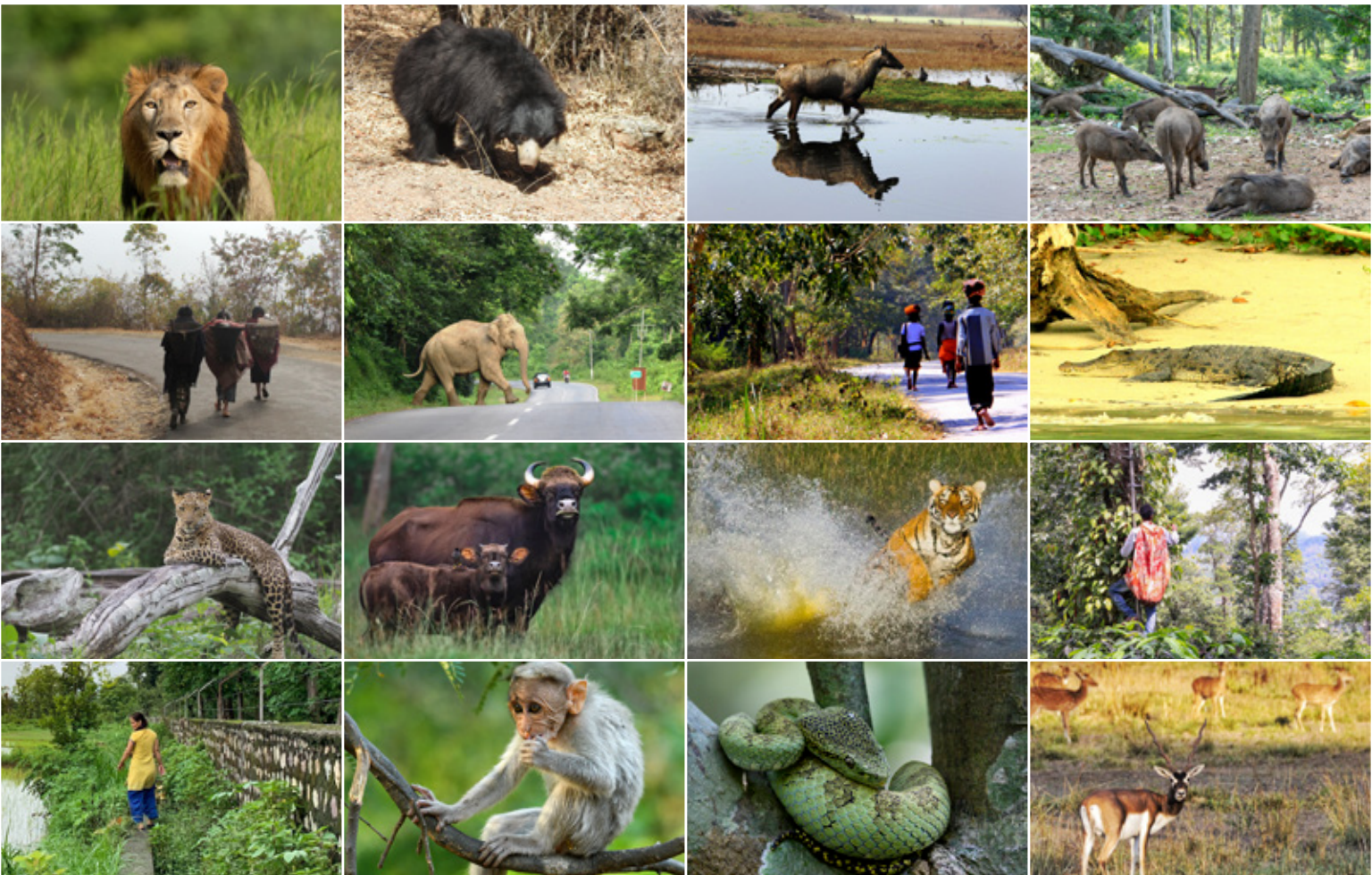




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Ministry of Environment,
Forest and Climate Change,
Government of India



National Human-Wildlife Conflict Mitigation Strategy and Action Plan of India

2021-26

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National Human–Wildlife Conflict Mitigation Strategy and Action Plan of India

2021–26



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ABBREVIATIONS

AO	Authorized Officer	MoHA	Ministry of Home Affairs
AWCSG	Asian Wild Cattle Specialist Group	MoRD	Ministry of Rural Development
BMC	Biodiversity Management Committee	MoU	Memoranda of Understanding
BMZ	German Federal Ministry for Economic Cooperation and Development	MP	Member of Parliament
CASFOS	Central Academy for State Forest Service	M&E	Monitoring and evaluation
CBD	Convention on Biological Diversity	NAARM	National Academy of Agricultural Research Management
CCF	Chief Conservator of Forests	NP	National Park
CEC	Central Empowered Committee	NAP	National Action Plan
CF	Conservator of Forests	NBAP	National Biodiversity Action Plan
CITES	Conservation on International Trade in Endangered Species of Wild Fauna and Flora	NBWL	National Board for Wildlife
CMO	Chief Medical Officer	NDRF	National Disaster Response Force
CMS	Convention on Conservation of Migratory Species of Wild Animals	NGC	National Green Corp
CrPC	Criminal Procedure Code	NGO	Non-Governmental Organization
CSR	Corporate Social Responsibility	NIRD	National Institute of Rural Development and Panchayati Raj
CVO	Chief Veterinary Officer	NTCA	National Tiger Conservation Authority
CWLW	Chief Wildlife Warden	NTFP	Non-Timber Forest Product
CZA	Central Zoo Authority	NTG	National Technical Group
DFO	Divisional Forest Officer	NWAP	National Wildlife Action Plan
DGP	Director General of Police	OP	Operating Procedures
DLC	District-Level Coordinator	PA	Protected Area
DLCC	District-Level Coordination Committee	PCA	Prevention of Cruelty to Animals Act, 1960
DLMAC	District-Level Advisory and Monitoring Committee	PCCF	Principal Chief Conservator of Forests
DNA	Deoxyribonucleic acid	PHS	Public Health and Sanitation
DPSIR	Drivers-Pressures-State-Impact-Response	PMFBY	<i>Pradhan Mantri Fasal Bima Yojana</i>
EDC	Eco-Development Committee	PRI	Panchayati Raj Institutions
EF	Evergreen Forests	PRT	(Community) Primary Response Team
EIA	Environmental Impact Assessment	REDD+	Reducing Emissions from Deforestation and Forest Degradation plus
EPA	Environment (Protection) Act, 1980	RFO	Range Forest Officer
ESZ	Eco-Sensitive Zone	RRT	(Division/ Range) Rapid Response Team
FCA	Forest Conservation Act, 1980	SAP	Strategy and Action Plans
FD	Forest Department	SACON	Salim Ali Centre for Ornithology and Natural History
FRA	Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act, 2006	SBWL	State Board for Wildlife
GIS	Geographical Information System	SCH	Schedule
GIZ	<i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i>	SDG	Sustainable Development Goals
GPS	Global Positioning System	SDRF	State Disaster Response Force
GRS	Grassland	SEA	Strategic Environmental Assessment
HoFF	Head of Forest Force	SEF	Semi-evergreen Forests
HWC	Human Wildlife Conflict	SFD	State Forest Department
HWLW	Honorary Wildlife Warden	SIRD	State Institute of Rural Development SHG Self-Help Group
HQ	Head Quarter	SLC	State-level Coordinator
IFA	Indian Forest Act, 1927	SLCC	State-level Coordination Committee
IGNFA	Indira Gandhi National Forest Academy	SOP	Standard Operating Protocol
IUCN	International Union for Conservation of Nature	SWIG	Special Interest Working Group
JFM	Joint Forest Management	TNA	Training Needs Assessment
LPG	Liquified Petroleum Gas	ToR	Terms of Reference
LULC	Land Use Land Change	UoI	Union of India
LWS	Local Wildlife Squad	UT	Union Territories
MAP	Management Action Plan	VFC	Village Forest Committee
MDF	Moist Deciduous Forests	WHO	World Health Organization
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act	WII	Wildlife Institute of India
MLA	Member of Legislative Assembly	WLS	Wildlife Sanctuary
MoEFCC	Ministry of Environment, Forest and Climate Change	WLPA	Wildlife (Protection) Act, 1972



Executive Summary

The National Human-Wildlife Conflict Mitigation Strategy and Action Plan (HWC-NAP) for India is a guiding document facilitating a holistic approach to mitigate human-wildlife conflict (HWC), in an inclusive and sustainable manner.

The HWC-NAP presents an opportunity and framework to mainstream HWC mitigation in policies, plans and programmes of the forest sector and other sectors and, at all levels of governance (national, state and local), to ensure harmonious co-existence and overall well-being of humans and wildlife, conservation of ecosystem services and sustainable economic development. This approach is consistent with Indian tradition of living in harmony with nature, the Vision for New India @75 and the 2030 Agenda for Sustainable Development.

The HWC-NAP is built on systems thinking aimed at holistically addressing the 'Drivers-Pressures-State-Impact-Response'. The HWC-NAP has five strategic priorities: addressing the drivers; reducing the pressures; data and information for decision making and rapid response; reduction of impacts on human and wildlife; and strengthening of institutional and financial structures for effective implementation. These priorities are complemented by 24 strategic goals, 88 desired results and achievements (at the outcome and outputs levels), and 56 indicators designed to measure progress (at process, output and impact levels).

The preparation of HWC-NAP has followed a four-year long consultative, participatory and an inclusive process, facilitated under the Indo-German Project on HWC Mitigation. Taking a blended bottom-up and top-down approach, a core group of experts drafted the document, with feedback and inputs from field practitioners and thematic experts, via a series of workshops, group consultations, meetings, review of existing documents and cases, as well as pilot testing of the concepts included in HWC-NAP.

Given that HWC mitigation is a complex issue and it will take time to set up the mechanisms for monitoring, personnel and processes, the first phase of the implementation (2021-2026) would serve as a capacity development phase. This phase will also be critical for states in setting up the mechanism and processes for development of state HWC strategy and action plans. They will also be creating enabling environment at state-level through State HWC Mitigation Strategy and Action Plan (HWC-SAP), and division-level HWC Management Action Plans (HWC-MAP), aligned with the national plan. Institutional structures such as National HWC Mitigation Forum, State-level Coordination Committees (SLCC), landscape-level HWC forum, District-level Coordination Committee (DLCC) will play active roles in bringing in the required cross-sector and inter-agency coordination, for effective implementation of the HWC mitigation plans and guidelines.

The HWC-NAP is supported by four supplementary frameworks: Supplementary Framework on Establishment and Capacity Development of HWC Mitigation Response Teams; Common Framework for Developing State Human-Wildlife Conflict Strategy and Action Plans: A Coordinated Approach towards Mitigating Human-Wildlife Conflict in India; Common Framework for Developing Division-level HWC Management Action Plans: A Coordinated Approach towards Mitigating Human-Wildlife Conflict in India; Supplementary Framework: Legislative Framework for National Human-Wildlife Conflict (HWC) Mitigation Strategy & Action Plan.

Also, the following issue-specific and species-specific guidelines are being developed, to provide focussed guidance: Forest-Media Cooperation; Occupational Health and Safety; Crowd Management; Medical Emergencies; Guidelines for Mitigating Human-Elephant, -Leopard, -Gaur, -Snake, -Crocodile, -Macaque, -Wild Boar, -Bear, -Bluebull, -Blackbuck conflict. To facilitate effective and efficient implementation of the HWC-NAP, an Implementer's Toolkit will be developed.



1. Background

Biodiversity is fundamental to sustain ecosystem processes, functions and the continued delivery of ecosystem services, which are the foundation of livelihood security, health and overall well-being of human societies. Conservation of biodiversity, including wildlife, is essential for India, not only because the consequences of biodiversity loss and the resulting loss of ecosystem services have a far-reaching impact on livelihoods and overall well-being of human communities, but also to preserve the cultural heritage in areas where co-existence is the natural way of living.

This situation in India, however, is changing. Increasing human population and consequent demand for natural resources is leading to degradation and fragmentation of natural habitats, thus creating a situation where the humans and wildlife are competing for the same resources. Human-wildlife conflict brings economic losses to the tune of millions of rupees to the local communities living on the forest fringes in India every year. The increasing frequency and intensity of crop damage and the emotional trauma attached, especially to cases of injury or death of humans or livestock, are making the communities less tolerant to wildlife.

This shift from 'co-existence' to 'conflict' has the potential to undermine the existing and future conservation efforts, and also hinder achievement of both global Sustainable Development Goals (SDG), and national development goals.

Human-wildlife conflict refers to the negative interaction between humans and wild animals, leading to adverse impacts such as injury or loss of human lives, crop, livestock and other properties, or even their emotional well-being, and equally negative impacts on wild animals and or their habitats.

HWC often involves several wildlife species that are recognised as keystone and umbrella species and provide immensely valuable ecosystem services. Thus, the removal of individuals of such species due to HWC, would change the ecosystem structure and resulting ecosystem services in an irreparable manner, leading to loss of livelihood opportunities for the most vulnerable sections of human society, including rural poor and women.

Keeping in mind that issues of HWC arise due to conflicting needs that are expressed in different dimensions, efforts will be made to consider that both humans and wildlife will be protected from conflicts, taking a balanced and 'harmonious co-existence' approach. An inclusive and holistic approach will be taken, addressing the issue of HWC from three angles. Firstly, by addressing the drivers and providing a conducive environment through policy-making and cross-sectoral cooperation. Secondly, by effective use of instruments, traditional knowledge and modern technology for preventing incidents of conflict. Thirdly, by reducing the impact of HWC, on both humans and wildlife, by way of compensation and awareness creation.

HWC mitigation refers to the interventions to reduce the negative impact of human-wildlife interaction on humans or their resources and on the wildlife or their habitats; it includes strategies to address the drivers and pressures of conflict, reducing the vulnerability of humans and wildlife, and institutional capacity development

2. Purpose, Vision, Mission and Guiding Principles

Purpose and Scope

The purpose of the National Human-Wildlife Conflict Mitigation Strategy and Action Plan for India (HWC-NAP) is to facilitate a common understanding and consensus among key stakeholders, on key approaches and possible solutions for mitigating HWC in India.

The HWC-NAP is a comprehensive, holistic and inclusive way of planning, implementing and monitoring measures for HWC mitigation at the national, state and local-level. It sets out the guiding principles, strategic priorities, main goals, and expected outcomes. It will provide guidance on implementation, monitoring and evaluation for ensuring effective and efficient HWC mitigation in India. The HWC-NAP includes tools and mechanisms to bring together all relevant stakeholders for vertical as well as horizontal coordination to address the complex issue of HWC by defining common goals, assigning responsibilities, establishing a clear timeline, and a set of indicators to measure performance, progress and impact, using a harmonious co-existence approach, in an inclusive manner.

HWC-NAP will facilitate linkages with other national strategies and priorities and provide anchoring points for developing potential synergies and avoiding potential trade-offs with other government objectives and plans. HWC-NAP will serve as a guiding framework for the states and divisions to adopt and formulate their own state-level HWC Mitigation Strategy and Action Plans (HWC-SAPs), and division-level HWC Management Action Plans (HWC-MAPs) incorporating state-specific and regional concerns.

Vision

Humans and wildlife in India are living in harmonious co-existence and are well protected against the negative impacts associated with HWC.

Mission

To mitigate HWC in India, by addressing its drivers and pressures, managing knowledge and information, and facilitating capacity development of key actors, for clear assessment of the situation and reducing the negative impacts of conflict on humans as well as on wildlife, with effective engagement of key stakeholders.

Guiding Principles and Approach:

▶ **Harmonious co-existence:**

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 should 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 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**

It would be important to look at the larger landscape while developing HWC mitigation measures, as some species disperse over very large areas. 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. Therefore, a landscape approach will be taken while formulating solutions for mitigating HWC to ensure sustainable solutions.

▶ **Participatory approach to plan, develop and implement HWC mitigation measures:**

Planning, development and implementation of HWC mitigation plans and measures will involve key sectors and stakeholders at national, state and local levels. The process of stakeholder engagement will follow a systematic approach to ensure that they play an effective role in decision-making. Stakeholders' views will be adequately reflected in the design and implementation of mitigation measures. The HWC mitigation plans and measures will be sensitive to the special needs of vulnerable sections, such as economically weaker sections of the society in rural and urban areas, and the youth. The concerns of women will be specifically addressed.

▶ **HWC-NAP as a capacity development tool**

Focus will be on addressing the capacity development needs of key stakeholders, to facilitate their contributions in implementing HWC-NAP. A detailed implementation framework and robust monitoring plan will ensure that HWC-NAP facilitates capacity development of the managers and system of HWC mitigation in India, through identification of key capacity gaps at each step i.e., addressing the drivers and pressures, status monitoring through data and information, and reduction of impact on humans and wildlife.

▶ **Alignment with other processes and plans:**

All efforts will be made to forge linkages with plans and guidelines of key relevant sectors for enhancing synergies and eliminating trade-offs.

3. Conceptual Framework for Strategic Planning for HWC Mitigation in India

HWC is a multi-faceted challenge, and thus requires an integrated and holistic strategic plan to find ways of mitigation. The conceptual framework, on which the HWC-NAP is built, works under the assumption that systems are never static. In fact, systems are evolutionary, and can continuously change, adapt and respond to inevitable changes and recurring events. This ‘systems thinking’ enables us to find the root causes of a problem, rather than only treat its symptoms, and thus can be helpful to perceive new opportunities. The HWC-NAP uses the concept of Drivers-Pressures-State-Impact-Response (DPSIR) as the basic conceptual framework (Figure 1).

Anthropogenic and ecological drivers of HWC lead to increased pressures on landscape features, with consequences to the state of both, wildlife and humans. These changed situations generate negative impacts on the livelihoods and well-being of humans, as well as on the existence of wildlife species. It is these negative impacts on both, humans and wildlife, which indicate a need for response.

As HWC is a multidimensional problem, these responses need to be holistic, addressing all dimensions of the problem, from following five angles: addressing the drivers, reducing the pressures, assessing the situation, reducing the impact on humans and wildlife, and developing institutional, human and financial capacities for effective implementation.

Furthermore, the responses need to be well-informed and backed by appropriate financial means and operational infrastructure, strong organisational capacity and cooperation partners. Strategically aligned national, state and local policies build the basis for efficient responses.



Harmonious Coexistence is defined as a dynamic but sustainable state in which humans and wildlife adapt to living in shared landscapes, with minimum negative impact of human-wildlife interaction on humans or on their resources and on the wildlife or on their habitats. The mitigation measures designed using this approach maintain a balance between the welfare of animals and humans where both are given equal importance. Overlap in space and resource use is managed in a manner that minimizes conflict.



