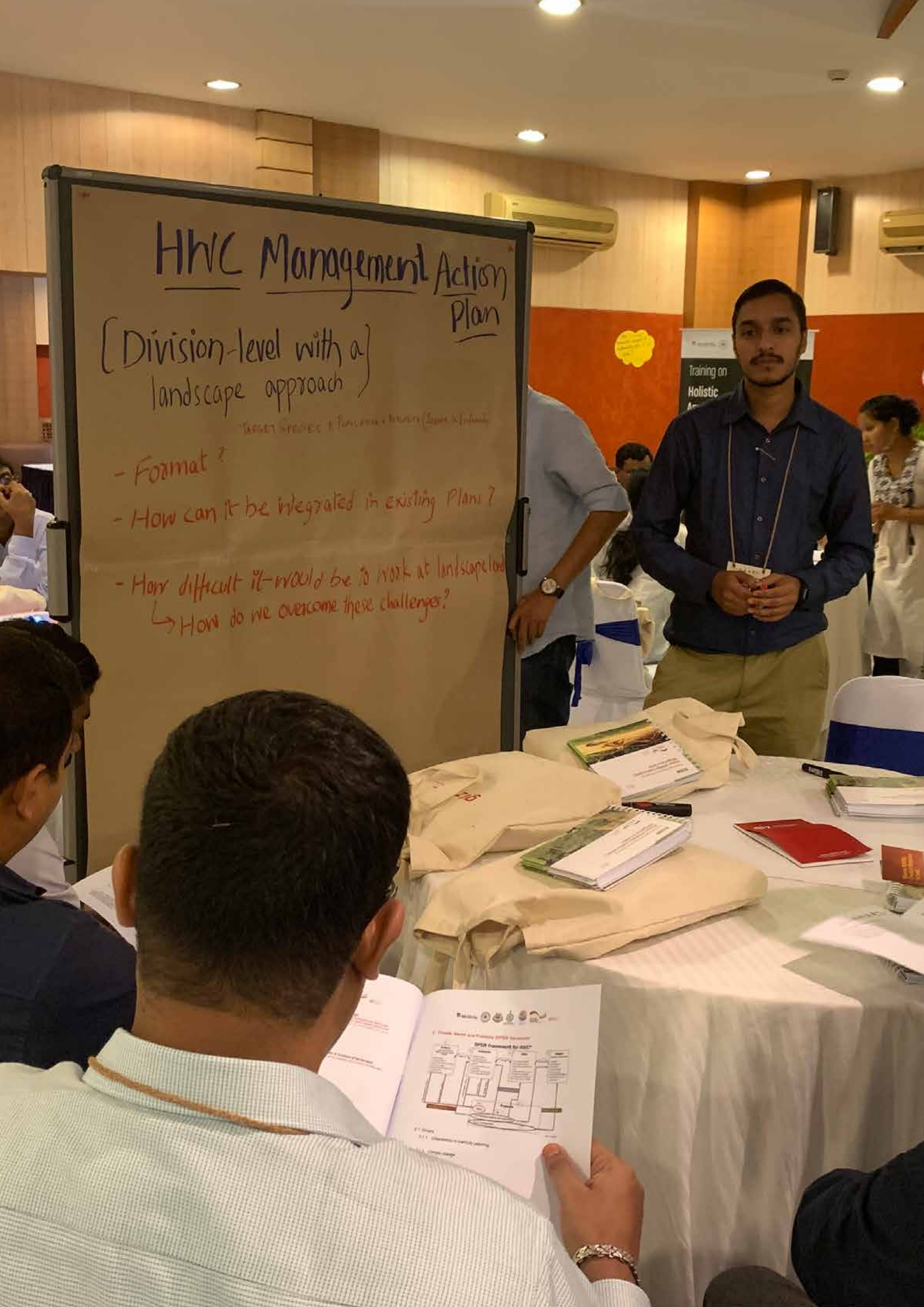
HWC Management Action Plan
[Division-level with a] landscape approach
- Format ?
- How can it be integrated in existing Plans ?
- How difficult it would be to work at landscape level
↳ How do we overcome these challenges?
Training on
Holistic

https://indo-germanbiodiversity.com/training-materials.html

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