Figure: 1 HWC-NAP conceptual framework of Drivers-Pressures-State-Impact-Response

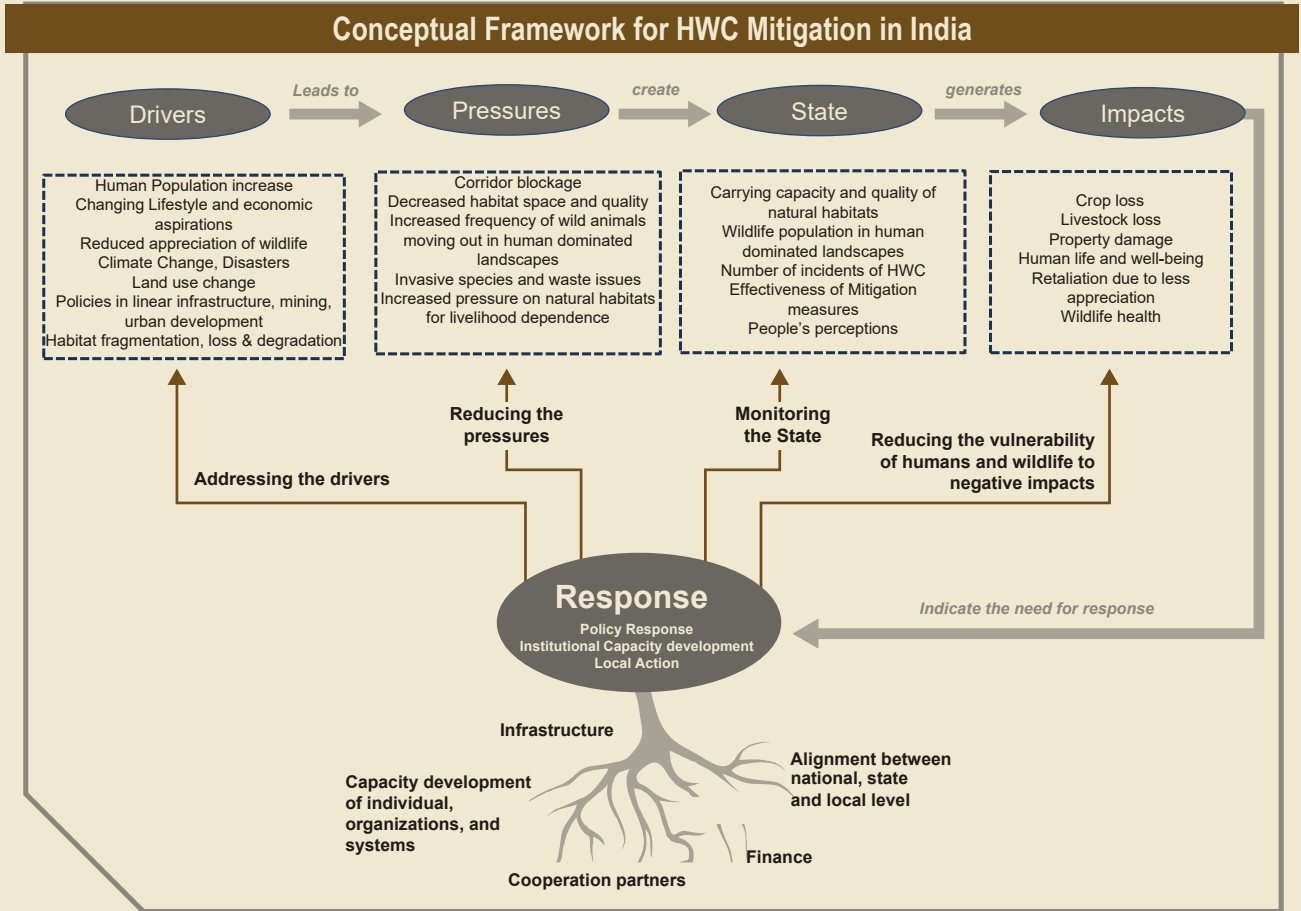




Table: 1 Strategic Framework for HWC Mitigation in India: Priorities and Goals of HWC-NAP

Strategic Priority	Strategic Goal
<p>Strategic Priority A: Addressing the key drivers of HWC in India</p>	<p>Goal 1: HWC mitigation is integrated into overall development planning as well as programmes, plans, policies and legislations of key relevant sectors</p> <p>Goal 2: All development activities are sensitive to potential HWCs</p> <p>Goal 3: Comprehensive and integrated land use planning ensures that wildlife habitats are protected from loss, fragmentation and degradation</p> <p>Goal 4: Humans are enabled in working on their risk perception, improving their tolerance and enabling co-existence with wildlife in the same landscape</p>
<p>Strategic Priority B: Reducing the direct pressures that lead to conflict situation</p>	<p>Goal 5: Critical wildlife corridors, migratory routes and movement paths of key wildlife species-in-conflict, are identified, assessed and secured</p> <p>Goal 6: Livelihood dependence of humans on protected areas, corridors, forests and other natural habitats is reduced</p> <p>Goal 7: Incidences of wild animals entering or co-occurring in human-dominated areas are reduced, by applying, <i>inter alia</i> technological innovations, effective and wildlife-friendly preventive measures</p> <p>Goal 8: Efficient and effective response teams are developed in each forest division and protected areas at the HWC hotspots in India</p> <p>Goal 9: Wildlife habitat within protected areas and forests is restored</p> <p>Goal 10: Sustainable waste management and HWC-safe food storage in and around protected areas, and at HWC hotspots</p>
<p>Strategic Priority C: Making available information and data on HWC to decision-makers and field response teams, for effective mitigation</p>	<p>Goal 11: Wildlife research in the country addresses critical issues related to HWC mitigation</p> <p>Goal 12: Effective, wildlife-friendly and evidence-based HWC mitigation measures are designed, implemented and customized for site-specific needs</p> <p>Goal 13: A national database facilitates assessment and monitoring of HWC situation and formulation of most effective HWC mitigation measures in the country</p> <p>Goal 14: States, agencies and other stakeholders systematically share information, experiences and knowledge with each other, to co-create long-term solutions on HWC mitigation</p>
<p>Strategic Priority D: Reducing the negative impacts of HWC on humans and wildlife</p>	<p>Goal 15: Reduced vulnerability of humans</p> <p>Goal 16: Reduced vulnerability and enhanced occupational health and safety of field teams responsible for HWC mitigation</p> <p>Goal 17: Reduced vulnerability of wild animals through animal welfare measures</p> <p>Goal 18: Most vulnerable sections of the society, such as economically weaker groups, youth and women participate in planning, development and implementation of mitigation measures</p>
<p>Strategic Priority E: Effectively implementing the national, state and local HWC mitigation plans, by strengthening financial and institutional structures</p>	<p>Goal 19: Institutional capacities in forest and other key relevant sectors are strengthened, for effective implementation of HWC mitigation in the country</p> <p>Goal 20: Individual competencies in forest and other key relevant sectors, including frontline staff, <i>mahouts</i> and daily wage workers are strengthened</p> <p>Goal 21: State-level HWC Mitigation Strategy and Action Plans (HWC-SAP) are developed, implemented and regularly updated in all states and Union Territories of India, taking a landscape approach.</p> <p>Goal 22: Division-level HWC Management Action Plans (HWC-MAP) in all states and Union Territories of India are developed, implemented and regularly updated</p> <p>Goal 23: Finance and infrastructure is available for implementing national, state and divisional plans</p> <p>Goal 24: Measures are in place for fostering partnerships between key stakeholders, for sustainability and greater outreach in HWC mitigation efforts</p>



4. Strategic Priority A: Addressing the Key Drivers of HWC in India



Strategic Goal 1:

HWC mitigation is integrated into overall development planning as well as programmes, plans, policies and legislations of key relevant sectors.

Integrating HWC concerns into key relevant sectors such as agricultural, linear infrastructure, rural development, Panchayati Raj, urban development, tourism, power, energy mining, etc., is crucial to ensure that activities of these sectors do not lead to situations that result in HWC.

Use of Strategic Environmental Assessment (SEA) can be explored in identifying specific programmes and activities that might result in increasing the conflict or negatively affect HWC mitigation efforts. SEA can also help in identifying areas where synergies may be possible across sectors and departments. Two areas where more detailed studies and joint working is important, are climate change and disaster management. Operational synergies need to be achieved with the disaster management measures, especially with regard to aligning the HWC mitigation plans and disaster management plans at district/division levels, use of disaster relief funds to compensate for negative impacts of HWC, and joint efforts in capacity development of field response teams of forest, disaster management, civil defence, home guards, and police are required. It is also important to mainstream the topic of HWC mitigation into the ongoing discussions and processes on development and biodiversity conservation, such as SDGs implementation and Post-2020 biodiversity agenda.

Understanding and assessing the underlying drivers of HWC for each landscape is the crucial first step towards prioritizing the sectors and programmes into which HWC mitigation needs to be integrated, at regional and state levels. States will be encouraged to identify, assess and systematically monitor key drivers of HWC. For long-ranging species like elephant and tiger, the national project directorates will conduct landscape and regional level assessment, and monitoring of the drivers and pressures, to be used for policy support.

To achieve the true potential of cross-sectoral and cross-stakeholder cooperation, a systematic approach will be taken, by ensuring that cooperation is institutionalized. Efforts will be made to facilitate dialogue between key sectors and stakeholders, to find common solutions for HWC mitigation, and to technically support key sectors and stakeholders in adopting wildlife-friendly production and processes. A specialised unit at the central level will be established, in the form of a 'HWC Mitigation Cell' anchored in the Wildlife Division of the Ministry of Environment Forest and Climate Change (MoEFCC). A National HWC Mitigation Forum, coordinated by this Cell, will ensure effective and regular coordination and dialogue. States will constitute State-level Coordination Committees (SLCCs), and district-level Coordination Committees (DLCCs) to strengthen inter-agency and cross-sector cooperation

Table 2: Desired results and achievements under Strategic Goal 1

Goal	Desired Results & Achievements	Responsible Institutions
Goal 1: HWC mitigation is integrated into overall development planning as well as programmes, plans, policies and legislation of key relevant sectors.	National HWC Mitigation Cell is established	MoEFCC
	National HWC Mitigation forum and Working Groups are established to ensure effective coordination and dialogue among key relevant agencies	MoEFCC
	State-level Coordination Committee (SLCC) in each state is established, along with district-level Coordination Committees (DLCCs) at HWC hotspots	SFDs
	Consultative processes with key relevant ministries and agencies have facilitated the integration of HWC mitigation concerns into overall and sectoral development plans, policies and programmes	MoEFCC, Relevant Ministries, Departments and agencies of Government of India
	Extent and magnitude of drivers and pressures leading to HWC in key landscapes and states are identified, systematically monitored and addressed	SFDs, Project Elephant, National Tiger Conservation Authority
	Collaborative initiatives, involving key sectors and stakeholders, contribute to results and achievements of other goals and exhibit a positive trend in HWC mitigation in the country	MoEFCC, SFDs

Strategic Goal 2:

All development activities are sensitive to potential HWCs

At the local-level, environmental impact assessments (EIA) of projects will specifically identify the extent and magnitude of HWC that may arise or get escalated as a result of the proposed activities and will build in measures to prevent and/or mitigate the HWC impacts, if any. Even for the projects and activities where EIA is not mandatory, such as activities consisting of large-scale plantations, resource extraction projects, linear infrastructure projects, activities under rural development schemes and urban development plans etc, Article 48A (Protection and improvement of environment and safeguarding of forests and wildlife) and Article 21 (Right to life and personal liberty) of the Indian Constitution would require all projects to assess and address any adverse impacts that the project can precipitate on wildlife and humans, in the form of blocking the movement of wild animals in a larger landscape, causing displacement of wildlife through

disturbances and reducing habitat quality, fragmenting the existing habitat and/or inhibit the movement of wild animals and leading them to venture into new areas nearby, creating newer conflict situations etc.

The proposal and appraisal reports of all development projects, whether by infrastructure development agencies or other development or environment programmes and projects, will need to have a dedicated section addressing the possibility of origin/escalation of HWC due to the project. A compilation of all such experiences and good practices can be incorporated into a HWC database, and made available to implementers.

Support from the central government can be sought to safeguard such critical HWC hotspots¹, under Section 3 of the Environment (Protection) Act 1986.

Table 3: Desired results and achievements under Strategic Goal 2

Goal	Desired Results & Achievements	Responsible Institutions
Goal 2: All development activities are sensitive to potential human wildlife conflicts	Impact pathways and mechanisms of change, with regard to the impact of projects and other development activities on HWC, are documented and recommendations have been formulated	MoEFCC, SFDs
	A compilation of experiences and good practice on the use of EIA for mitigating HWC is available	MoEFCC
	All proposals and appraisal reports by all development projects, whether by infrastructure development agencies or other development or environment programmes and projects include a section on HWC mitigation	MoEFCC

¹ “HWC Hotspots” are areas with actual or predicted repeated occurrence of HWC incidents resulting in crop-loss, livestock death, human death and injury, wildlife death and injury over temporal and spatial scales. It can be static (repeated in the same place or time) or dynamic (shift in space and time over years). In addition to count statistics, the magnitude of the incidents is subjected to interpolation or extrapolation techniques to define the hotspots in space and time.

Strategic Goal 3:

Comprehensive and integrated land use planning ensures that wildlife habitats are protected from loss, fragmentation and degradation.

A key factor driving HWC is human population growth and the resulting increase in natural resources requirements of humans. This gradually transforms natural habitats into human settlements and agricultural lands. Unsustainable use of natural resources and lack of integrated land-use planning may result in degradation of habitat and subsequently reducing its carrying capacity. Furthermore, habitat fragmentation results in restriction of wildlife movement, often leading to a situation of deflected animal movement to new territories, thereby creating new conflicts.

Land use/land cover (LULC) change affects the provision of ecosystem services for humans, and habitat for wildlife. Hence, it is crucial to monitor LULC around all forested landscapes and particularly around HWC hotspots.

Potential impacts of climate change on habitats and movement of key species-in-conflict, would need to be anticipated, assessed, and integrated into carrying capacity assessments that form the basis for all management interventions.

Table 4: Desired results and achievements under Strategic Goal 3

Goal	Desired Results & Achievements	Responsible Institutions
Goal 3: Comprehensive and integrated land use planning ensures that wildlife habitats are protected from loss, fragmentation and degradation	Land-use land-cover change analysis, around HWC hotspot conducted in cooperation with key sectors and stakeholders, with regard to its impact on HWC, is available in each state	SFDs, Ministry of Housing and Urban Affairs, Ministry of Rural Development
	Carrying-capacity assessments integrate climate change impact models	SFDs

Strategic Goal 4:

Humans are enabled in working on their risk perception, improving their tolerance and enabling co-existence with wildlife in the same landscape.

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. The enhanced awareness among community members will also facilitate their engagement in community-level emergency response and other mitigation measures. Community can also support in information management on animal movement, and support during emergency situations, through helplines.

Information and knowledge about the ecosystem services provided by wildlife, animal behaviour, and the impact wildlife and humans have on each other, needs to be integrated into school and university curricula.

Simultaneously, a systematic plan will be put in place to further strengthen the capacities of the teachers

for effectively implementing courses and activities on HWC mitigation, leading to desired learning outcomes. National Green Corps (NGC) can play an important role in institutionalizing this knowledge.

Media is a key stakeholder that can play a significant role in taking the desired message on HWC mitigation to the public. Even though over the last decade, there has been a shift to issue-oriented media coverage, the media largely covers HWC only when an incident occurs. Constructive dialogue between wildlife managers and media professionals, agreement on guidelines, and identification of anchoring points for engaging media as partners in HWC mitigation, will be a priority.

Civil society institutions working with the local community will be engaged as partners, to facilitate achievement of goals set by this plan. A 'Working Group on HWC Mitigation Communication' will be established for implementing the communication strategy at the national-level.

Table 5: Desired results and achievements under Strategic Goal 4

Goal	Desired Results & Achievements	Responsible Institutions
Goal 4: Humans are enabled in working on their risk perception, improving their tolerance and enabling co-existence with wildlife in the same landscape	A communication strategy at national and states level is operationalized, to facilitate dissemination of HWC relevant information to key stakeholders, using innovative and effective communication tools	MoEFCC, SFDs, NGOs
	Integrating awareness and understanding of wildlife behaviour and ecosystem services that wildlife provides, into national educational curricula	MoEFCC, National Working Group on HWC Mitigation Communication
	Well-functioning helplines in HWC hotspots, to provide and receive information on animal movement, and support during emergency situations	SFDs
	Systematic engagement between media and wildlife managers, to bring media on board as a strategic partner in raising awareness on behaviour of conflict-prone wildlife species, and other HWC mitigation approaches	MoEFCC, National Working Group on HWC Mitigation Communication



A photograph of a rural landscape. In the foreground, there is a dense thicket of green bushes and tall grasses. A wooden fence runs across the middle ground, separating a grassy area from a wooded area. The background is filled with tall, thin trees under a bright blue sky with scattered white clouds. The overall scene is vibrant and natural.

5. Strategic Priority B: **Reducing the direct pressures that lead to conflict situation**

Strategic Goal 5:

Critical wildlife corridors, migratory routes and movement paths of key wildlife species-in-conflict are identified, assessed and secured.

Movement across their habitat to meet their ecological and reproductive needs is an integral part of animals' survival strategy. When natural movement is disrupted by fragmentation and breaking of corridors, animals migrate beyond natural landscapes into human-use areas, which results in HWC. Maintaining a well-connected landscape is critical for long-term wildlife conservation and HWC mitigation in India. Securing wildlife corridors, migratory routes and movement paths of wildlife species, particularly those in conflict, is critical and will be one of the priorities.

Corridors will need to be identified for key long-ranging species, in addition to recognized ones, assessed and mapped on a GIS platform to understand their ecological role, and their specific role and relevance to HWC mitigation. Further, threats to the long-term viability of these corridors will be identified. Accordingly, management plans, including a system and mechanism for regular monitoring and reporting of corridors, are established for these corridors, and will be developed and integrated into HWC-SAP, and other similar documents of the states, taking a landscape approach.

In areas where regular movement of large mammals through non-forest areas leads to conflict, instruments such as Memoranda of Understanding (MoU) with the concerned landowners/communities, purchase of land by forest department in critical bottleneck areas, land swaps, establishment of Community and Conservation Reserves, heritage sites etc., will be explored to secure wildlife passage. Additional appropriate legal provisions can also be explored in this regards.

Securing corridors becomes critical in light of the predicted impacts that climate change may have on natural habitats. The resulting impediments to animal movements through the habitat matrix may lead to enhancement of HWCs. In this context, the guidelines issued by WII- MoEFCC (WII, 2016)² provide for possible solutions, including creation of underpasses, overpasses, etc., that can be adopted by the infrastructure development agencies. This will apply when creation of such structures in the habitats becomes inevitable, to prevent fragmentation. Undertaking all infrastructure in the shortest possible time, is a critical requirement for projects in forest habitats, and must be monitored and ensured at highest level.

Table 6: Desired results and achievements under Strategic Goal 5

Goal	Desired Results & Achievements	Responsible Institutions
Goal 5: Critical wildlife corridors, migratory routes, and movement paths of key wildlife species-in-conflict are identified, assessed and secured	Critical corridors for key long-ranging wildlife species are identified, assessed, prioritised and mapped on a GIS-based platform linked to the national database	MoEFCC, SFDs
	A system and mechanism for regular monitoring and reporting of corridors is established	SFDs
	Use of innovative instruments to secure corridors are discussed and operationalized	SFDs
	Use of eco-friendly measures for mitigation of linear infrastructure projects to be implemented.	SFDS

2 https://moef.gov.in/wp-content/uploads/2019/07/eco_friendly_measures_mitigate_impacts_linear_infra_wildlife_compressed.pdf

Strategic Goal 6:

Livelihood dependence of humans on protected areas, corridors, forests and other natural habitats is reduced.

While sustainable use of natural resources generally does not pose a significant ecological problem, over-extraction due to rising demands of a growing human population and insufficient regulation mechanisms causes degradation of such wildlife habitats. A degraded and disturbed wildlife habitat, in turn, decreases the carrying capacity for wildlife species, which may lead to wildlife searching for food outside of their natural habitat, resulting in HWC, in some instances. Reducing the anthropogenic pressure on natural habitats, particularly in HWC hotspots, is important for the safety of humans and the welfare of wildlife. However, a fair balance needs to be provided, particularly for groups and individuals lacking alternative resources.

The economic losses sustained by communities due to HWC, need to be compensated, not only by the *ex gratia* received from the government, but also by increased livelihood opportunities, through the poverty alleviation schemes and alternate income generation initiatives. HWC-safe livelihoods³, developed through education and skill improvement, will open better employment opportunities. Furthermore, value addition to existing produce (farm or forest-based) will improve incomes, without increasing extraction. The introduction of high yield hybrid cattle is expected to minimize or eliminate (where stall-fed) grazing pressure in native wildlife habitats while ensuring higher economic returns. The Animal Husbandry department would need to formulate and implement special plans for improved stall-fed farm animal stock and practices, especially in the HWC hotspots.

Alternate fuel sources such as Liquefied Petroleum Gas (LPG) or kerosene, or fuel-efficient stoves, will reduce or minimize fuelwood extraction. At the same time, these also address reducing exposure of rural women and young children to kitchen smoke, which is one of the biggest causes of poor health and mortality in rural women.

The Joint Forest Management Programme (JFM) in India, initiated in 1990, has influenced the agrarian economy towards sustainable management of resources. The community institutions created in fringe-forest villages such as Village Forest Committees (VFCs), Eco Development Committees (EDCs) and watershed committees will be engaged in efforts to mitigate HWC.

The forest-dweller groups and local communities participating in JFM, having customary rights for use of natural resources as an integral part of their cultural identity, need special attention and protection. Community-based institutions, government institutions, private sector etc involved in community development (Education, Tribal, Rural, Agriculture and Animal Husbandry, MGNREGA, Health, Small-Scale and Cottage Industries, Micro-finance agencies, etc.) will be engaged cohesively by the forest departments, to bring about synergies that benefit socio-economic development of forest-dependent communities, in a manner that minimizes their dependence of forests, by simultaneously providing both better livelihood and resource alternatives.

Table 7: Desired results and achievements under Strategic Goal 6

Goal	Desired Results & Achievements	Responsible Institutions
Goal 6: Livelihood dependence of humans on protected areas, corridors, forests and other natural habitats is reduced	Rural forest-dependent communities are facilitated through inter-departmental coordination to practice HWC-safe livelihood options, access alternative fuel sources, and use improved animal husbandry practices	SFDs, State Rural Development Department and Panchayati Raj Institutions (PRIs), NGOs, Department of Animal Husbandry and Dairying
	Cooperation between forest and rural development training institutions facilitates capacity development of women Self-Help-Groups and youth in the villages around HWC hotspots, to enable these forest-dependent populations to find alternate HWC-safe options.	SFDs, SIRDs, NGOs
	Convergence with MGNREGA and other similar schemes is facilitated for establishing and maintaining community-based HWC mitigation measures.	SFDs, Department of Rural Development, PRIs

3 "HWC-safe livelihoods" are livelihoods that are not negatively impacted by presence of wild animals in the landscape.

Strategic Goal 7:

Incidences of wild animals entering or co-occurring in human-dominated areas are reduced, by applying, *inter alia* technological innovations, effective and wildlife-friendly preventive measures.

Species-specific and issue-specific guidelines and Implementer's Toolkits, will be developed and field tested in a participatory manner, and all HWC mitigation measures will be implemented in compliance with these guidelines.

A key focus will be set on preventing HWC incidents by the use of early warning and rapid response system, coupled with barriers and deterrents, where conflict is more severe.

In general, intervention by a response team is triggered by an incidence of either sighting of a wild animal in human use area, or injury/ death to humans or livestock, or crop damage. While this approach has been effective in managing the situation at an operational level, the negative impacts due to HWC incidences result in economic losses, and cause a change in people's perception, eventually leading to negative perception and retaliation towards wildlife. Therefore, the early detection of risk is the most crucial aspect of any HWC mitigation strategy.

A paradigm shift is needed to invest and innovate in prevention measures and efficient emergency response. The first step in this direction is to strengthen the capacities of the field teams, to enable them to receive early information on the accidental movement of animals near human-use areas, identify at-risk locations, work towards establishing prevention measures, as well as informing potentially vulnerable humans to take appropriate precautionary measures.

Such an 'Early Warning and Rapid response System' will be established in each forest division and protected area of the country, at HWC hotspots. A strategy for stakeholder engagement, supported by use of technology, will be used to create early warning systems. For this, satellite telemetry using radio/satellite collars, drones, seismic waves, infrared technology, temperature and movement sensors and other systems for tracking movement of wildlife in and around hotspots need to be systematically explored for their varied applications. Their effectiveness as early warning instruments need to be enhanced, along with a system of robust response teams.

Another key intervention is to enable local communities and selected individuals to monitor and report the movement of animals, to ensure that the first response

is initiated at the first subtle sign of an impending conflict situation, and negative impacts are prevented. So, specific warning alerts to potentially vulnerable people through bulk messaging or through FM Radio/ community radio/ local TV channels, etc will be broadcasted. This may also provide help to enforcement agencies in combating wildlife crime, in the form of community surveillance. Engagement of existing institutions such as Civil Defence and Home Guards, in a coordinated manner through the DLCCs, may be explored by the divisions at HWC hotspots for enhanced effectiveness of the response measures, especially for crowd management and handling medical emergencies.

Where barriers are required for regulating the movement of wildlife, the landscape needs to be well studied to understand movement patterns of wild animals and connectivity among the fragmented habitat patches. This will be done to ensure that movement patterns are not compromised by the use of barriers.

Such barriers need not be based on administrative boundaries but rather on landscape features. They need to integrate the knowledge of seasonal and annual movement and ranging patterns of large wildlife species, and also take into consideration the possible adaptations to these by wildlife over time.

A systematic plan and sustainable institutional arrangement, engaging local communities, will be encouraged at landscape-level, to take ownership and to oversee the creation and maintenance of barriers.

Details on the use and design of barriers and deterrents for the various wildlife species-in-conflict will be elaborated in the Implementer's Toolkits. Most of these measures are species-specific, and need to be adapted and adjusted to consider animal behaviour, response of wildlife to different measures used, as well as the ecology, geography and social context of the region. They require careful planning, systematic execution and sustained maintenance. In the absence of these considerations, mitigation measures may have little or no positive impact.

In all situations involving obligatory resource utilisation by wildlife within human-use areas, the primary intervention will focus on a clear assessment of population dynamics of key wildlife species, and habitat

restoration to optimize that habitat to support higher populations of the wild animals. In case of specific situations where habitat restoration cannot solve the problem, population management of wildlife species-in-conflict, in line with the carrying capacity assessments of the associated natural habitat in the landscape, can be considered. This will be done after wider deliberations, as long-term implications of population management are still unclear.

In situations that involve wildlife continuing to live inside human-use areas, it is important to determine the long-term feasibility of conserving the species in such areas, taking into account existing and future changes in resource availability, population growth and possible changes in distribution, behavioural changes, and the options available for effective conflict mitigation. In situations where conservation is possible in such areas, the analysis will identify conflict mitigation measures that protect both the human and wildlife populations. Where conflict mitigation is not feasible, options for removing the animal from that location will be explored, to ensure that such incidents do not exacerbate conflict situation at the location.

In the case of dispersals through human-use areas for ecological or reproductive reasons, the cause for the dispersal needs to be studied. Where animals are dispersing due to habitat inadequacies or local overabundance, these factors would be addressed to stop further dispersal. In situations where the dispersed population has settled into a new habitat, the long-term options and implications for conservation and conflict management will be assessed. Based on this analysis, decisions will be made to either conserve them locally, move them to a better site, or back to the original range.

Assessing the status of past dispersals in terms of conservation gains (present status of dispersed populations) and conflict (loss of human life and crop/property damage; costs of conflict management, and current conflict situation), would be done to get a better understanding of how to deal with similar situations in the future. Where dispersal is due to reproductive reasons (e.g., inbreeding avoidance), close monitoring and early warning can minimize conflict. Options such as aided dispersal (i.e., capture and translocation to a better habitat) can also be attempted in such cases.

Table 8: Desired results and achievements under Strategic Goal 7

Goal	Desired Results & Achievements	Responsible Institutions
Goal 7: Incidences of wild animals entering or co-occurring in human-dominated areas are reduced, by applying, <i>inter alia</i> technological innovations, effective and wildlife-friendly preventive measures	Each HWC hotspot has obtained results of population estimation and dynamics of key species involved in HWC at landscape-level, and monitors the respective populations regularly	SFDs, WII
	Early Warning Systems are established, regularly monitored and updated in each forest division at HWC hotspots	SFDs
	Species-specific and issue-specific guidelines and Implementer's Toolkits, are developed and field tested in a participatory manner, and all HWC mitigation measures are implemented in compliance with these guidelines	MoEFCC, SFDs

Strategic Goal 8:

Efficient and effective response teams are developed in each forest division and protected areas at the HWC hotspots in India.

Since it is often inevitable that wildlife and humans use the same space, an efficient response mechanism for timely action, to prevent and reduce negative impacts of conflict situations, will be most important foundation of HWC mitigation strategy in India.

The types of response teams, their function, roles, composition, and required competencies, will be standardized across all states in the country. This will facilitate effective policy support, knowledge management and resource sharing across divisions and states, and enable overall assessment and monitoring. A tiered system of response teams⁴ will be established, with required equipment and training support, in each division, viz., Rapid Response Team at the division-level (Division RRT), Rapid Response Teams at the range-level in ranges with high conflict (Range RRTs) and community-level Primary Response Teams in villages/ village clusters / wards/ ward clusters / municipalities with high HWC conflict (Community PRTs).

The information management across teams will be coordinated via a HWC Mitigation Hub/ HWC Control Room. As skill and specialized knowledge are necessary for the task, a permanent pool of trained personnel will be maintained in such RRTs. Options will be explored to engage specialised agencies and personnel such as civil defence, home guards, disaster management teams to support the response teams. For better coordination at local-level, cooperation of local body functionaries, such as gram panchayats, can also be sought, through their appropriate legal empowerment, as and when feasible.

Operating Procedures (OPs) on chain of command initiation and clear decision-making tools shall

be developed and agreed with key agencies and departments, to facilitate smooth and efficient communication, within the state forest department (SFD), and with other key actors.

The SLCC, landscape-level HWC Mitigation multi-stakeholder forum and DLCCs will facilitate the involvement and contribution of related departments within the district and local-level, for establishment of RRTs and PRTs. Synergies with the existing systems of field response teams such as disaster response teams, police, civil defence, home guards will be explored. Apart from this, SFDs could also explore the possibility of getting other volunteers engaged in HWC mitigation measures, and get them insured for safety and safeguard.

A dedicated fund shall be created in each state for providing salaries, risk allowances, health and accident insurance for the non-SFD personnel engaged in all the mitigation work. The state/UT may also consider providing 'contingency funds' to Community PRTs for dealing with contingent expenses, in cases of emergency.

A division-level strategy shall be elaborated in the HWC Management Action Plan (HWC-MAP) of respective divisions for the constitution of response teams, their capacity development, operating procedures, work ethics, occupational health and safety, etc.

Supplementary Framework for Establishment and Capacity Development of HWC Mitigation Response Teams provides details on types of response teams, their functions, roles, composition, required competencies and curriculum, and required equipment.

4 Rapid Response Teams (RRTs) are meant to provide specialized response to conflict situations. The RRT at the division-level will have the capacity and equipment to deal especially with use of GIS-based database, use and maintenance of specialised equipment for patrolling and capture of wildlife and have the necessary skills in the team to deal with all HWC situations. Each team will also have a trained veterinary doctor attached to it. These RRTs will deal with the larger issues at the division-level. The RRT at the forest range-level will have personnel trained in different task related to HWC, and will address the regular HWC situations that cannot be handled by the other field staff of the SFD or by community-level PRTs. A key role of range RRT is to closely coordinate with the Community PRTs.

Primary Response Teams (PRTs) are community-driven teams, anchored ideally at panchayats, to provide long-term support in design and maintenance of mitigation measures, awareness measures to address people's perceptions, facilitating effective coordination between forest department, other departments and agencies and local communities, and support the RRTs to manage people in HWC-related emergency situations.

Table 9: Desired results and achievements under Strategic Goal 8

Goal	Desired Results & Achievements	Responsible Institutions
Goal 8: Efficient and effective response teams are developed in each forest division and protected area at the HWC hotspots in India.	Forest divisions establish, by notification, a three-tiered system (division, range and village/ward-level) of response teams with dedicated staff and funds	SFDs
	Competencies-based training is provided to all three levels of response teams, by the state training Institutions, and other accredited institutions in the state, using participatory and hands-on training methods, in a systematic and regular fashion, together with key relevant departments	SFDs
	The SLCC, landscape-level HWC Mitigation multi-stakeholder forum and DLCCs facilitate the involvement and contribution of related departments, in the district and local-level for establishment of RRTs and Community PRTs	SFDs
	Number of incidents of human death, injury and crop/property damage are reduced due to enhanced efficiency and effectiveness of response teams	SFDs

Strategic Goal 9: **Wildlife habitat within protected areas and forests is restored**

To understand the dynamics of the ecosystems, a systematic ecosystem analysis for all HWC hotspots would need to be carried out forming the basis for restoration planning. Of specific relevance would be to map the degradation levels and water availability over time in HWC hotspots. Research institutions can be roped in by the forest departments, where possible, to apply population dynamics models for changing ecosystems, and development of a decision system on these findings for habitat restoration activities within PAs around HWC hotspots.

In cases where vegetation and water augmentation will be used as an instrument for ecosystem restoration, regular monitoring of ecological changes would be done to understand the long-term implications of such measures. The management recommendation ensuing from such analysis would be incorporated into existing Management Plans for PAs, Working Plans for territorial forest divisions, and HWC-MAPs to ensure systematic implementation.

Reduction in native food plants due to an increase in cover of invasive non-palatable plant species has been stated as one of the reasons for wild herbivores to enter human-dominated landscapes, in search of food. Management of prioritized invasive species by 2020 is a national target^{5 6}, Invasive species management will be taken up as an important facet of the HWC mitigation strategy and would be allocated the required attention and resources, for assessment and action for eradication thereof.

Impact assessment and invasive species risk assessment models would be developed to support the implementation process and also to prioritise the sites for invasive species management.

Regular monitoring of invasive species would be done, preferably with the support and engagement of local communities and other stakeholders, including Community PRTs.

Table 10: Desired results and achievements under Strategic Goal 9

Goal	Desired Results & Achievements	Responsible Institutions
Goal 9: Wildlife habitat within protected areas and forests is restored	Protected Area Management Plans and Territorial Working Plans are adapted to integrate scientific assessment and analysis of roles and impact of different habitat elements on population sizes, structures, fertility rates, etc., of key species-in-conflict	MoEFCC, SFDs
	Ecological restoration measures are identified and implemented in each protected area, and other wildlife habitats including prioritized corridors	SFDs
	Ecological integrity in and around protected areas is restored by reducing the influence of invasive species	SFDs

5 National Biodiversity Action Plan. <https://www.cbd.int/doc/world/in/in-nbsap-v3-en.pdf>

6 Post 2020- Global Biodiversity Framework by the Convention on Biological Diversity

Strategic Goal 10:

Sustainable waste management and HWC-safe food storage in and around protected areas, and at HWC hotspots.

Food waste in villages, towns and cities, such as unwanted and rotting fruits and vegetables, kitchen waste and grain crops, as well as poorly secured food stores often lure some species of wild animals. Wild herbivores may occasionally use this food waste, and soon might also become completely reliant on this food source, depending on their health conditions, age and availability of food in their natural habitat. Rhesus macaque, elephant, bear and other generalist herbivores can become habitual visitors to food waste dumps in certain locations, while leopards are widely known to visit dumpsites, to prey on feral pigs, stray dogs and rodents feeding around food waste dumps.

This situation not only increases conflict cases, but by increased interaction between wild and domestic animals, facilitates the spread of zoonotic disease and pathogens between wild animals, livestock, other domestic animals, and sometimes even to humans.

For this reason, waste management practices in areas close to wildlife habitats will be addressed on priority, in close coordination with district administration, urban development department, municipalities, Panchayats,

local universities and institutions and other key actors.

In HWC hotspots, measures towards safe storage of food – especially in villages – will be given a stronger focus.

For ensuring sustainable waste management to mitigate HWC, the role of local governments in rural areas, and hospitality enterprises in urban areas, will be critical for according priority to intervention in this aspect.

Urban and rural development departments, municipalities and Panchayati Raj institutions will be engaged, via multi-stakeholder fora at the national-level, SLCC, landscape-level HWC Mitigation forum and DLCC at the state and local levels, respectively. This will ensure sensitisation and technical support in adopting waste management practices as a top priority in HWC hotspots.

States are encouraged to earmark resources for this purpose, and monitor the efficacy of the efforts, as well as encourage the urban/ rural local bodies to integrate HWC concerns into their proposals for financial assistance.

Table 11: Desired results and achievements under Strategic Goal 10

Goal	Desired Results & Achievements	Responsible Institutions
Goal 10: Sustainable waste management and HWC-safe food storage in and around protected areas, and at HWC hotspots	Cooperation between SFDs and universities and institutions facilitate long-term monitoring of the behaviour of key wildlife species, in relation to food storage and waste in urban and rural areas, and identification of appropriate mechanisms for ensuring reduced pressure due to waste dumps	MoEFCC, SFDs, Universities, research institutions and other educational institutions
	Waste management and HWC-safe food storage plans, implemented by municipalities/ panchayats, in cooperation with local communities, result in reduced incidents of HWC	SFDs, State Rural Development Department and PRIs, State Urban Development Department

6. Strategic Priority C:

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



Strategic Goal 11:

Wildlife research in the country addresses critical issues related to HWC mitigation.

To ensure effectiveness and efficiency, HWC mitigation, measures need to be based on and customised for the situation on the ground. This includes patterns of interactions, spread and frequency of conflict incidences, interventions and their outcomes, behaviour of the wild animal concerned, profile of the communities affected, and the factors related to their socio-economic circumstances. All interventions and measures would need information and data on these aspects, not only from the forests under the management of the forest department and key species involved in HWC, but from all other wildlife habitats and all HWC hotspots.

Therefore, appropriate information on population trends, habitats and corridors of prominent wildlife species, including preferred foraging and breeding areas, would need to be collected and maintained in all forest divisions. Inclusion of such information in the forest Working Plans, protected area Management Plans would be necessary. Apart from this, each division will develop its HWC-MAP in a participatory manner, to ensure effective inclusion of key departments and agencies in the region in HWC mitigation efforts

To ensure that HWC mitigation-related information is being collected from the field, and the results are used for developing innovative HWC mitigation measures, management-oriented research and regular monitoring will be promoted, at all HWC hotspots.

Special emphasis will be given to department-based research and knowledge management on HWC mitigation. To ensure sustainability of such efforts, cooperation and partnerships will be encouraged between the state forest departments, other departments and agencies, universities, research institutions and training institutions.

Inter- and transdisciplinary research to understand the drivers of HWC, and to monitor their trends in India, are priority. Such studies shall focus on assisting adaptive management strategies for HWC mitigation, and will, among others, integrate wildlife biology and ecology including behaviour, population dynamics and movement of key wildlife species-in-conflict, and their behaviour in human-dominated landscapes; human ecology and social sciences, including people's perceptions and attitudes on HWC and factors influencing such perceptions and attitude; socio-economic research, including long-term social and economic impacts of compensation, *ex gratia* and other mitigation measures; research on immuno-contraception of selected species-in-conflict etc.

The HWC Mitigation Cell at MoEFCC, among other roles, will facilitate in prioritizing key research questions that are critical for mitigating HWC, as well as for long-term advancement of our conceptual understanding of the issue. The prioritized research areas will also be relevant from the viewpoint of provision of research funds from the MoEFCC, other Ministries and agencies. An institutional mechanism to facilitate inter-institutional collaborative research and consortia-based research will be encouraged, and a mechanism will be formulated to appraise, monitor and review such projects, to ensure that results of relevant research are shared across states, and their field implementation is expedited.

India has progressed well in the use of new technology for wildlife research in India, answering several HWC-related questions. However, the information and data coming from such work is scattered, and not consolidated at one place. A mechanism will be set up to consolidate all such information and data under the aegis of the HWC Mitigation Cell, linked to the national database.

Table 12: Desired results and achievements under Strategic Goal 11

Goal	Desired Results & Achievements	Responsible Institutions
Goal 11: Wildlife research in the country addresses critical issues related to HWC mitigation	Key research topics on HWC mitigation are prioritized at national-level and form the basis for research grants provided by relevant ministries and agencies	MoEFCC
	A mechanism is developed in each state to facilitate researchers in conducting inter- and transdisciplinary research on priority management questions on HWC mitigation.	SFDs
	In-house research facilities at the state forest departments are strengthened to undertake basic research and monitoring on HWC, in cooperation with local universities and institutions, to facilitate capacity development of the response teams, as well as to ensure consistency and continuity in data input to the national database	SFDs

Strategic Goal 12:

Effective, wildlife-friendly and evidence-based HWC mitigation measures are designed, implemented and customized for site-specific needs.

At present, HWC mitigation measures are being implemented by various agencies, departments, and individuals, with varying degree of success. Experience shows that there is no single or specific measure that can provide solutions to HWC situation. Hence, optimization of a single or mix of multiple measures is generally recommended. In this context, highly important is a critical assessment of the effectiveness of mitigation measures, and their relative impact on wildlife, to ascertain the applicability of mitigation measures to specific scenarios. Effectiveness of mitigation measures is a result of multiple factors, which would be documented to ascertain the reasons why a specific mitigation measure was successful, or why it failed. A systematic approach will be taken, by collecting all relevant data on such factors, to establish the optimum conditions when a mitigation measure is likely to be most effective. Such assessment shall be based on a rigorous scientific design, which is replicable and comparable in different landscapes, and HWC scenarios.

Whether or not a mitigation measure is harmful for wildlife, will be one of the key criterion while selecting mitigation measures. 'Harmful to wildlife' here implies harm to the population or species rather than to the individual in conflict. To establish the contribution of wildlife to overall development via ecosystem services, and ensure that the mitigation measures are economically viable, studies on economics of HWC mitigation, and studies to develop a methodology for calculating the return on investment is encouraged; to be developed and used during assessment of the respective mitigation measures. Level of acceptance and appreciation of the measure by different stakeholders, particularly the local community, will be an important criterion of success. A criteria for assessing the effectiveness and wildlife-friendliness of mitigation measures will be developed.

Table 13: Desired results and achievements under Strategic Goal 12

Goal	Desired Results & Achievements	Responsible Institutions
Goal 12: Effective, wildlife-friendly and evidence-based HWC mitigation measures are designed, implemented and customized for site-specific needs	A nationally standardized assessment framework is available to assess the effectiveness and wildlife-friendliness of HWC mitigation measures	MoEFCC
	All mitigation measures being planned and implemented, are assessed for their effectiveness and wildlife-friendliness by the SFDs and other agencies, in consultation with key stakeholders, on an annual basis, using the nationally standardized assessment framework	SFDs, Civil Society institutions, Private sector, and individual experts
	Feedback from each division on the design and use of mitigation measures is systematically collected and reviewed at the landscape-level, in the landscape-level HWC Mitigation forum, and consolidated at national-level via a national knowledge platform, to further optimize mitigation measures.	SFDs, Civil Society institutions, Private sector, and individual experts

Strategic Goal 13:

A national database facilitates assessment and monitoring of HWC situation and formulation of most effective HWC mitigation measures in the country.

There is a need for more holistic data that facilitates government and other stakeholders in better understanding the nature and scale of the conflict, developing mitigation measures, and monitoring the success of the mitigation measures. Currently, collected data is only suitable for generating coarse 'heat maps' of conflict (based on the number of compensation claims paid, and number of human deaths and injuries etc) for a few species at the state-level. However, at the national-level, uniform data on the number of conflict cases for most species is not available.

As a first step, data collection parameters and methods will be standardized across states, so that results can be compared across states and landscapes, over time.

A National HWC Mitigation Database would be established so that all states and key agencies can contribute to and have access to the database. The primary aim of this database will be to facilitate information management and strengthen our understanding of the drivers of HWC and effectiveness of the mitigation measures. This is to support evidence-based decision-making for HWC mitigation, including key management issues such as landscape-level planning, by understanding the long-term spatial trends in distribution and status of wildlife species-in-conflict, animal movement, retaliatory killings, crop damage etc., or larger landscape-level impact of local mitigation measures. This database will be hosted on a web-based platform supporting visualization of HWC hotspots and other information, with a differential access system.

A Working Group on 'National HWC Mitigation Database' will be responsible for managing the national HWC database. This group will ensure that data is being collected, stored, analysed and utilized for its intended purpose. Training curricula will be developed for officers and field response teams from key relevant departments and agencies to ensure that data input is efficient. All states will be encouraged to make good use of the national database, to access and analyse information on HWC and mitigation measures, and use this information to support evidence-based HWC management decisions. The data gaps identified by the field teams will be consolidated and shared by the representatives from states, leading to establishment of research priorities for national and state-level wildlife research institutions.

Creation and management of such a database is the first step. Further efforts are needed to ensure that there are avenues and opportunities in place to share qualitative information, as well as explicit and implicit knowledge on managing HWC, among key stakeholders. Mechanisms for data inputs, including real-time inputs where feasible, would be created so that the regularly incoming data improve the quality of information generated from the database. Geographical Information System (GIS) interface will be its integral part, so that dynamics of hotspots and trends of vulnerability are visible and monitored regularly.

Table 14: Desired results and achievements under Strategic Goal 13

Goal	Desired Results & Achievements	Responsible Institutions
Goal 13: A national database facilitates assessment and monitoring of HWC situation and formulation of the most effective HWC mitigation measures in the country	A national HWC database – using a holistic approach – is functional, on a GIS-supported platform, providing a common template to all actors and states, for collecting HWC-related data in the country	MoEFCC
	States have facilitated capacity development measures to ensure that they provide regular and complete information on parameters to the national HWC database, on a periodic basis	MoEFCC, SFDs

Strategic Goal 14:

States, agencies and other stakeholders systematically share 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 tools and enablers to ensure success. Policymakers, multi-disciplinary experts and practitioners will be facilitated to continuously exchange information on trends, challenges and good practices, with the aim to learn from each other, and to find innovative solutions together.

This will be done through creation of shared spaces for the exchange of ideas and information via cross-sector dialogue, joint trainings, discussion fora, joint publications and other instruments and measures. A web-based national knowledge platform will be created, to provide the anchoring for all discussions and dialogues. This will not only facilitate immediate solutions on critical issues on HWC mitigation, but


will also formulate recommendations for the revision processes of the HWC-NAP, guidelines and HWC-SAPs.

Documentation and learning from implementation of this HWC-NAP and guidelines will also provide inputs to the overall body of knowledge. States are encouraged to document their feedback on the implementation of guidelines and include this feedback in the appropriate reports, to ensure that this feedback is utilised for further revision and updating of the guidelines. A significant section of knowledge on HWC mitigation would also come from the traditional and local knowledge available in different communities in India. Some of these may have the potential to be adopted as such, or combined with new knowledge and technologies. Inclusion of such knowledge into mitigation measures and plans will be highly encouraged.

Table 15: Desired results and achievements under Strategic Goal 14

Goal	Desired Results & Achievements	Responsible Institutions
Goal 14: States, agencies and other stakeholders systematically share information, experiences and knowledge with each other to co-create long-term solutions on HWC mitigation	A web-based national knowledge platform on HWC mitigation is functional and being used by key relevant stakeholders	MoEFCC
	The knowledge platform facilitates discussion and dialogue on critical issues on HWC mitigation, and formulating recommendations for the revision processes of the HWC-NAP and HWC-SAPs	MoEFCC
	Traditional and local knowledge is being used to innovate and further contextualise HWC mitigation measures	MoEFCC



A woman in a yellow top and blue pants is walking along a path next to a rice paddy field. The field is filled with young rice plants, and the water reflects the sky. The background shows a line of trees and a cloudy sky. The text is overlaid on the right side of the image.

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

STRATEGIC GOAL 15: Reduced vulnerability of humans

Local communities, particularly marginal farmers in HWC hotspots seem to be the most vulnerable to the negative impacts of HWC, although a systematic vulnerability mapping exercise has not been conducted. The first step, therefore, would be to standardize the methodology and benchmarks for vulnerability mapping in the country, to develop a better understanding of the vulnerabilities and resilience to HWC. A stepwise implementation of measures to reduce vulnerability to HWC and enhance resilience, will then be planned. Technical support documents will be developed to assist the implementers.

Resettlement schemes aimed at preventing the overlap of wildlife and humans can be successful in the long run, and will be explored further.

Efficient victim care and rehabilitation is significant to reduce the vulnerability of humans affected by HWC. Operating procedures and other instruments will be developed for enhancing cooperation with police, health department, local hospitals, district and local administration, disaster management departments, National Disaster Response Force (NDRF) and State Disaster Response Forces (SDRFs), civil defence institutions and volunteers, and paramilitary forces, during emergency situations, especially for crowd management and medical emergencies.

Financial and logistic support by the SFDs during victim care and rehabilitation will be strengthened.

Efforts will be made to engage with farmers and livestock herders in HWC hotspots, together with the agriculture and animal husbandry department, agriculture and veterinary research and extensions institutions. This can be done by facilitating them in the development of crops and cropping systems that are less attractive to wild herbivores, are suitable for local climatic and edaphic conditions, and are economically viable. Farmers will be supported in diversification into more types of crops, leading to reduced overall exposure and staggered harvest time.

This will be combined with effective crop protection measures for reducing overall vulnerability. Similarly, affordable livestock protection measures (e.g., herding or stall feeding) need to be defined and promoted. Only where these measures (alternate crops, crop and livestock protection) fail, despite sincere

implementation, *ex gratia* for crop and livestock loss would be used, as the last resort to reduce vulnerability of affected humans, as per the established procedure and rules of the respective state governments.

Current challenges associated with compensation schemes will be systematically addressed. Requirement of proof of improved crop and livestock guarding methods for receiving compensation payments may address this challenge to a large extent. The use of digital technology such as mobile applications to speed up the process of compensation payment, as being practised in some states, would be explored by all states in India. These will also be linked to the National HWC Mitigation Database. Furthermore, studies to facilitate a better understanding of the economics of losses, and research towards appropriate crop damage assessment methodologies due to HWC would be promoted. This will lead to more effective quantification, and help in identifying appropriate compensation amounts.

Use of economic tools such as crop and livestock insurance will be promoted on high priority. Crop damage due to wild animals has already been brought under the Pradhan Mantri Fasal Bima Yojna (PMFBY) as an additional risk cover. Efforts will be made to bring it under the main list of the scheme.

Vulnerability of the humans can also be reduced by providing a variety of economic incentives and benefits for offsetting the cost of living with wildlife. Possibility of setting up of foundations or trust funds for extending sustained support to the victim, can be explored.

Promotion of community-based ecotourism outside the PAs may enable local communities to offset the costs of wildlife presence and actually benefit from the same. The development of other wildlife-friendly livelihood development activities (social, economic and ecologically sustainable) needs to be evaluated.

Guidelines and mechanisms, such as joint patrolling by different departments, and zoonotic disease surveillance will be developed in each division (linked to HWC-MAP) to enhance cooperation between SFD, medical and health department, local hospitals and police, etc., to ensure that crowd management and medical emergencies are addressed in the most efficient manner during HWC-related emergencies.

Table 16: Desired results and achievements under Strategic Goal 15

Goal	Desired Results & Achievements	Responsible Institutions
Goal 15: Reduced vulnerability of humans	An HWC vulnerability mapping exercise is conducted to identify key issues and benchmarks	MoEFCC, SFDs
	Farmers are facilitated, via agriculture department and associated institutions, for adopting sustainable, climate-smart and wildlife-smart agricultural practices and to reduce crop losses	MoEFCC, Ministry of Agriculture & Farmers' Welfare, State Rural Development Department.
	Economic tools, such as compensation and <i>ex gratia</i> , are used where necessary, and in combination with crop and livestock insurance, along with activities such as crop- and livestock guarding and awareness measures	MoEFCC, MoRD, Ministry of Agriculture & Farmers' Welfare, SFDs
	Use of digital technology such as mobile applications to speed up the process of compensation payment	SFDs
	Community-based eco-tourism measures are explored as instruments for reducing vulnerability of humans in HWC hotspots	SFDs
	Guidelines and mechanisms (such as joint patrolling by different departments) in place in each division (linked to HWC-MAP) to enhance cooperation between SFD, medical and health department, local hospitals and police, etc., to ensure that crowd management and medical emergencies are addressed in the most efficient manner	SFDs, all relevant State departments

Strategic Goal 16:

Reduced vulnerability and enhanced occupational health and safety of field teams responsible for HWC mitigation.

Managing HWC invariably involves handling dangerous animals, drugs, hazardous chemicals and complicated equipment. It also involves dealing with difficult situations such as angry mobs, as well as risking injuries from animal bites or scratches, potential transmission of zoonotic diseases to humans, all posing health risks to the personnel involved. Occupational health and safety measures for all the personnel engaged in HWC mitigation operations will be a high priority for all states/UTs and agencies, to ensure overall well-being of the field staff and to avoid creating additional complications or casualties during the conflict mitigation operations.

The Guidelines on Occupational Health and Safety in the Context of HWC Mitigation will be formulated to elaborate methods, protocols and tools for ensuring health and safety during HWC mitigation operations. The members of RRTs and other frontline staff will be trained, using the approach as detailed in the *Supplementary Framework on Establishment and Capacity Development*, making them well versed with

the types of occupational health hazards they can be exposed to and how to deal with them. RRTs and other frontline staff will be provided with First Aid and Basic Life Support Training. In the event of any accident due to unforeseen circumstances, there will be a systematic emergency response plan to deal with that situation. Protective gear and other equipment will be made available for response teams and other frontline staff engaged in HWC mitigation operations, in each forest division.

One Health approach will be taken, especially when planning HWC mitigation measures in the forest fringe areas, in close coordination with the public health and animal husbandry departments. A systematic joint response involving relevant departments and agencies will operationalize the One Health approach. Efforts will be intensified, to cover the frontline staff under health and life insurance schemes, to collect samples for research, and to provide early warning systems for possible zoonotic and other emerging diseases.

Table 17: Desired results and achievements under Strategic Goal 16

Goal	Desired Results & Achievements	Responsible Institutions
Goal 16: Reduced vulnerability and enhanced occupational health and safety of field teams responsible for HWC mitigation	Mandatory occupational health and safety trainings are implemented, and protective gear and other equipment is made available for all members of the response teams and other staff engaged in HWC mitigation operations, in each forest division, based on guidelines on Occupational Health & Safety	SFDs
	Quarterly mock-drills on rescue and capture operations and other emergency operations are conducted at HWC hotspots, and bi-annual or annual mock-drills at other places, to ascertain overall preparedness of the response teams	SFDs
	Health and life insurance schemes are available for all the field staff engaged in HWC mitigation measures, including all members of the response teams	SFDs

Strategic Goal 17:

Reduced vulnerability of wild animals through animal welfare measures.

Animal welfare and ethical considerations will be integrated into the planning and implementation of all HWC mitigation measures. Training of staff from key departments and agencies, especially the HWC mitigation response teams at division, range and community-level, will be conducted jointly with other response teams and key relevant departments, to develop a common understanding of the safety and health issues of animals as well as humans beings in such situations. SFDs are encouraged to regularly conduct awareness programmes for the local community in cooperation with institutions such as panchayats and animal welfare institutions, on integrating animal welfare and ethical considerations into community-based HWC mitigation efforts and responses to wildlife.

Systematic participation of veterinary experts into the multi-stakeholder fora at division/ community-level, as well as in the national-level Working Groups, is encouraged. This will ensure that animal welfare issues are integrated at each stage of planning and implementation of mitigation measures.

Guidelines and Implementers' Toolkits will facilitate integration of animal welfare and ethical considerations into all prevention measures, including barriers and deterrents, fabrications and use of capture-, handling- and transport equipment.

Skilled veterinarians, well-trained response teams, field-tested guidelines, OPs, and appropriate equipment will be available for the capture, restraining and transport

of wildlife, to reduce vulnerability and ensure animal welfare, and ethical consideration are adhered to. Advanced training on animal welfare issues will be required for all personnel of the response teams, veterinary experts, and other officers and experts engaged in HWC mitigation measures.

Holding facilities and rescue centres will be equipped with the required equipment and skilled personnel, to ensure animal health and safety post-capture. Regional facilities to assess DNA markers to help identify individual animals in conflict will be explored, to ensure timely and accurate identification of target animal for rescue. Process and procedure of sample collection and submission for DNA marker assessment will be standardised, along with strengthening the system of monitoring and surveillance of zoonotic diseases.

Each state will systematically develop, through training and deputation, a pool of wildlife veterinary experts to be made available to each division, especially for the HWC hotspots, to ensure safe handling of the wildlife capture operations. Given that there are circumstances when the animal needs immediate care and attention, and the response teams are the closest and readily available, efforts will be made, in line with the existing legal provisions, to institute a system of developing a pool of SFD personnel from the response teams who can be certified, after advanced and specialized training, for animal immobilization, capture and handling operations, in specific circumstances, to ensure that animals in conflict receive timely care and attention.

Table 18: Desired results and achievements under Strategic Goal 17

Goal	Desired Results & Achievements	Responsible Institutions
Goal 17: Reduced vulnerability of wild animals through animal welfare measures	Communities, response teams and key relevant departments and agencies are sensitive to wildlife values and animal welfare issues, and make efforts to minimize the risk to wildlife	SFDs
	Forest officials, staff and members of rapid response teams are proficient in ethical, humane operations, as well as professional and scientific handling and management of animals in conflict	SFDs
	Veterinary expertise and capacities at the national, state and division-level are developed/ strengthened	SFDs

Strategic Goal 18:

Most vulnerable sections of the society, such as economically weaker groups, youth and women participate in planning, development and implementation of mitigation measures

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 each state and division will be to systematically map and analyse key stakeholders for HWC and ensure their effective participation in HWC mitigation measures, primarily through Community PRTs. This is a crucial step for commencing any inclusive approach. A multi-stakeholder approach would be encouraged for the successful implementation of the plans. Importantly, forming and empowering the Community PRTs by panchayats in an inclusive manner, with the participation of youth and women, will institutionalize a dedicated cadre of village/ward-level response teams. Strengthening the community-level PRTs with inclusion of statutory volunteers from existing institutional structures, to address critical issues such as crowd management and medical emergencies, will be explored. Training of the PRT members would gear the team towards preparedness for handling the HWC issues in their area as first responders, and additionally will act as

the key source of information to the RRTs and forest department.

Human attitudes, experiences, and vulnerabilities to HWC are shaped strongly by gender and other socio-economic factors. Women suffer a disproportionate burden of both direct and indirect impacts of HWC, in terms of decreased food security, changes in workload, increased physical, psychological, and economic hardship. Therefore, any form of HWC mitigation need to consider factors such as gender, age, and socio-economic situation as a prerequisite. Ensuring gender equality and women's rights, with due respect to human rights within the specific sector under consideration, will be a conscious step taken at every stage of planning, implementation and monitoring of the programme. Vulnerabilities of children will be given due consideration, as stress, fear and childhood trauma can strongly impact how they grow up as adults. Their rights to a safe environment and right to play, which are critical component in their well-being and development, will be given importance.

Table 19: Desired results and achievements under Strategic Goal 18

Goal	Desired Results & Achievements	Responsible Institutions
Goal 18: Most vulnerable sections of the society, such as economically weaker groups, youth and women participate in planning, development and implementation of mitigation measures	Stakeholder analysis for HWC mitigation conducted and updated every five years, by each forest division	SFDs
	Women, youth and rural poor, along with other stakeholders actively participate in HWC mitigation actions	MoEFCC, SFDs, State Rural Development Department and PRIs, District administration, NGOs
	Community engagement is strengthened and mainstreamed via Community PRTs	MoEFCC, SFDs, State Rural Development Department and PRIs, District administration, NGOs



Effectiveness of Mitigation

Measure

Actors

Effectiveness

Wildlife

Study of Animal Behaviour

- + WII - Dehradun
- + OTI (Wildlife Trust India)
- +

08

COMMUNITY INVOLVEMENT AND EFFECTIVE PARTICIPATION

- Fringe Community ~~Participation~~
- Community Institutions
- SFD

8

RED-LIGHT ALERT SYSTEM

FRINGE VILLAGERS FOREST DEPT.

8

ECO DEVELOPMENT

LOCAL COMMUNITIES
FINANCIAL INSTITUTIONS
TRAINING INSTITUTIONS

10

Technological advancement of local people

State Govt. &
Private sector via CSR

9

Intensive patrolling with in coordination with local people/communities.

- Local community
- Police
- Local NGOs
- Local media
- State Forest Department
- Education dept.

8

in Measures

life-friendliness

10

7.

10

10

10

6 (50 lac per
100 hac)

6

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

Human resources, infrastructure and finance are the foundation in ensuring effective and efficient implementation of strategies and action plans in a sustainable manner. Strengthening human resources, by investing in institutional capacities, and by creating a culture of competencies-based training and capacity development in the country, is the priority in this direction. Another critical aspect is the alignment of state and division-level plans with the national strategy and plan, and ensuring effective operationalization of the plans at national, state and division levels. Of equal importance, is to secure financial resources, and not only work towards strengthening the existing partnerships, but also developing new partnership across sectors and states, to mitigate HWC in the most effective manner.

Strategic Goal 19:

Institutional capacities in forest and other key relevant sectors are strengthened, for effective implementation of HWC mitigation in the country.

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 makes it evident that very few ministries, departments and agencies would require their staff to have such a wide range of competencies, as the forest sector experts and institutions.

To cater to this demand, it is planned to establish a National Consortium on Human-Wildlife Conflict Mitigation, consisting of key national organizations, with the secretariat at the MoEFCC, in the form of a “HWC Mitigation Cell”. The consortium organizations will collaborate on capacity development of key stakeholders, through trainings, faculty development programmes, establishment of facilities with state-of-the-art equipment for simulation trainings, support states in developing and implementing state-level strategies and action plans, facilitate multi-stakeholder dialogue at the national and state-levels, undertake trans- and multi-disciplinary research on HWC mitigation, and assist the central ministries in inter-country dialogue and international cooperation on HWC mitigation. This consortium may eventually pave the way for a dedicated National Institution on Human-Wildlife Conflict Mitigation in India with the state-of-the-art facilities.

A Supplementary Strategy on Capacity Development for Human Resource Management for Effective and Efficient HWC Mitigation in India, will provide mechanisms and possible interventions in this direction. This strategy will draw upon the National Training Policy of India (2012) and will place individual competencies at the heart of all capacity development efforts, leading to institutional capacity development. To make this transformational process successful, a National Working Group on Capacity Development towards HWC Mitigation will be established to facilitate interventions including mapping the competencies of professionals and expert institutions/ organisations, developing competencies-based nationally standardized locally-customised curricula and participatory training methods, to be eventually integrated into the regular curriculum of all national and state-level training institutions of forest, veterinary, administrative, rural development and Panchayati Raj institutions, police, disaster management, media and other relevant sectors.

Cooperation will be established with disaster management and civil defence institutions, with the possibility of creating a pool of NDRF experts/battalion, civil defence and home guard statutory volunteers with specialization in handling critical cases of HWC including crowd management and dealing with the situations of medical emergencies. State Forest

Competencies are knowledge, skills and behaviours that are required in an individual for effectively perform. In other words, competencies are behaviours that lead consistently to successful performance.

Capacity Development is a process which enables individuals, organizations and societies as a whole to shape their own development sustainably and adapt to changing conditions. In order to trigger sustainable changes in social systems, capacity development always addresses three levels – the individual, the systems of reference, and the systemic level. Systemic level refers to the enabling environment where the individuals and systems of reference interact and grow. Systems of reference denote the individual’s immediate sphere of influence, and can be an organization, a company, a network or an informal community. Individual competencies are the skills, knowledge and behaviours that lead to successful performance and distinguish superior performers from mediocre performers. They are defined as a behavioural disposition enabling individuals to succeed and solve problems in the face of ambiguous and dynamic environments.

Departments are encouraged to engage with such training institutions to develop specialized units at state, division and village/cluster level, apart from facilitating regular joint trainings of response teams of forest department, police, disaster management, fire brigade, civil defence, home guards and paramilitary forces with support from the relevant training institutions.

Training institutions will be integrated into the National HWC Mitigation Forum to receive policy advice. It will bring in enhanced effectiveness through their participation in planning, development and implementation of HWC mitigation measures at local level, in an inclusive manner.

Table 20: Desired results and achievements under Strategic Goal 19

Goal	Desired Results & Achievements	Responsible Institutions
Goal 19: Institutional capacities in forest and other key relevant sectors are strengthened, for effective implementation of HWC mitigation in the country.	The national capacity development strategy is operationalized, to provide guidance and necessary frameworks towards human resources development on HWC mitigation at national and state-level	MoEFCC
	A “National Working Group on Capacity Development” steers the institutional capacity development and networking, to achieve continuous innovation	MoEFCC
	Key forest and wildlife training institutions at national and state level deliver training and other capacity development measures on HWC mitigation, with high degree of efficiency and effectiveness	MoEFCC, Indira Gandhi National Forest Academy, Wildlife Institute of India, Directorate of Forest Education
	Key national and state training institutions from rural development and Panchayati Raj, disaster management, civil defence, agriculture and veterinary, police, public health deliver training and other capacity development measures on HWC mitigation	MoEFCC, National Institute of Rural Development, state institutes of rural development and Panchayati Raj, National Institute of Disaster Management, National Police Academy, National Disaster Response Force Academy, training institutions under Indian Council of Agriculture Research, Indian Council of Veterinary Research, Indian Council of Medical Research



Strategic Goal 20:

Individual competencies in forest and other key relevant sectors, including frontline staff, *mahouts* and daily wage workers are strengthened.

At the national-level, a pool of wildlife professionals will be developed within the forest sector, who will be trained on HWC mitigation on a regular basis, and will contribute towards effective HWC mitigation in the country at different levels and different functional areas. Provisions will be made for the inclusion of specialized non-forest service experts, to monitor and evaluate the mitigation measures, mainstream HWC into other sectors, manage the multi-stakeholder forum, capacity development, and overall human resources management. On a priority basis, every division in India facing HWC situation will have a wildlife veterinary officer and community engagement expert.

Mahouts and daily wage workers are the backbone of conflict mitigation strategies for HWC. Daily wage workers constitute a major part of response teams in most states. *Mahouts* provide a crucial service when it comes to patrolling in difficult-to-access areas and capture operations of animals in conflict. Traditionally, the job of a *mahout* has been a hereditary, family-based profession across the country. *Mahouts* require the highest level of discipline and training. It is not only their own, but the elephant's life too revolves around them. Efforts will be made to facilitate young apprentice *mahouts* through specially designed training and periodic refresher courses, including courses on scientifically established elephant behaviour. Language barriers of *mahout* will be addressed by conducting trainings in local languages and developing a pool of trainers for future exercises. In future, this tradition will be supported by different means, including institutionalisation of the training and encouraging youth to take up this profession.

There are some states where *mahout* training is conducted on a regular basis and in a structured manner. Such states can act as regional training hubs for neighbouring states. All *mahouts* in service, including daily-wage *mahouts* and newly recruited *mahouts* would undergo training by SFD before providing them a department-issued license/certification. Down the years, there has been a steady decline in the number of *mahouts*, due to the complex nature of the field functions and job security. To this end, the possibility of inclusion of *mahouts* into the forest departments will be explored. *Mahouts* will be provided with hardship allowance and accident insurance. The possibility of a bonus system for well-kept and healthy elephants will be explored. A database of experienced *mahouts* will be established/linked to the HWC database, and this information will be made readily available to all divisions in each state.

At present, daily wage workers in the field have not been imparted any formal or regular training, although some divisions of a state may conduct occasional training. Daily wage workers, who perform the bulk of the frontline work in HWC mitigation, will be given dedicated training, when they are part of the RRTs, patrolling and other HWC mitigation efforts. Options to improve systematic salary payment, risk allowance and insurance will be explored, along with improving their working conditions.

On the same lines, contribution of snake rescuers in mitigating human-snake conflict needs to be recognized. Provisions for certification and rostering of snake rescuers will be made, through accredited training institutions. This will not only ensure overall effectiveness of snake-rescue operations, but also take care of the well-being of snakes during such operations.

Table 21: Desired results and achievements under Strategic Goal 20

Goal	Desired Results & Achievements	Responsible Institutions
Goal 20: Individual competencies in forest and other key relevant sectors, including frontline staff, <i>mahouts</i> and daily wage workers are strengthened	A competency framework on HWC mitigation is developed and used by the training institutions for implementing capacity development measures of forest and other sector professionals	MoEFCC, respective training institutions
	A pool of wildlife experts within the forest sector is available to work in HWC hotspots in India	MoEFCC, SFDs
	System for certification and rostering of snake rescuers through accredited institutions is developed	MoEFCC, SFDs
	Existing <i>mahout</i> training institutions offer trainings to <i>mahouts</i> of other states, using structured trainings, based on a standardized curriculum, in local languages	SFDs
	Working conditions of <i>mahouts</i> and daily wage workers improved	SFDs
	Daily wage workers are integrated into the training and other capacity development programmes of SFD	SFDs

Strategic Goal 21:

State-level HWC Mitigation Strategy and Action Plans (HWC-SAP) are developed, implemented and regularly updated in all states and Union Territories of India, taking a landscape approach.

Effectiveness and sustainability of all HWC mitigation strategies and plans depends on successful involvement and commitment at all levels of decision-making. While the national government remains the central actor by providing overall enabling policy and institutional environment, it is the state-level authorities who play a crucial role in addressing HWC at the field level.

To operationalise and align the implementation of the HWC-NAP, it is imperative that the state governments develop their own HWC Strategy and Action Plans (HWC-SAP). The strategic priorities and goals of HWC-NAP, along with supplementary frameworks and guidelines, will form the basis for developing these HWC-SAPs. HWC-SAPs will also take into consideration the ongoing programmes and schemes being implemented by the state government, recommendations from the SLCC, and provisions in the species-specific Guidelines and Implementer’s Toolkits. The HWC-SAPs will be able to achieve their purpose only when they are integrated into the respective state-level planning process. Only then can the resource allocation for the implementation of the mitigation measures be defined with an objective to achieve the development goals of the state governments, and

synergies with key relevant departments be enhanced and trade-offs minimized.

The Common Framework for Developing State Human-Wildlife Conflict Strategy and Action Plans outlines the broad coverage as well as the requirements for the preparation of the state strategy and action plans. There would be systematic and regular coordination of different departments and agencies at the highest decision-making level in the states. This will ensure that HWC mitigation concerns are integrated into the state and district developmental plans. As a state policy, guidelines/orders would be issued to all development sectoral institutions, to take into consideration the extent and status of any HWC issues in the area, and probability of escalation due to proposed developmental plans. Relevant authorities and agencies responsible for implementing a developmental plan and activities in an area will be encouraged to consult the local forest authorities, on the status of HWC in the region, and information on the status of species-in-conflict, particularly foraging and movement patterns. It would be part of the impact assessment of the proposed activity, with appropriate consultation for risk assessment during the project formulation process itself.

Table 22: Desired results and achievements under Strategic Goal 21

Goal	Desired Results & Achievements	Responsible Institutions
Goal 21: State-level HWC Mitigation Strategy and Action Plans (HWC-SAP) are developed, implemented and regularly updated in all states and UTs of India, taking a landscape approach	States and UTs develop and update the state-level HWC-SAP, in line with the approach of HWC-NAP and within the existing legal provisions	SFDs
	Each state has established a State HWC Mitigation Forum, and State-level Coordination Committee (SLCC) to operationalize the HWC-SAP	SFDs, Respective State Governments/ UT administration
	States/UTs monitors and update State HWC Strategy and Action plans every five years	SFDs, Respective State Governments/ UT administration
	Regional HWC management plans are jointly developed and implemented by neighbouring states at a regional level, for wide-ranging species such as elephant and tiger.	MoEFCC
	HWC mitigation concerns are integrated into the state-level plans of key relevant sectors.	SFDs, Respective State Governments/ UT administration

Strategic Goal 22:

Division-level HWC Management Action Plans (HWC-MAP) in all states and Union Territories of India are developed, implemented and regularly updated.

HWC Management Action Plans (HWC-MAPs), taking into consideration the respective landscapes will be developed in each division or cluster of divisions, in line with the recommendations of the National Wildlife Action Plan of India (NWAP, 2017-2031). A common framework for developing the HWC-MAP is provided in Supplementary Framework to the HWC-NAP on Developing Division-level HWC Management Action Plans. The priority areas for developing HWC-MAPs are the districts that have high levels of HWC. The HWC-MAPs of divisions will be aligned to a landscape-level plan that will be the key instrument to operationalize inter-division strategies and measures.

To ensure that there is a regular and systematic exchange of experiences and information among the divisions within the same landscape, and among all divisions of the state, a landscape-level forum will be established at the Chief Conservator of Forests (CCF) level in the states. This landscape-level forum and stakeholder consultation process will facilitate the integration of landscape-level approach for developing and implementing HWC-MAPs at the division level. The forum can have: a working group of all Divisional Forest Officers (DFOs)/PA managers and relevant CCF/Conservator of Forest (CF) to facilitate intra-departmental networking; and a working group of

officers and experts from all key departments and agencies, to facilitate horizontal networking. The cross-department working group at district level can also be linked to the DLCC, and will be a key platform to work towards managing land-use change and bringing about synergies between goals of different departments, and facilitating inter-agency coordination for HWC mitigation during emergency situations. Under this forum, landscape-level knowledge sharing events and citizen science programmes can be organized, in collaboration with university/institutional partners. This will consolidate and broadcast the learnings and new experiences on HWC and its mitigation measures in the landscape. The learnings and proceedings of all such events can be used later for revision of the HWC-MAPs, and to provide feedback up to the HWC-SAPs.

A crucial requirement is for each HWC-MAP getting integrated into district and block development plans. SFDs would be facilitating this integration into relevant plans and processes at the district and block level. DLCCs would be the key institution to facilitate such integration, together with intensive efforts from the SFDs on organizing consultation meetings, workshops and joint trainings with the rural development and Panchayati Raj institutions at relevant levels.

Table 23: Desired results and achievements under Strategic Goal 22

Goal	Desired Results & Achievements	Responsible Institutions
Goal 22: Division-level HWC Management Action Plans (HWC-MAP) in all states and UTs of India are developed, implemented and regularly updated	Division-level HWC-MAPs taking a landscape approach – are developed, implemented and updated by each territorial division	SFDs
	All division- and landscape-level plans are adapted to integrate HWC mitigation, in line with the provisions made in the HWC-MAP	SFDs
	SLCC at state level, a multi-stakeholder forum at landscape level and DLCC at district level are steering integration of HWC mitigation into state, landscape and district-block level plans, respectively	SFDs, state departments of rural development and Panchayati Raj institutions,
	District and block-level planning integrates HWC mitigation, in line with the HWC-MAPs	SFDs, District administration and other relevant departments and agencies

Strategic Goal 23:

Finance and infrastructure is available for implementing national, state and divisional plans.

Financial and infrastructure resources are critical for effectively and efficiently implementing the national, state and division-level HWC plans. Key financial resources will be leveraged for strengthening field-level infrastructure, and infrastructure at the training institutions. This is apart from utilizing existing/new sources of finance, for developing economic instruments towards reducing the vulnerability of humans and wildlife. The existing budgets available with the MoEFCC and SFDs will not be able to adequately finance HWC mitigation plans. Therefore, there is a need to identify new and innovative financial sources and solutions and harness these to mitigate HWCs.

At the national level a “National HWC Mitigation Fund” may be established to fund several key HWC mitigation actions such as training and modernizing HWC mitigation infrastructure and equipment, corridor restoration, retrofitting existing infrastructure projects to mitigate their adverse impacts, and compensation and *ex gratia* etc.

At present, states are utilizing their departmental funds for providing *ex gratia* and compensation. However, these funds are not released to forest divisions on time and, funds are also not adequate to meet the demand. It is necessary for long-term sustainability and effectiveness of the mitigation measures, that dedicated funds are available. This is not only for providing timely *ex gratia* and compensation, but also for systematically addressing the drivers, establishing prevention measures, occupational health and safety of response teams, and for animal welfare interventions.

For assured availability of funds for HWC mitigation, including for emergency situations, maintenance of a dedicated fund at state-level viz., a “State HWC Mitigation Fund” can be established. From this, funds can be made available at the disposal of the local-level officers such as DFO. Allocation made by MoEFCC to the states under schemes for HWC mitigation can also be routed into this dedicated fund.

The panchayats are provided with their own budgets, from various central and state-sponsored schemes and programmes. These can be assessed for possible leveraging areas and common issues with HWC mitigation measures. Panchayat institutions at appropriate levels can be encouraged to participate in planning and implementing HWC mitigation, wherever possible, within their mandates of agriculture and natural resource management and others.

Infrastructure is another critical factor in ensuring effective HWC mitigation. Suitable and effective equipment, in sufficient numbers and quantity, along with fully functional HWC Mitigation Hubs or control rooms are critical for enabling the response teams and other field staff of the SFD to efficiently and effectively implement mitigation measures that is expected of them. HWC Mitigation Hubs / control rooms will be established in each landscape. It will, therefore, be the highest priority for the central and state governments to make available all such necessary infrastructure support.

Infrastructure support will also be provided to the national and state training institutions, for establishing necessary simulation lab facilities, fitted with all the required equipment (e.g., innovative training moderation material, simulation training equipment, HWC mitigation equipment for demonstration etc.) required for hands-on and competency-based training of the officers, response teams and frontline staff from forest and other

key departments. States will be encouraged to set up and further develop animal health monitoring centres at HWC hotspots, to ensure that animals in conflict receive appropriate and timely treatment and post-capture care. Infrastructure for post-capture facilities of animals in conflict will be strengthened, including rescue centres and animal safari.

Table 24: Desired results and achievements under Strategic Goal 23

Goal	Desired Results & Achievements	Responsible Institutions
Goal 23: Finance and infrastructure is available for implementing national, state and divisional Plans	“HWC Mitigation Fund” is established at national and state level	MoEFCC
	Financial resources made available by private sector and agencies other than forest departments for HWC mitigation	MoEFCC
	Convergence of HWC-NAP with other government schemes and programmes has been successfully achieved, and financial resources identified	MoEFCC
	All key national and state training institutions have established HWC mitigation training simulation labs, for hands-on training on key mitigation and operational processes	MoEFCC
	Each territorial division at HWC hotspot has a functional HWC Mitigation Hub and well-equipped RRTs at division and range levels	SFDs

Strategic Goal 24:

Measures are in place for fostering partnerships between key stakeholders for sustainability and greater outreach in HWC mitigation efforts.

Key stakeholders from different sectors and domains would be engaged, via the National HWC Mitigation Forum, and other means, to create an alliance or network of different experts and institutions with diverse perspectives, competencies and resources to address complex challenges posed by HWC effectively. This will ensure collaborative efforts from a wide array of partners such as government departments and agencies such as rural development and Panchayati Raj institutions, disaster management departments and agencies, police, civil defence, home guards, private sector (tea and coffee plantations), railways and highways department, educational institutions, wildlife conservation and development NGOs, as well as farmers' cooperatives and agricultural research institutions.

Ways to ensure cross-sector cooperation include using a participatory and inclusive approach by SFDs in planning and implementing mitigation measures; efficient information sharing across key departments; joint training courses for officers from key relevant departments; and taking a landscape approach to plan and implement mitigation measures. To ensure cross-sector cooperation, a higher commitment would be invested from the forest departments to ensure inter-departmental collaboration.

Innovative financial solutions will be developed and piloted to mobilize resources for HWC mitigation measures, including engaging infrastructure and mining companies to provide CSR funds for mitigation measures in the HWC hotspots, they work in.

Private sector companies will be supported to develop and adopt innovative technologies, strategies, and approaches to foster wildlife-friendly production, processing and marketing. This will be especially focussed in case of tourism, plantation, agriculture and industry sectors, where a landscape approach would be essential to avoid habitat fragmentation. Donor agencies would be facilitated and encouraged to address HWC in their programmes, either as direct interventions, or by adopting safeguards to avoid escalation of HWC in their intervention areas. Civil society organisations, especially conservation NGOs and animal welfare organizations, will be encouraged and facilitated to take a more prominent role in HWC-related research. They will be encouraged to extend their cooperation in testing of innovative mitigation methods and supporting the implementation of the interventions in a participatory manner, to ensure sustainability and effectiveness.

There are specific national and global targets under SDGs and Biodiversity Post-2020 targets of the Convention on Biological Diversity (CBD), climate change targets and initiatives, interventions of Smart Cities initiatives, *Swachh Bharat Abhiyan*, where convergence with the goals and indicators of the HWC-NAP will be explored and facilitated. Convergence with Reducing Emissions from Deforestation and forest Degradation (REDD++) would be specifically facilitated to further strengthen the Strategic Priority A. Possibility of joint working and sharing of financial resources will be explored with these schemes and programmes.

Table 25: Desired results and achievements under Strategic Goal 24

Goal	Desired Results & Achievements	Responsible Institutions
Goal 24: Measures are in place for fostering partnerships between key stakeholders, for sustainability and greater outreach in HWC mitigation efforts	National HWC Mitigation Forum is being used to identify topics and issues of common interest by key stakeholders	MoEFCC
	System of providing technical support to private sector, for adopting wildlife-friendly HWC mitigation measures, established	MoEFCC, individual companies/ establishments
	Civil society organizations are taking an active role in implementing the interventions	MoEFCC, SFDs, selected civil society organizations
	Externally aided projects adopt safeguards to avoid escalation of HWC in their intervention areas	MoEFCC, Ministry of Housing and Urban Affairs, Ministry of Agriculture and Farmers' Welfare



9. Implementation Plan

9.1. Implementation Approach

Given that HWC mitigation is a complex issue and it will take time to set up the mechanisms for monitoring, personnel and processes, the first phase of the implementation (2021-2026) would serve as a capacity development phase, to identify and assess specific gaps in the enabling environment, organizational capacities, and individual competencies.

This first phase of capacity development will also be critical for states in setting up the mechanism and processes for development of plans HWC-SAPs. They will also be creating enabling environment at state level, and developing division-level HWC-MAPs, aligned with state and national plan. In this phase, capacity needs for each state and division within the states would be prioritized. At the same time, plans will be developed to mobilize human and financial resources. States will also use this phase to receive feedback from key stakeholders on the plans and processes.

Institutional structures such as National HWC Mitigation Forum, state-level Coordination Committees (SLCC), landscape-level HWC forum, district-level Coordination Committee (DLCC) will play active roles in consolidating and reflecting on the feedback received from field implementation of the HWC-NAP as well as guidelines and facilitate in integration of this knowledge into developing adaptive mechanisms and measures at the relevant levels. At the end of the phase-I, comprehensive assessment of the progress and achievement, and stakeholder consultations would inform the process of updating the HWC-NAP. Feedback will also be received from the implementation of species-specific and issue-specific guidelines that will also be implemented during the same period. The next phase would be considered as the “First Implementation cycle of the National Human-Wildlife Conflict Mitigation Strategy and Action Plan (2026-31)”. In the subsequent implementation phases also, an in-depth capacity needs assessment report of each state/division would be evaluated, with a list of prioritized capacity development needs.

9.2. Plan for inclusion of key stakeholders in planning, development and implementation of HWC mitigation measures

Ensuring effective engagement of key stakeholders is essential to achieve all the goals set under the five strategic priorities of the HWC-NAP, and to ensure that the results are sustained over the long term.

- A communication strategy, will be developed by the National Working Group on HWC Mitigation Communication, to detail out the plan for raising awareness about the HWC-NAP, and to address the communication needs of key sectors and stakeholders to implement it.
- Facilitation of dialogue and awareness measures with key stakeholders to develop a common understanding on the strategic priorities, goals, expected results and achievements, possible interventions to achieve the results, mechanism and framework for monitoring and evaluation.
- Clarity of role and responsibility and scope of engagement
- Facilitating their engagement through technical support and institutional support. The working group on HWC Mitigation Communication, with specialist members drawn from wildlife, communication and media sectors, will be responsible for steering the implementation of interventions related to communication and awareness, to achieve the intended outputs and goals. Innovative instruments such as web-based knowledge platform will be used. This will act as focussed portal for all information and documents on HWC mitigation, such as strategy and plans, guidelines, good practices, case studies, training materials, toolkit, etc. It will also facilitate an efficient mechanism of multi-stakeholder dialogue on key issues of relevance via moderated online discussion forum
- Facilitating the stakeholders in monitoring and evaluation of the mitigation measures being implemented by them
- Women and youth will be encouraged to participate in all dialogue fora, as well as during the planning, development and implementation of mitigation measures at different levels.

9.3. Alignment with existing legal framework

Background

Conservation in India can be traced since prehistoric times and enactment of legislations to protect and conserve wildlife during the pre-independence era, eventually culminating in the Wildlife (Protection) Act, 1972

The basic ethical principle is that wildlife has a living interest, which in turn imposes reciprocal obligation and ethical duties upon us. The following principles are articulated as a basis for developing a legal perspective:

- If capture or elimination of animal in conflict is inevitable, then the methods used shall not inflict unnecessary pain and suffering.
- Humans have an affirmative duty to conserve and maintain biodiversity, including genetic variability and life support systems.

The National Forest Policy, 1988 advocates the needs of wildlife conservation, and linking the protected areas by “corridors” in order to maintain genetic continuity and the Draft National Forest Policy, 2019 raises concern that the “human-wildlife conflict” have escalated over the years due to combination of factors related to habitats and population of certain wildlife species within and outside forests.

The NWAP (2017-2031) prescribes adopting a concerted approach to protection, conservation and management of wildlife and recognizes that the HWC has directly and indirectly impacted humans leading to growing antipathy amongst the humans to wildlife and at the same time recognises that welfare of animals must be the primary consideration while managing conflict and the release in the wild based on exigencies of the situation and species-specific consideration.

Important laws relevant for conservation when dealing with HWC

The following legislations are considered directly relevant for conservation when dealing with HWC:

- Wildlife (Protection) Act, 1972
- Prevention of Cruelty to Animals Act, 1960
- Environment (Protection) Act, 1986

Other important legislations which facilitate conservation when dealing with HWC, include: Indian Penal Code, 1860; Scheduled Tribes & other Traditional Forest Dwellers (Forest Rights) Act, 2006; Indian Easement Act, 1982; Electricity Act, 2003; Railways Act, 1989; National Highways Act, 1956; Disaster Management Act, 2005 etc

Dealing with the wildlife and its habitat

The Wildlife (Protection) Act, 1972 is meant to provide for the protection of wild animals, birds and plants and for the matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country.

The Wildlife (Protection) Act, 1972 (WLPA) clearly defines the following terms, relevant from HWC perspective - wildlife; animal; wild animal; captive animal; habitat; hunting etc

Animals listed under the various schedules get varying degree of protection and Schedule I animals have been accorded the highest protection.

Prohibition of hunting

As per Section 9 of the Act, no person shall hunt any wild animal listed in Schedules I to IV except as provided under Sections 11 and 12 of the Act.

The legal provisions providing permission for hunting wild animals; removal of wildlife and its habitat including action taken in the interest of wild animals and its habitat in order to address the HWC directly or indirectly is as under-

Permission for hunting of wild animals in certain cases

Hunting of wild animals is to be permitted in certain cases as provided under Section 11.

S.11(1)(a) - Schedule I animal

In case of Schedule I animal, if the Chief Wildlife Warden (CWLW) of any State is satisfied that such an animal has become dangerous to human life or is so disabled or diseased beyond recovery then s/he may, by order in writing and stating the reasons therefor, permit any person to hunt such animal or cause such animal to be hunted.

However, no order for killing can be passed unless the CWLW is satisfied that such an animal cannot be captured, tranquilised or translocated.

Also, no such captured animal shall be kept in captivity unless the CWLW is satisfied that such animal cannot be rehabilitated in the wild and reasons for the same are recorded in writing.

The process of capture or translocation, as the case may be, of such animal shall be made in such manner as to cause minimum trauma to the said animal.

S.11(1)(b) - Schedule II to IV animals

In case of wild animals specified in Schedule II to IV, the CWLW or the Authorised Officer may permit for hunting or cause to be hunted such wild animal or group of animals in a specified area when not only the wild animal has become dangerous to human life or is so disabled or diseased as to be beyond recovery but also when it becomes dangerous to property (including standing crops on any land). All such orders for hunting must be in writing and must state the reasons for issuing such an order.

There is also a provision that the killing or wounding of any wild animal in self-defence or of any other person will not be an offence. However, the person must not be committing an offence when this act became necessary and such animal shall be government property.

The provision of according permission for hunting Schedule I animal can be invoked only by the CWLW for safe-guarding human life; differentiating the same from Schedules II to IV which could also be invoked by the Authorised officer and could also include safe-guarding property (including standing crops on any land).

Killing or injury of wild animal

As per the spirit of Section 11 (1), no wild animal shall be killed unless all possible options of capturing, translocation and tranquilizing are exhausted. Provision has been made to provide for the killing of only such animal that has become dangerous to human life and property or is disabled or diseased beyond recovery in a specified area.

However, Section 11 (2) does provide for the killing and wounding in good faith of any wild animal in defence of oneself or any other person provided that when such defence becomes necessary, the person was not committing any act in contravention of any provisions of the WLPA or any rule or order made thereunder.

Also, as per Section 11 (3) any wild animal killed or wounded in defence of any person, shall become government property.

Permission for hunting (Special purpose)

Under Section 12, CWLW can grant permit, by an order in writing stating the reasons therefor, to hunt, subject to such conditions as may be specified therein, any wild animal specified in such permit for the purposes of education; scientific research; and scientific management in the context of HWC.

For the purposes of 'scientific management', it is either translocation of any wild animal to an alternative suitable habitat; OR population management of wildlife, without killing or poisoning or destroying any wild animal.

As regards to the grant of permit in respect of Schedule I wild animals, previous permission of the central government has to be obtained WHEREAS in respect of other Schedule wild animals, previous permission of the state government has to be obtained.

In the context of HWC management, hunting under this section envisages capture and translocation without killing or poisoning or destroying any wild animal.

Destruction/removal of wildlife from Sanctuary and National Park

Any activity undertaken within the limits of a Wildlife Sanctuary (WLS) or National Park (NP) is in accordance to the approved Management Plan by the CWLW and any action needed beyond a Management Plan, which is not prescribed or contemplated and arises due to HWC is covered under Sections 29 and 35 (6) of the WLPA in respect of WLS and NP respectively.

The above Sections authorize the CWLW to give permission to "destroy, exploit or remove any wild life including forest produce OR destroy or damage or divert the habitat of any wild animal OR divert, stop or enhance the flow of water into or outside the WLS / NP" with the prior approval of the state government in consultation with the State Board for Wildlife that such removal of wildlife from the WLS / NP or the change in the flow of water is for the "improvement and better management of wildlife therein".

As per the proviso, the forest produce so removed may be used for meeting the personal bonafide needs of the humans living in and around the WLS / NP and shall not be used for any commercial purpose.

The applicability of this Section has been interpreted by the Hon'ble Supreme Court of India in W.P. (C) No. 202/1995: TN Godavarman Thirumalpad vs. Uoi and Ors and it was clarified, that any activity including the removal must be a part of a formal Working/

Management Plan and the permission from Supreme Court was delegated to Central Empowered Committee in Forest Conservation Act, 1980 cases, and National Board for Wildlife in case of WLPA cases vide its order dated 05.10.2015.

Declaration of any wild animal as vermin

While power of placing any species in any schedule of WLPA is vested with central government in Section 61, Section 62 empowers the central government to place any wild animal other than those specified in Schedule I and Part II of Schedule II to be vermin for any area, and for such period as may be specified therein and such wild animal shall be deemed to have been included in Schedule V (Vermin) so long as such notification is in force.

As the power of notification is vested with central government, it will be incumbent upon SFD/state government to place a scientifically fact-based proposal to the central government duly cleared by the State Board for Wildlife (SBWL)/NBWL

Disposal of the hunted wild animal

As per Section 39 (1) (a) every wild animal, other than vermin, which is hunted under Section/s 11 or 29 (1) or 35 (6) or kept or hunted in contravention of any provision of WLPA or any rule or order made thereunder or found dead or killed by mistake shall be the Government property.

However, Act is silent about appropriation/disposal of the wild animals included in Schedule V under section 62. This becomes more complicated when the notification under section 62 is for a limited specified area and the same species in non-notified area attracts section 39.

It is therefore expedient on the state government while submitting the proposals for declaration of any wild animal as vermin to duly get the advice from the SBWL towards disposal of the hunted wild animal as the SBWL is mandated in formulation of the policy for conservation of wildlife; amendment of any Schedule; and protection of wildlife as per Section 8 of the WLPA.

Also, central government before declaration of any wild animal as vermin could seek the advice from the National Board for Wildlife (NBWL) towards disposal of the hunted animal as NBWL is mandated to promote conservation of wildlife; framing policies on the ways and means of promoting wildlife conservation; and suggesting measures for improvement thereto as per Section 5-C of the WLPA.

Rehabilitation / rescue of wild animals

As per Proviso (2) of Section 11 (1) (a) of the WLPA, the first priority is to rehabilitate the captured wild animal into wild before taking into captivity.

As per Schedule 3 (7) of Rule 10 of Recognition of Zoo Rules, 2009, no zoo shall accept any rescued animal unless it has appropriately designed enclosure and upkeep facilities for the animal as well as facilities for keeping it in isolation during quarantine period.

Also, as per Schedule 3 (8) of Rule 10 of Recognition of Zoo Rules, 2009, whenever any zoo decides to accept any rescued animal for housing, a detailed report regarding the source from which the animal has been received, legality of its acquisition and the facilities available at the zoo for housing, upkeep and healthcare shall be sent to the CWLW of the state.

Provided that in case, the rescued animal pertains to an endangered species (Schedule I & II) a copy of the report shall also be sent to the Central Zoo Authority (CZA).

As per NTCA's SOP (2013), under no circumstances, an injured/incapacitated tiger / leopard should be released back into the wild, and the same needs to be sent to recognized zoo with the approval of the CWLW and CZA. Such animals should be kept in a designated Rescue Centre of the Zoo.

Measures in the interest of wildlife

As per Section 33 and 33-A of the WLPA, the CWLW is the authority who shall control, manage and maintain all WLS and NPs and for that purpose (HWC included) –

1. shall take such steps as will ensure the security of wild animals.
2. may take such measures in the interest of wildlife as s/he may consider necessary for the improvement of any habitat.
3. may regulate, control or prohibit, in keeping with the interests of wildlife, the grazing or movement of livestock.
4. may take measures towards immunisation against communicable diseases of the livestock kept within 5 kms of a WLS or NP.

The above measures are considered quite critical in the Management Plan prescriptions as well as in undertaking preventive measures towards HWC.

9.4. Alignment with other plans and processes

The HWC-NAP is India's contribution to the global conservation, poverty alleviation and sustainable development efforts. At the global level, the strategic priorities and goals of HWC-NAP are in alignment with

- 2030 Agenda for Sustainable Development particularly, SDG 1 (End Poverty), SDG 2 (Zero Hunger), SDG 14 (Life below water), and SDG 15 (Life on Land). The following National Implementation Targets under SDG15 are specifically relevant to HWC mitigation:
 - Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species
National Implementation Objective 2: Taking concerted efforts towards addressing the conflict between humans and wildlife.
 - Target 15.7: Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products
National Implementation Objective 11: Regular spatial and temporal dynamics of conflicts may be assessed for formulating and implementing state-level strategy for management of Human Wildlife Conflicts.
National Implementation Objective 12: Quick response, dedicated teams of well-equipped and trained personnel, mobility, strong interface with 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.
- Draft Post-2020 Biodiversity Framework under negotiation at Convention on Biological Diversity (CBD) particularly Target 4: Ensure active management actions to enable the recovery and conservation of species and the genetic diversity of wild and domesticated species, including through *ex situ* conservation, and effectively manage human-wildlife interactions to avoid or reduce human-wildlife conflict.
- Relevant resolutions of Convention on the Conservation of Migratory Species of Wild Animals (CMS) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The HWC-NAP is aligned with the existing guidelines and advisories issued by MoEFCC. The National Wildlife Action Plan (2017-2031), National Biodiversity Strategy and Action Plan (2008) and Advisory on Human-Wildlife Conflict issued by MoEFCC (Feb 2020) have a clear policy direction and actions significant for HWC mitigation.

During the first phase of the implementation of HWC-NAP, further alignment will be achieved with following relevant processes, plans, policies and programmes, of forest sector as well as other sectors, at the national, state and district levels:

- Climate change and forestry programmes, including Green India mission, compensatory afforestation schemes
- Climate change adaptation measures, including those implemented under National Climate Adaptation Fund
- Rural development and Panchayati Raj programmes, including MGNREGA
- Urban development programmes, including Smart Cities, *Swachh Bharat Abhiyan*
- Agriculture programmes, including those related to crop and livestock insurance (inclusion of crop damage due to wildlife animals in *Pradhan Mantri Fasal Bima Yojna*), use of alternate crops, cropping pattern
- Exploring synergies with the institutions and volunteers including disaster management, civil defence and home guards under Ministry of Home Affairs, for their role in community engagement, crowd management and other rescue and emergency response measures.
- Synergies with the measures being implemented by the public health departments, animal husbandry departments and other relevant agencies on One Health, to integrate One Health approach in all relevant measures at national, state and local levels.
- Exploring the possibility of cooperation with Green Skill Development Programme, and other agencies and schemes for accreditation of relevant certifying agencies and strengthening the skill-base especially of the response teams and local community

9.5. Institutional mechanism for implementation of the HWC-NAP

The foundation for developing institutional framework for implementing HWC-NAP already exists in India, in the form of established systems and mechanisms, at central, state and division/ district levels. Additional soft structures and mechanisms are planned, to ensure that all key stakeholders are able to effectively participate in planning, development and implementation of HWC mitigation interventions. The institutional arrangement for the HWC-NAP in India is shown in Figure 2.

When it comes to institutional responsibility, this Action Plan is based on the premise that all advocacy steps suggested in this plan, cooperation with all key line ministries and agencies from other sectors, will be the responsibility of MoEFCC. MoEFCC will also pursue similar action with the state governments to coordinate the process at the state-level. The state governments will then steer the action on HWC mitigation through the SFDs.

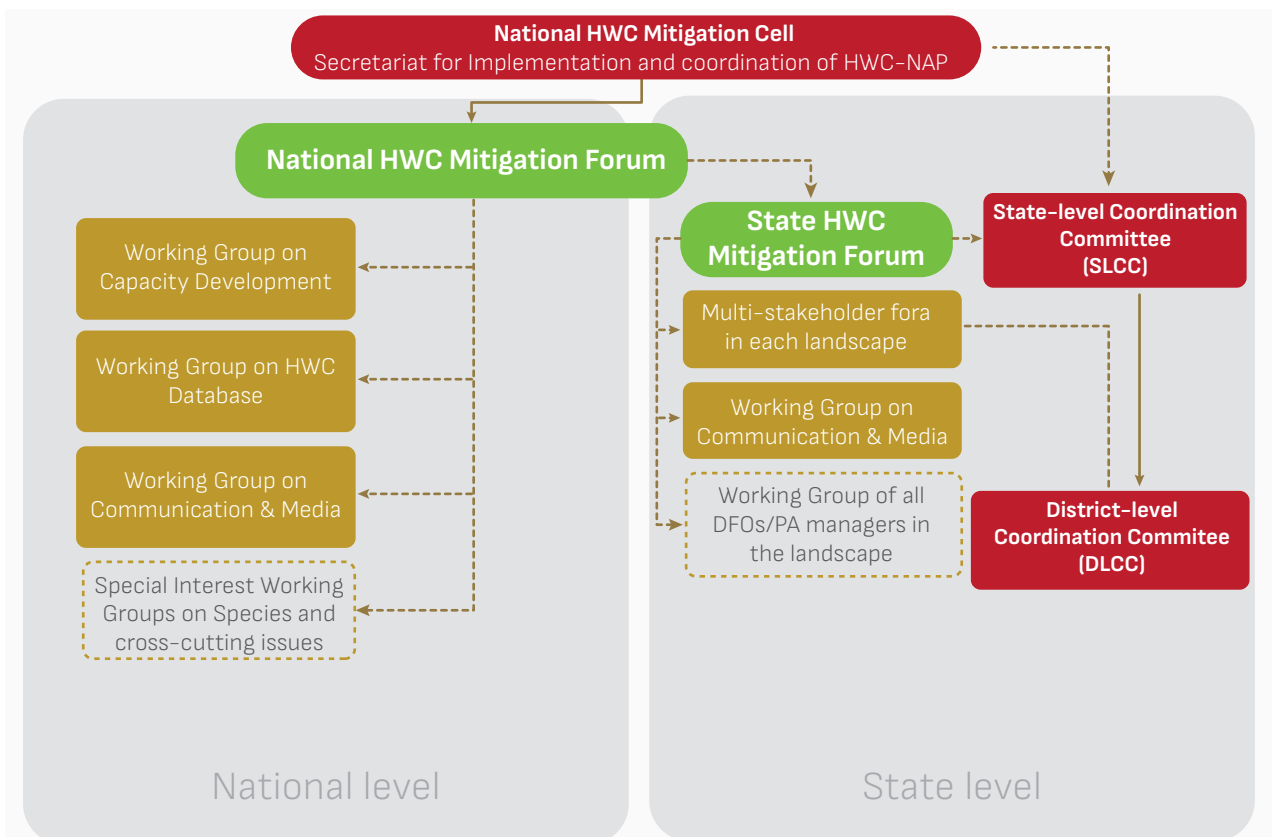
At National level, a national HWC Mitigation Forum will be established for overall coordination and guidance, for implementation at the national level. Representatives

from all relevant divisions/ departments/ agencies of MoEFCC at the national level, shall be part of the Forum. The Forum will also guide and facilitate the development of HWC-SAPs and their monitoring. The Forum, in the long run, will guide the MoEFCC and other key ministries and actors, in developing and implementing policies, processes, procedures and protocols, for effective and efficient HWC mitigation in India. The Forum will provide inputs on HWC mitigation to the Director of Wildlife Preservation, MoEFCC, Government of India.

The HWC Mitigation Forum will facilitate and steer two special sub-groups: multi-stakeholder sub-group to facilitate a wider dialogue among key stakeholders, and a sub-group of CWLWs on experience-sharing towards implementing the state-level HWC-SAPs using a common framework and approach.

The HWC Mitigation Forum will also facilitate and steer the following Working Groups, for coordinating technical work on key issues: National Working Group on Capacity Development, National Working Group on HWC Mitigation Communication, National Working Group on HWC Database, and Special Interest Working Groups (SWIG) relevant to species-specific and issue-specific guidelines.

Figure: 2 Institutional mechanism for the Implementation of the HWC-NAP



An HWC Mitigation Cell will be established at MoEFCC to serve as the secretariat, to bring in focussed efforts to engage different stakeholders during the plan implementation. The purpose of HWC Mitigation Cell is effective, holistic and timely coordination and implementation of the HWC-NAP.

At state/UT level, planning, review and monitoring of HWC Mitigation measures will be overseen by a State-level Co-ordination Committee (SLCC) with Chief Secretary as chair and CWLW as the member secretary. The committee would, among other tasks, will work towards alignment of HWC mitigation plans with the relevant plans and programmes of other sectors and departments; as well as make policy recommendations for strengthening the institutional, human and financial capacity of the system to implement HWC-NAP and HWC-SAP at state and local level.

A State HWC Mitigation Forum will be set up, chaired by CWLW, to facilitate a broad-based dialogue among key stakeholders, and discuss issues that maybe beyond the scope of SLCC. The State Forum will facilitate the implementation of HWC-SAP and implementation of guidelines. Each state will establish HWC Mitigation Task Force, under the HWC Mitigation Forum, to develop and periodically update their HWC-SAPs.

At district / division level, a district-level HWC Coordination Committee (DLCC) will be established in all HWC hotspots, chaired by the District Magistrate/ Collector/ Deputy Commissioner for inter-agency and cross-sector coordination. DLCCs of the districts in a landscape will be part of an overarching HWC Mitigation Multi-stakeholder Forum, at the landscape level, anchored at the CCF/CF level to steer landscape-level, planning and HWC-MAPs, with effective involvement of the district administration and other line agencies.

SFD will actively consult and involve relevant existing committees in all such matters as may impact HWC mitigation in the region.

Advisories will be issued by MoEFCC to guide inter-departmental coordinated and effective action by state governments/UT administrations on preventing and dealing with HWC and associated accidental deaths of wild animals listed in Schedule I to IV of Wildlife (Protection) Act.



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10. Monitoring and Evaluation Framework

A robust monitoring and evaluation (M&E) system will play a critical role in informing the implementation of the HWC-NAP that will lead to efficient, effective and holistic processes, outputs and impacts, and will facilitate evidence-based decision-making.

The M&E plan is in line with the holistic approach with indicators to assess process, output and impact of the implementation of strategic goals of the HWC-NAP at different levels, from national to state and local. This process is expected to build a large body of evidence that allows for the continual refinement of indicators, assist in strengthening the capacity of SFDs and other stakeholders, further strengthen the system of information collection, and allow informed policy and budgetary decisions

The M&E framework will help in

- tracking the progress and measuring what is happening in relation to what was planned (process-level indicators).
- providing a basis for accountability for results used and results achieved and supporting evidence-based decision-making.
- fostering multi-level governance mechanism based on participatory multi-stakeholder approach.
- mitigating risks to performance.
- assisting in strengthening the capacity of local and regional authorities to implement their urban agendas; and,
- providing recommendations and lessons to inform future policy processes.

Documentation and learning from implementation of the HWC-NAP and guideline will serve as self-assessment of the implementing agencies and will significantly contribute to the overall body of knowledge.

To facilitate monitoring and evaluation of the HWC-NAP, 54 indicators have been identified, which will provide a clear measure of the progress on process, outputs and impact being made under the HWC-NAP.

The Driver-Pressure-State-Impact-Response (DPSIR) model is used as framework for identifying and structuring indicators. Indicators are identified for current conditions (i.e., state of HWC and its mitigation) and responses (i.e., actions taken to mitigate HWC).

Response indicators are further classified into:

- Inputs and processes (e.g., financial inputs, institutional structures, capacity development, knowledge management) marked as “P” in the table below.
- Outputs and Outcomes (e.g., new plans and guidelines, availability of data and information) marked as “O” in the table below.
- Impacts (e.g., decline in the number of incidents of conflict, increase in competence levels of professional) marked as “I” in the table below.

The National HWC Mitigation Cell at the MoEFCC level will be established, along with the Working Groups, in 2021. This Cell will have dedicated professionals working on coordination with different implementing institutions, and will also gather data and information on indicators. The first task of this Cell will be to establish the baseline in 2021-2022.

To support the implementing agencies and officers, detailed indicator sheets will be developed as part of the Implementer’s Toolkit, which will provide details on developing data and information towards calculation/ consolidated of information required for indicators. Implementer’s Toolkits will also include indicative interventions that can be implemented to achieve the goals.

Table 26: Monitoring Plan for HWC-NAP

Monitoring plan for addressing the key drivers of Human-Wildlife Conflict (Strategic Priority A)

Goals	Indicators	Frequency of data reporting [all indicators will be reported in 2021 to establish baseline]	Responsible Institution for compiling data on the indicator
Goal 1: HWC mitigation is integrated into overall development planning as well as programmes, plans, policies and legislation of key relevant sectors.	Number of national programmes, plans, policies and legislations where HWC concerns are explicitly integrated (O)	Every five years	MoEFCC
	Number of inter-ministerial consultations on HWC mitigation (P)	Every five years	MoEFCC
	Number of states with a functioning state-level Coordination Committee (SLCC) (P)	Annual	SFDs
	State-wise proportion of division with functional district-level Coordination Committees (DLCCs) (P)	Annual	SFDs
	Number of state-level programmes, plans, policies and legislations where HWC concerns are explicitly integrated (O)	Every five years	MoEFCC, SFDs
	Number of states publishing the 'State of HWC report' (O)	Annual	MoEFCC
Goal 2: All development activities are sensitive to potential human wildlife conflicts	Number of cases where HWC was addressed in EIA report (P)	Annual	MoEFCC
	Number of new conflict hotspots as a result of development projects (I)	Every five years	MoEFCC
Goal 3: Comprehensive and integrated land use planning ensures that wildlife habitats are protected from loss, fragmentation and degradation	Trend of change in land-use/land cover (I) ⁷	Every five years	MoEFCC, Ministry of Housing and Urban Affairs
	Number of protected areas integrating climate change models into carrying capacity assessments (P)	Every five years	SFDs
Goal 4: Humans are enabled in working on their risk perception, improving their tolerance and enabling co-existence with wildlife in the same landscape.	Trends in risk perception of inhabitants in HWC hotspots (I)	Every five years	SFDs, National Working Group 'HWC Mitigation Communication'
	Number of educational institutions with 'holistic approach to HWC mitigation' integrated as part of their curriculum (O)	Every five years	MoEFCC, NGC secretariat
	Proportion of HWC hotspots with functional HWC helplines (O)	Annual	SFDs, National Working Group 'HWC Mitigation communication'
	Trends in number of media products that are in line with the holistic approach towards HWC (I)	Every five years	SFDs, National Working Group 'HWC Mitigation communication'

7 This indicator also facilitates the monitoring of implementation progress towards corresponding indicator under the Post-2020 (Draft) Global Biodiversity Indicator, as well as Draft National land-use policy

Monitoring plan for taking measures to reduce the direct pressures leading to conflict situation (Strategic Priority B)

Desired Results & Achievements	Indicators	Frequency of data reporting* [all indicators will be reported in 2021 to establish baseline]	Responsible Institution for compiling data on the indicator
Goal 5: Critical wildlife corridors, migratory routes, and movement paths of key wildlife species-in-conflict are identified, assessed and secured	Proportion of corridors with corridor management strategy (O)	Every five years	MoEFCC, NGOs
	Area of land brought under conservation in the wildlife corridors (O)	Every five years	MoEFCC, Working Group on National Database
Goal 6: Livelihood dependence of humans on protected areas, corridors, forests and other natural habitats is reduced	Trends in number of women and farmers practicing HWC-safe livelihoods (I)	Every five years	SFDs, ICAR
Goal 7: Incidences of wild animals entering or co-occurring in human-dominated areas are reduced, by applying, <i>inter alia</i> technological innovations, effective and wildlife-friendly preventive measures.	State-wise proportion of forest divisions and PAs providing data on population dynamics of key conflict species via the National Database (O)	Every five years	SFDs
	Number of divisions with early warning system (O)	Annual	SFDs
	Number of species-specific and issue-specific guidelines developed, field tested and updated in participatory manner (O)	Every five years	MoEFCC
	Well-being index of captured and translocated animals (I)	Every five years	SFDs
Goal 8: Efficient and effective response teams are developed in each forest division and protected areas at the HWC hotspots in India.	State-wise proportion of divisions with functional three-tiered response teams and hub (O) ⁸	Annual	SFDs
	Trends in public recognition of the impact of response teams (I)	Every five years	SFDs, National Working group on 'HWC Mitigation Communication'
	Trends in division-wise incidents of human-wildlife conflict (I) ⁹	Annual	SFDs, National Working Group on National Database
Goal 9: Wildlife habitat within protected areas and forests is restored	Trends in restored wildlife habitats around HWC hotspots (O) ¹⁰	Every five years	MoEFCC, SFDs
	Area covered by invasive species in HWC hotspots (O) ¹¹	Every five years	SFDs
Goal 10: Sustainable waste management and HWC-safe food storage in and around protected areas, and at HWC hotspots	Proportion of divisions with functional waste management plans (O)	Every five years	SFDs

8 This indicator also facilitates the monitoring of implementation progress towards SDG Goal 15.7. National Implementation Objective 12

9 This indicator also facilitates the monitoring of implementation progress towards corresponding indicator under Post- 2020 Global Biodiversity indicator (CBD)

10 This indicator also facilitates the monitoring of implementation progress towards target 8 of the National Biodiversity Action Plan (NBAP) of the Government of India

11 This indicator also facilitates the monitoring of implementation progress towards corresponding Post- 2020 Global Biodiversity indicator

Monitoring plan for ensuring availability of information and data on HWC to decision-makers and field response teams for effective mitigation measures (Strategic Priority C)

Desired Results & Achievements	Indicators	Frequency of data reporting* [all indicators will be reported in 2021 to establish baseline]	Responsible Institution for compiling data on the indicator
Goal 11: Wildlife research in the country addresses critical issues related to HWC mitigation	Trends in the financial resources allocated by Government and other actors for HWC related research (O)	Annual	MoEFCC
	Trends in research being conducted on HWC (O)	Every five years	MoEFCC
Goal 12: Effective, wildlife-friendly and evidence-based HWC mitigation measures are designed, implemented and customized for site-specific needs	Index on effectiveness and wildlife-friendliness of HWC mitigation measures (I)	Every five years	SFDs
Goal 13: A national database facilitates assessment and monitoring of HWC situation and formulation of effective HWC mitigation measures in the country	Trends in quality of data received at the National Database (O) ¹²	Annual	MoEFCC, Working Group on National Database
Goal 14: States, agencies and other stakeholders systematically share information, experiences and knowledge with each other to co-create long-term solutions on HWC mitigation	State-wise trends in recommendations received from DLCC, landscape forum, and SLCC on the implementation of HWC-NAP HWC-SAP and guidelines (O)	Every five years	MoEFCC
	Number of representatives from civil society and community-based institutions at the national, state and landscape-level landscape level HWC Mitigation Fora and Working Groups (P)	Every five years	MoEFCC

¹² This indicator also facilitates the monitoring of implementation progress towards SDG Goal 15.7: National Implementation Objective 11

Monitoring plan for reduction of negative impacts of HWC on humans and wildlife (Strategic Priority D)

Desired Results & Achievements	Indicators	Frequency of data reporting* [all indicators will be reported in 2021 to establish baseline]	Responsible Institution for compiling data on the indicator
Goal 15: Reduced vulnerability of humans	Trends in sustainable, climate-and wildlife-smart agricultural practices at HWC hotspots (O)	Every five years	MoEFCC, Ministry of Agriculture and Farmer's Welfare
	People's perception of their vulnerability (I)	Annual	SFDs, National Working Group on 'HWC Mitigation communication'
Goal 16: Reduced vulnerability and enhanced occupational health and safety of field teams responsible for HWC mitigation	State-wise proportion of trainings of response teams for enhanced occupational health and safety (O)	Every five years	SFDs
	Proportion of response team personnel with health and life insurance (O)	Every five years	SFDs
Goal 17: Reduced vulnerability of wild animals through animal welfare measures	Number of wildlife injured or killed due to retaliation (I)	Annual	SFDs
	Trends in number of animals injured or killed due to inhibitory/ harmful elements in the landscape (I)	Annual	SFDs
	Number of animal deaths and injuries during the HWC mitigation operations (I)	Annual	SFDs
	Numbers of veterinary experts at the HWC Mitigation Fora and Working Groups at national, state and division levels (P)	Every five years	MoEFCC, SFDs
	State-wise proportion of divisions and PAs with a full-time wildlife veterinary expert (P)	Every five years	SFDs
Goal 18: Most vulnerable sections of the society such as economically weaker groups, youth and women participate in planning, development and implementation of mitigation measures	Trend in number of women in national, state and landscape-level HWC Mitigation Fora and Working Groups (P)	Every five years	SFDs
	Division-wise trend in proportion of women in response teams (P)	Every five years	SFDs

Monitoring plan for effective implementation of national, state and local-level HWC mitigation plans, by strengthening financial and institutional structures (Strategic Priority E)

Desired Results & Achievements	Indicators	Frequency of data reporting* [all indicators will be reported in 2021 to establish baseline]	Responsible Institution for compiling data on the indicator
Goal 19: Institutional capacities in forest and other key relevant sectors are strengthened, for effective implementation of HWC mitigation in the country	Trends in forest, agriculture, veterinary, administrative, disaster management, Rural Development and Panchayati Raj training institutions with HWC mitigation integrated into their curriculum (O)	Every five years	MoEFCC, Training institutions, National Working Group on Capacity Development
Goal 20: Individual competencies in forest and other key relevant sectors, including frontline staff, <i>mahouts</i> and daily wage workers are strengthened	Competency level of professionals on HWC mitigation (I) ¹³	Every five years	MoEFCC, Training institutions, National Working Group on Capacity Development
	Proportion of states having access to training institutions for <i>mahout</i> training (P)	Every five years	SFDs, MoEFCC
	Level of satisfaction of <i>mahouts</i> , assistants, snake rescuers and daily wage workers with their job and working conditions (O)	Every five years	SFDs
	Proportion of daily wage workers/ snake rescuers with competencies-based training certificate (O)	Every five years	SFDs
Goal 21: State-level HWC Strategy and Action Plans (HWC-SAP) are developed and implemented in all states and UTs of India, taking a landscape approach	Proportion of states with updated State-level HWC Strategy and Action Plan(HWC-SAP), developed and updated in line with HWC-NAP (O) ¹⁴	Annual for first Implementation Cycle; then every five years	MoEFCC
Goal 22: Division-level HWC Management Action Plans (HWC- MAP) in all states and Union Territories of India are developed, implemented and regularly updated	State-wise proportion of territorial divisions with HWC-MAP developed and updated, in line with HWC-NAP (O)	Annual for first Implementation Cycle; then every five years	SFDs
	Number of districts with HWC integrated into district-level planning (I)	Every five years	SFDs
Goal 23: Finance and infrastructure is available for implementing National, State and Divisional Plans	Trends in financial resources available to implement strategic plan (O)	Every five years	MoEFCC
	Trends in the convergence of HWC-NAP with schemes of other sectors (I)	Every five years	SFDs, MoEFCC
Goal 24: Measures are in place for fostering partnerships between key stakeholders, for sustainability and greater outreach in HWC mitigation efforts	Trends in participation of key stakeholders in the National HWC Mitigation Forum (P)	Annual	MoEFCC
	Trends in number of interventions in the HWC-NAP being led by civil society organizations (O)	Every five years	MoEFCC

13 This indicator also facilitates the monitoring of implementation progress towards National Training Policy of India 2012

14 This indicator also facilitates the monitoring of implementation progress towards SDG Goal 15.7: National implementation Objective 11



11. Process of Development of HWC-NAP

The preparation of HWC-NAP followed a participatory consultative inclusive approach involving relevant stakeholders and sectors.

Stakeholders were involved in a blended bottom-up and top-down approach with the aim of facilitating a common understanding and consensus among key stakeholders in India, on key approaches and possible solutions for mitigating HWC. This approach aimed to ensure that a fair combination of views and experiences from the field as well as advice from the policy level informed the formulation of mitigation measures

During the four-year-long process, a core group of experts drafted the document with feedback and inputs from field practitioners, policy and thematic experts, via a series of workshops, group consultations, meetings and review of existing documents and cases. The experts implemented different roles in the drafting and editing process, viz. Coordinating Lead Authors, Lead Authors, and Review Editors. A National Technical Group (NTG), consisting of experts from MoEFCC, WII, GIZ and independent wildlife and policy experts, was formed for overall steering and facilitation of the process. Detailed terms of reference of each of this category were provided and meetings and workshops of the author groups were facilitated under the Indo-German Cooperation Project on Human-Wildlife Conflict Mitigation. A 'Working Group on Pilot Implementation of Guidelines and HWC-NAP' was formed to facilitate efficient day-to-day coordination for pilot testing, consultations and editing of draft guidelines and HWC-NAP. Annex I provides details on these groups.

This led to a dialogue with the management and policy level and sector experts to define the overall framework, priority and goal setting, as well as the formulation of indicators. The drafts were updated with feedback and inputs received during pilot testing of the draft guidelines at 20 forest divisions and protected areas, and consultations on the HWC-NAP. During the drafting process, due care was taken to align the HWC-NAP with relevant plans and programs of other sectors and stakeholders to develop synergies and avoid trade-offs. The multi-stakeholder consultation and engagement process on HWC-NAP drafting continued during COVID-19 times albeit virtually, which further increased the level of engagement with the process.

16 national workshops, 14 meetings, and more than eight field consultations with division-level officers and frontline staff aimed at testing elements of HWC-NAP were organized from August 2018 to September 2021. The process culminated in a regional multi-stakeholder consultation for Eastern and North Eastern States in Kolkata on Sep 3-4, 2021 followed by a National Multi-stakeholder Consultation to receive feedback on HWC-NAP and Guidelines in Bengaluru on Sep 17-18, 2021.

12. Monitoring and Evaluation of HWC-NAP

The HWC-NAP is a dynamic document. It will keep evolving with the developments in the policy landscape (in forest and other sectors) and implementation methods and techniques emerging from the relevant research and field evidence of implementing the HWC-NAP. For this, the feedback from policy experts, field practitioners and other wildlife experts will be analysed, along with the monitoring reports on the indicators, to assess the specific elements and sections that need to undergo changes. The first revision will take place in 2026, and then once every five years 2026 onwards.

Annex I

The Ministry of Environment, Forest and Climate Change, Government of India gratefully acknowledges the contributions of experts and field practitioners who developed the zero draft of the HWC-NAP with support from innumerable contributors using a participatory approach in workshops and consultations organized under the Indo-German project on HWC mitigation in India. The Ministry acknowledges the support provided by the Wildlife Institute of India as a knowledge partner in Indo-German Project, and State Forest Departments for pilot implementation of the key elements of HWC-NAP during 2018-21 and providing their valuable feedback for updation of the drafts. The Ministry also acknowledge the technical support extended by the German Federal Ministry for Economic Cooperation and Development (BMZ) and *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) in the preparation of the HWC-NAP.

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Annex- II

Key Meetings and workshops organized for development of HWC-NAP

Date and Venue	Title of event
04 Apr, 2018 Kolkata, West Bengal	Regional consultation: Need assessment for a common platform for states to discuss and manage human wildlife conflict
24 Aug, 2018	National workshops to consolidate the existing information, preliminary concept of the approaches and the outline
15-16 Oct, 2018 Wildlife Institute of India, Dehradun	Writing Workshop on HWC-NAP and Guidelines
17 Jul, 2019 Indira Paryavaran Bhawan, New Delhi	Meeting of Coordinating Lead Authors to discuss the outlines of the documents and confirmation of the overall approach
18-19 Sep, 2019 Aloha, Rishikesh, Uttarakhand	National Workshop on Developing Guidelines for Human Wildlife Conflict Mitigation in India
30 Sep, 2019 GIZ Office, New Delhi	Meeting of the group of authors, coordinators on 'Legal provisions' under National Action Plan
27 Dec, 2019 Kolkata	Regional Forum of the Eastern and North Eastern States on Human-Wildlife Conflict Mitigation in India
27 Feb, 2020 New Delhi	National Workshop on Development of Guidelines for Human Wildlife Conflict Mitigation in India
29 Jun, 2020 Online	Meeting for developing National Human-Wildlife Conflict Strategy and Action Plan for Mitigating HWC for further developing National Human-Wildlife Conflict Strategy and Action Plan for mitigating HWC
14 Jul, 2020 Online	Meeting of author group for further developing National Human-Wildlife Conflict Strategy and Action Plan for mitigating HWC
23 Jul, 2020 Online	Meeting of author group for further developing National Human-Wildlife Conflict Strategy and Action Plan for mitigating HWC
28 Jul, 2020 Online	Meeting of author group for further developing National Human-Wildlife Conflict Strategy and Action Plan for mitigating HWC
29 Jul, 2020 Online	Meeting of CLAs with veterinary experts to review the veterinary and animal welfare aspects in the draft HWC-NAP
18 Aug 2020 Online	Online Consultation on Sub-Zero Draft of the National Human-Wildlife Conflict Mitigation Strategy and Action Plan Karnataka Forest Department
21 Aug, 2020 Online	Online Consultation on Sub-Zero Draft of the National Human-Wildlife Conflict Mitigation Strategy and Action Plan Uttarakhand Forest Department
30 Sep, 2020 Online	Online Consultation on Sub-Zero Draft of the National Human-Wildlife Conflict Mitigation Strategy and Action Plan West Bengal Forest Department
13 Oct, 2020 Online	National Workshop on Development of National Action Plan for Human-Wildlife Conflict Mitigation in India
24 Nov, 2020 Online	Meeting of the National Technical Group on HWC-NAP
21 Dec, 2020 Online	Workshop on the Pilot Implementation of elements from HWC-NAP and Guidelines
22 June, 2021 Online	Meeting for the National Technical Group- HWC-NAP
28 Jun, 2021 Online	Meeting for the National Technical Group- HWC-NAP
22 July, 2021 Online	Meeting of the Working Group on Pilot Implementation and Consultations HWC-NAP
3-4, September, 2021 Hybrid - Kolkata	Regional Stakeholder Consultation - National Human-Wildlife Conflict Mitigation Strategy and Action Plan and Guidelines on key species and issues
17-18 Sept, 2021 Hybrid-Bengaluru	Meeting to discuss HWC-NAP, outline and common framework for HWC-SAP and overall structure of species and issues specific guidelines

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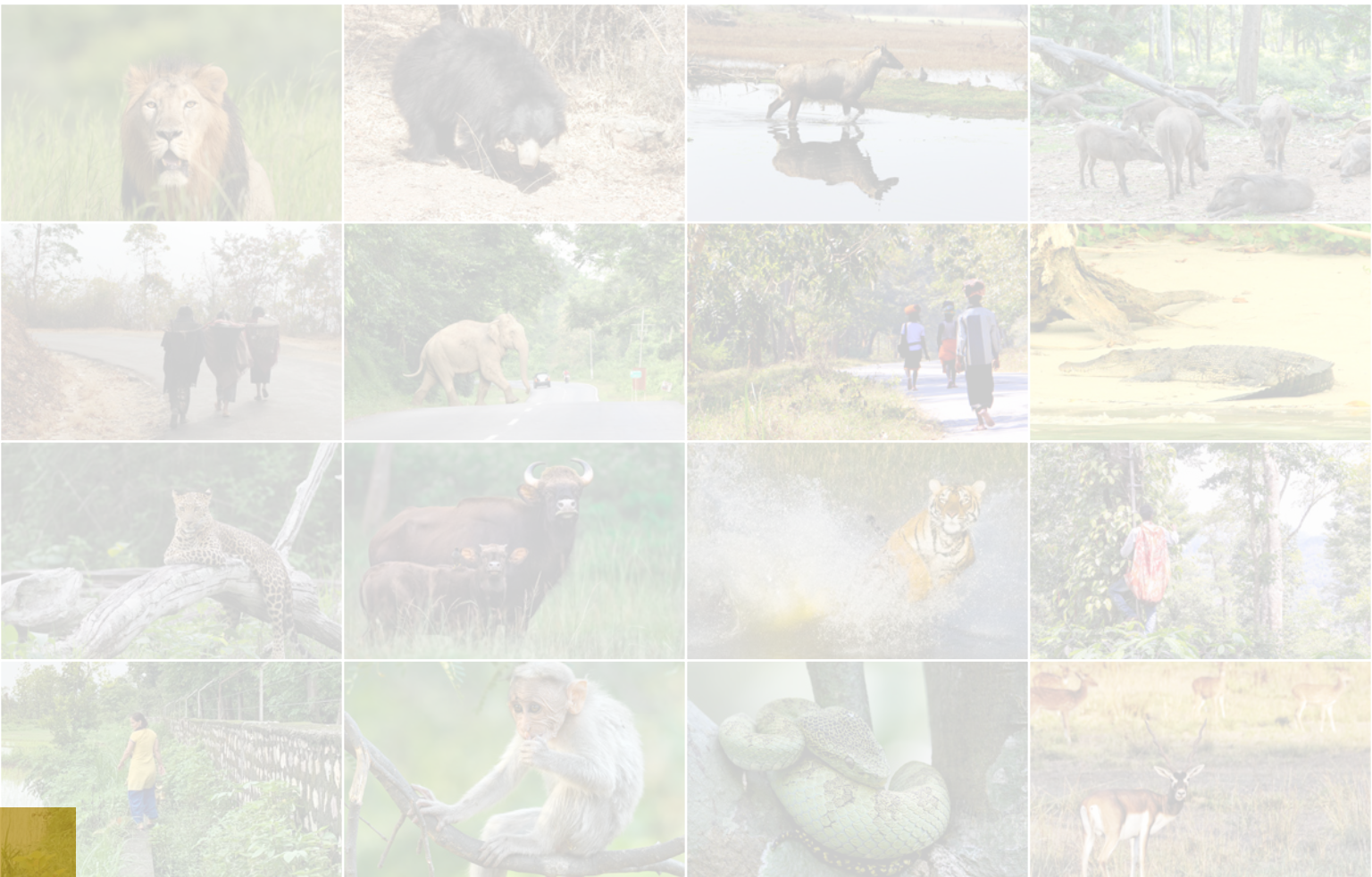
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Supplementary Frameworks

**National Human-Wildlife Conflict
Mitigation Strategy and Action Plan of India**

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Supplementary Frameworks

**National Human-Wildlife Conflict Mitigation
Strategy and Action Plan of India**

2021-26



National Human–Wildlife Conflict Mitigation Strategy and Action Plan:

Common Framework for Developing State Human–Wildlife Conflict Mitigation Strategy and Action Plans

**A COORDINATED APPROACH TOWARDS MITIGATING
HUMAN–WILDLIFE CONFLICT IN INDIA**

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1. BACKGROUND AND CONTEXT

Conservation of biodiversity, including wildlife, is essential. Consequences of biodiversity loss and the resulting loss of ecosystem services have a far-reaching impact on livelihoods and overall well-being of human communities. More so because of India's cultural heritage where co-existence is the natural way of living. This situation, however, is changing. Increasing human population in India, and consequent demand for natural resources, is leading to degradation and fragmentation of natural habitats. This is creating a situation where the humans and wildlife are increasingly competing for the same resources. The shift from 'co-existence' to 'conflict' has the potential to undermine existing and future conservation efforts, and hinder achievement of both Sustainable Development Goals (SDGs) and Biodiversity Targets.

Human-Wildlife Conflict (HWC) is a human-induced phenomenon. Therefore, all HWC mitigation measures must be developed in a truly participatory manner, engaging all the key stakeholders. The welfare of wild animals involved in the conflict should be given equal importance while planning and implementing any HWC mitigation measures (The National Wildlife Action Plan of India (2017-2031)).

Recognizing that there is a need to create an enabling environment for wildlife managers as well as communities to address the conflict situation, and strengthen their capacities in the most efficient and effective manner, the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, is collaborating with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), under the Indo-German Development Cooperation Project on "Human Wildlife Conflict Mitigation in India" (2017-2021).

The purpose of developing HWC mitigation strategy and action plans at national and state levels, is to facilitate a common understanding and consensus among key stakeholders in India, on key approaches and possible solutions for mitigating HWC in India.

For effectively mitigating HWC, it is important that there is a coordinated and synergistic effort at national and state levels. State-level HWC mitigation strategy and action plans, developed in line with a national plan, using a common framework and approach, will help in facilitating this coordinated and synergistic action.

2. INDIA'S APPROACH TO MITIGATE HUMAN-WILDLIFE CONFLICT

The National HWC Mitigation Strategy and Action Plan (HWC-NAP) for India is a guiding document. It facilitates a holistic approach to mitigate HWC, in an inclusive and sustainable manner. The HWC-NAP presents an important opportunity and framework to mainstream HWC mitigation criteria in policies, plans and programmes of the forest sector and other sectors, and at all levels of implementation – national, state and local. This ensures the achievement of overall conservation goals, leading to the continued provision of ecosystem services necessary for the well-being of humans.

The HWC-NAP is based on the following five strategic priority areas (each of which is associated with elements of a holistic approach): addressing the drivers; reducing the pressures; data and information for decision making and rapid response; reduction of impacts on humans and wildlife; and strengthening of institutional and financial structures for effective implementation. These priority areas are complemented by 24 strategic goals, several results and achievements, and further specifications and recommendations for possible interventions to achieve these results, implementation timeframes such as short-term (2021-22), medium-term (2021-2025), and long-term (to be continued in the next plan period as well); responsible implementation entities (i.e. MoEFCC, State Forest Departments, institutions, NGOs), and a robust monitoring framework with indicators of progress, output and impact levels, verifiers of indicators, and agencies responsible for assessing the indicators.

Following is the basic framework of guiding principles and approach within which the HWC-NAP has been developed:

Working towards harmonious co-existence: Wildlife, as part of our biodiversity, is fundamental to sustain ecosystem processes, functions and the continued delivery of ecosystem services. These are the foundation of livelihood security, health and overall well-being of all living beings. Therefore, both humans and wildlife should be protected from conflicts, while maintaining a balance between the needs of humans and the conservation of nature. To find a balance, and to look forward to equal importance to the welfare of animals as well as humans, viz., 'harmonious co-

existence', it is crucial to find solutions keeping in mind that the issues of HWC arise due to conflicting needs of wildlife and humans within the same landscape. Therefore, the solution lies in taking a landscape approach while formulating solutions for mitigating HWC and keeping in mind the welfare of all players involved in the conflict. This approach aims at balancing the welfare of both, humans and wildlife, to achieve a harmonious co-existence. All efforts must be made to ensure that the mitigation measures are developed, assessed, customized and evaluated through site-specific HWC mitigation instruments that are not only effective but also wildlife-friendly.

Holistic approach in addressing HWC by considering the thematic triangle of driver-prevention-damage mitigation:

HWC is a multi-faceted challenge, and thus requires an integrated and holistic approach to find solutions towards its mitigation. It is important to distinguish drivers and pressures, to correctly assess the states and impacts, while formulating the responses.

A holistic approach addresses the issue of HWC from three angles. First, by addressing the drivers and providing a conducive policy environment, through policy-making and cross-sectoral cooperation. Second, by effective use of suitable instruments, traditional knowledge and modern technology to prevent incidents of conflict. Third, by reducing the impact of HWC on both humans and wildlife by reducing the vulnerability of both, and through inclusive planning and implementation of all mitigation actions. Capacity development, structured experience and knowledge sharing, would be the foundation and continuing element of this holistic approach.

The HWC-NAP identifies the following 5 priority areas:

- Addressing the drivers and providing a conducive policy environment, through policy-making and cross-sectoral cooperation (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 (Actions to contain, minimize or resolve existing problems).
- Putting in place a system to generate clear information and data on the status of conflicts and mitigation measures, to be able to make informed and evidence-based decisions and implement the most efficient mitigation measures.

- Reduction of impact of HWC on both humans and wildlife by using effective economic, communication and cooperation instruments (Actions that deal with the impact of any residual or unavoidable conflict incidents).
- Ensuring sustained availability of financial and human resources for effective implementation of the HWC-NAP, and to provide an institutional structure for implementation of the strategy and action plan at state and local levels, to ensure that the approach and elements of the national plan are fully operationalized. Improved exchanges on innovation in coexistence measures, and continuous capacity development of the field teams dealing with HWC situations, is essential for successfully mitigating HWC.

Participatory approach to plan, develop and implement HWC mitigation measures:

Planning, development and implementation of HWC mitigation plans and measures, must involve key sectors and stakeholders at national, state and local levels. The process of stakeholder engagement should follow a systematic approach. This will ensure that stakeholders play an effective role in decision-making, and their views should be adequately reflected in the design and implementation of mitigation measures. The HWC mitigation plans and measures should be sensitive to the special needs of vulnerable sections such as rural and urban poor, and youth. The concerns of women should be specifically addressed. Efforts should focus on addressing the capacity development needs of key stakeholders, to facilitate their contributions into implementing HWC-NAP. This includes effective communication, collaboration and partnership between the forest department and other key sectors and stakeholders, strengthening science management linkages for HWC mitigation research, as well as effective communication between field officers and policymakers within the forest sector.

A blended bottom-up and top-down approach: All measures are implemented using a blended approach. This ensures that a fair combination of views and experiences from the field as well as advice from policy level informs the mitigation measures. Key issues and measures are discussed and consolidated at the field level, to gain an understanding of the problems, capacities and good practices. The issues and challenges are then analysed to develop a framework for Guidelines and plans. The framework is then elaborated by a group of coordinators and authors consisting of scientists, forest officers, veterinary

experts, and experts in capacity development, strategic planning and disaster management. Key stakeholders are then consulted for their feedback and inputs on the draft, before it is revised and placed for further detailed consultations with multi-stakeholder groups. The feedback and inputs coming from the entire process is used to revise the draft by the group of coordinators and authors.

Alignment with other processes and plans: Efforts will be made to align the HWC-NAP with other existing and ongoing strategies, plans and processes in the development and environment sector. Processes and systems will be established and/or further strengthened for forging linkages between these strategies, to enhance synergies and eliminate trade-offs.

3. THE NEED FOR DEVELOPING STATE HWC STRATEGY AND ACTION PLAN

HWC is becoming a development issue, affecting achievement of National Biodiversity Targets and Sustainable Development Goals, and several national and state efforts, focussing on poverty alleviation and sustainable livelihoods. This makes it important to ensure that there is coherence between the planning and actions at the national, state and local levels. Further, HWC mitigation requires a coordinated effort by key sectors and stakeholders. Unless addressed in a synergistic manner, HWC may seriously undermine the development gains achieved by these sectors. Hence there is need for developing state-level strategies aligned with the HWC-NAP, for effectively mitigating HWC in the country.

Effectiveness and sustainability of all HWC mitigation strategies and plans depend on successful involvement and commitment, at all levels of decision-making. While the union government through MoEFCC provides overall enabling policy and institutional environment, state-level authorities play a crucial role in addressing HWC at the field level. In this context, to operationalise the implementation of the HWC-NAP, it is imperative that the state governments develop State HWC Mitigation Strategy and Action Plans (HWC-SAP). The state plans will aim at -

1. Facilitating state governments in providing leadership and coordination of HWC mitigation efforts at division and local levels.
2. Facilitating consolidation, analysis and dissemination of state-specific data, information

and knowledge on HWC, to support HWC mitigation planning.

3. Identifying and addressing capacity development needs for mitigating HWC in that state, in an effective and efficient manner, on a sustained basis.
4. Assessing the synergies and trade-offs of HWC mitigation with other development and environment plans, programmes and policies, and successful integration of HWC mitigation into state-level development and sectoral planning.
5. Appraising key HWC mitigation measures to prioritize the optimum measures for key scenarios, and support decision-making on effective and wildlife-friendly HWC mitigation.
6. Facilitating the monitoring, periodic review and updating of the HWC-SAP, to ensure effective implementation.
7. Effective experience and resource sharing among states: Since conflict mitigation is a continuous process, which needs to keep evolving as the animals adapt to certain mitigation measures rendering these ineffective over time, experience-sharing on the development and use of mitigation measures among different states becomes very important.
8. Contributing to the system of monitoring of HWC-NAP.

The five strategic priorities and 24 goals, along with a Supplementary Framework and Guidelines to the HWC-NAP, form the basis for further developing state-level HWC-SAPs in India. Goal 21 provides the background for developing HWC-SAP for every state and Union Territory (UT) in India.

HWC-SAPs will build on the existing mitigation policies and plans of the state government. Each HWC-SAP will take into consideration the ongoing programmes and schemes being implemented within that state, HWC-NAP, and provisions in the species-specific Guidelines. HWC-SAP will be able to achieve its purpose only when it is integrated into the state-level planning process. Only then can the resource allocation for the implementation of mitigation measures be defined, with an objective to achieve the overall development goals of the state governments, and synergies with key relevant departments can be enhanced and trade-offs minimized. This Supplementary Framework outlines the broad scope, as well as the requirements for the preparation of HWC-SAPs.

4. THE NEED FOR A COORDINATED APPROACH AND COMMON FRAMEWORK FOR DEVELOPING STATE HWC STRATEGY AND ACTION PLAN

Each state in India is currently managing the issue of HWC on its own. However, to ensure effectiveness and efficiency in the efforts and to ensure coherence at the national level, it is important to adopt a common generic framework for the preparation of each state's HWC-SAP. Although some states have already initiated the process of preparing state strategies and plans, it is important to have a common understanding about the purpose and content of these plans. There is ample scope to incorporate unique regional or landscape-level conflict mitigation concerns into relevant state plans.

A coordinated approach is required to ensure uniformity in content, as well in the methodological steps, while preparing an HWC-SAP, specifically regarding the following aspects:

1. *Situation analysis using a holistic approach:* The conceptual framework used in the HWC-NAP may be used by each state to analyse the HWC situation at the state level, to understand key drivers and pressures of conflict, current state of conflict in terms of data and pattern, hotspots, impacts, and current responses. This will facilitate formulating a holistic response for mitigating HWC.
2. *Stakeholder participation in a more cohesive manner, linking national and state priorities:* This will require multi-level deliberations with various stakeholders, including non-forest government departments and agencies, private sector, research institutions, academia, NGOs and other civil society organisations. Some of these deliberations will need to be steered at the national level. The strategy and methodology of engagement with these stakeholders at the state level may need to be aligned with the national-level strategy and instruments.
3. *Implementation of the regional plans and inter-state coordination strategies:* This will require multi-state deliberations and agreements to find solutions for mitigation of conflicts, especially in case of long-ranging species, such as elephants and tigers. Aligning state strategies and plans of neighbouring/range states and also working groups of range states, effectively coordinated under a national forum, will provide for the most effective coordination instruments.

4. *Effective implementation of the species-specific Guidelines:* Species-specific Guidelines and Standard Operating Protocols (SOPs), which complement the HWC-NAP, provide the basic content for the states to design and implement their structures and processes, for effective implementation of mitigation measures.
5. *Structure of response teams and their competencies:* The Supplementary Framework under the HWC-NAP provide a basis for establishing and strengthening a three-tiered structure of response teams in the states. This will facilitate cross-learning between states, and alignment of capacity development measures across states.
6. *Financing mitigation measures:* Additional resources, as well as adjustments in the enabling environment, will be required to implement some of the mitigation measures. States may require support and guidance from the HWC-NAP to identify potential financial resources, and anchoring points to leverage from existing budget lines.
7. *Alignment of mitigation measures in the states with the species-specific Guidelines:* All the states will be operationalizing the Guidelines and SOPs developed for mitigating human conflict (wherever applicable) with elephants, leopards, wild pigs, snakes, rhesus macaques, blue bulls, crocodiles, black bears and sloth bears, blackbucks, gaur, media engagement, crowd control, medical emergencies, and occupational health and safety. A coordinated approach will be effective in collation of feedback and inputs, for revision and update of these Guidelines. Special interest working groups under the National HWC Mitigation Forum and the State HWC Mitigation Forum, respectively, will be instrumental in ensuring uniformity – with necessary customizations – in operationalization of the species-specific Guidelines at the state level.

In view of the above, it is appropriate that the HWC-SAPs are prepared according to a common and generic framework, under the overarching HWC-NAP. This will provide enough flexibility and anchoring points for incorporating state-specific contexts and situations.

5. APPROACH AND PROCESS OF DEVELOPING THE STATE HWC STRATEGY AND ACTION PLAN:

The HWC-SAP is to be planned, developed and 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, private sector, civil society, NGOs, research and scientists, policy makers, humans's elected representatives, local communities and all those who have a stake in HWC mitigation. Field personnel of the forest department should be included in the entire process, to ensure vertical coordination. The plan should be sensitive to the special needs of vulnerable sections such as rural and urban poor, and youth. The concerns of women should be specifically addressed.

The HWC-SAP should take a 'harmonious co-existence' approach, ensuring that both humans and wildlife are protected from conflicts. This has to be achieved by maintaining a balance between the needs of humans and the conservation of nature. All efforts must be made to ensure that the mitigation measures are developed, assessed, customized and evaluated through site-specific HWC mitigation instruments that are effective and wildlife-friendly.

One Health approach should be taken, especially when planning HWC mitigation measures in the forest fringe areas, in close coordination with the public health and animal husbandry departments. A systematic joint response involving relevant departments and agencies will operationalize the One Health approach. Efforts should be intensified, to cover the frontline staff under health and life insurance schemes, to collect samples for research, and to provide early warning systems for possible zoonotic and other emerging diseases.

The HWC-SAP is to also act as a capacity development instrument. Identifying and addressing the capacity development needs of key stakeholders, to facilitate their contributions into implementing the HWC-SAP, should be central to the process.

To ensure that the HWC-SAP is owned by the state government and its subjects, its alignment with other state-specific processes and plans is critical.

The goal of this process is to develop the HWC-SAP document, including modalities for its implementation, monitoring and updating. However, various steps involved in the process will also facilitate as anchors for supplementary strategies in key areas that are required to support effective implementation of the plan itself, viz strategies for capacity development and communication.

5.1. Institutional structure to develop and implement the HWC-SAP:

At state/UT level, planning, review and monitoring of HWC mitigation measures will be overseen by a state-level Co-ordination Committee (SLCC) with Chief Secretary as chair and Chief Wildlife Warden (CWLW) as the member secretary. The committee, among other tasks, will work towards alignment of HWC mitigation plans with the relevant plans and programmes of other sectors and departments; as well as make policy recommendations for strengthening the institutional, human and financial capacity of the system to implement HWC-NAP and HWC-SAP at state and local level.

A *state HWC Mitigation Forum* will be set up, chaired by CWLW, to facilitate a broad-based dialogue among key stakeholders and discuss issues that may be beyond the scope of SLCC. The state Forum will facilitate the development, periodic update and implementation of HWC-SAP and implementation of Guidelines.

Each state will establish *HWC Mitigation Task Force*, under the HWC Mitigation Forum, to develop and periodically update their HWC-SAPs, The state coordination mechanism will comprise of -

- **A state Steering and Advisory Group:** The HWC-SAPs will be developed for overall steering by the highest decision-making authority at the state level possible, e.g., Chief Secretary/Principal Secretary for Environment and Forests. The role of the steering and advisory group would be to provide overall guidance, validate the final document, to facilitate its mainstreaming into the overall development planning, through inter-department and inter-agency coordination, for effective implementation of the plan.
- **A state-level Technical Group (STG) for developing the state HWC Mitigation Strategy and Action Plan:** This group, chaired by the Principal Chief Conservator of Forest – Head of Forest Force (PCCF HoFF) of the

state, will have nodal representatives from the State Forest Department (SFD), as well as representatives from other key line departments identified by the state through the stakeholder mapping process, research institutions, civil society organizations and individual wildlife experts, as members of the core team. STG will thus be a mix of scientists, managers (forest officers with HWC experience), civil society institutions, and strategic planning/project management experts. All this ensure that the HWC-SAP takes a scientific approach, is feasible for field implementation, and uses an effective framework for implementation and monitoring results.

The STG will work in close consultation with the National HWC Mitigation Forum steered by the MoEFCC, on the process and products, to ensure that the HWC-SAP is in alignment with the HWC-NAP.

Experts will play specialized roles in the drafting and editing process, viz. Coordinating Lead Authors, Lead Authors, and Review Editors (Annex 1).

5.2. Key steps and elements involved in the process:

Assessment surveys and synthesis to use existing information and data for developing the outline of the state Strategy and Action Plan:

The purpose is, to compile the existing information and data of key issues, to conduct an overall situation analysis, and to develop synthesis reports for key issue areas, including:

- Situation analysis of HWC in the state, including basic information on numbers and distribution of key species in conflict
- Stakeholder mapping and analysis, with special emphasis on inclusion and gender considerations
- Synthesis and analysis of existing law, policies, rules, notifications, plans and programmes for wildlife as well as for agriculture, disaster management, police, rural development and other key departments relevant to HWC in the state
- Synthesis and analysis of data for identification of the drivers and pressures of HWC in the state, taking into account differences among different landscapes
- Basic information on the conflict statistics in the state
- Understanding the dynamics and factors behind conflicts, using a mix of methodologies

The sub-zero draft of the HWC-SAP can be developed with the synthesis of the above information. Write-shops for the author groups can be organized to facilitate the process.

A clear communication strategy can be developed at this stage for engaging key sectors and stakeholders in the process, as part of Step 2.

Stakeholder meetings can be organized at the field level, followed by workshops at the state and regional levels, to prioritize mitigation strategies and actions:

Engagement with key sectors and stakeholders, including, but not limited to forest officers, local communities, media, and government departments other than SFD, private sector (the list will come from the stakeholder mapping and analysis of Step 1).

Methodology for consultation can be meetings, dialogue and bilateral discussions, workshops, questionnaires and other web-based survey methods, open meetings or any other methods that can be effective in bringing in full participation from key stakeholders. The communication material and channels to engage key stakeholders should be institutionalised in a strategic manner.

Workshops and consultation meetings can be conducted at the field level to interact with farmers, rural communities, and local institutions. A thematic focus should be kept for each location, viz., focussing on human-elephant conflict in a landscape dominated by elephant conflict, or human-leopard conflict in a location with high leopard conflict. The focus of consultations should be chosen to ensure that optimum participation and inputs are achieved.

Separate as well as joint dialogues organized with policymakers from key government departments

(including defence and paramilitary establishments, where applicable), private sector and industries, key line departments directly relevant to HWC mitigation in the state such as railways, rural development, agriculture, etc, civil society organizations, and research and academic institutions, and experts. Capacity needs assessments can be conducted at this stage, during all events, to understand the capacity gaps likely to create hurdles in effective implementation of the plan.

Stakeholder consultations should ideally result in prioritized mitigation strategies and actions for different landscapes in the state, role of key actors, financial and institutional requirements for implementing prioritized strategies and actions, and list of identified capacity gaps.

Consultation meetings of the author group should be organized with the National HWC Mitigation Forum, along with a larger group of experts on wildlife social sciences, economics, agriculture, and other relevant experts for further strengthening the technical contents of the plan: The core group of authors and coordinators should conduct separate meetings and workshops/ consultations with the subject matter experts strategic planning experts, monitoring and evaluation experts, to receive technical inputs and align the plan with global and national good practices. At this stage, the core group should also compile the capacity needs assessment report, for implementation of the plan in the state.

Final drafting of the HWC-SAP by the group of authors:

The group of authors shall consider all the discussions and inputs from the meetings, workshops and consultation, incorporate these into the HWC-SAP document, and develop the zero draft of the document, complete with monitoring and evaluation plan.

Development of the Operational Plan and a road map for effective and sustainable implementation of HWC-SAP:

SFD shall steer the process of developing a concrete Operational Plan and a road map, by establishing an institutional framework in line with the HWC-NAP, to oversee the implementation phase of the Operational Plan, establishing a monitoring and evaluation plan, and identifying anchoring points for mainstreaming the HWC-SAP into the state-level planning.

6. RECOMMENDED OUTLINE OF THE HWC-SAP: A COMMON FRAMEWORK

1.1. Chapter 1: Introduction

1.2. Chapter 2: Situation analysis in <STATE>

An overview of the historical and current situation of HWC and mitigation measures in the state, on the following lines:

Patterns and extent of HWC in <State>

(Status of HWC, key data, patterns, species, humans's perceptions, hotspots)

Drivers and Pressures of HWC in <State>

(An overview of the key drivers and pressures of HWC in the state).

Impact of HWC in <State>

(An overview of the key impacts on humans and wildlife)

Key Stakeholders in <State>

Results of HWC-related stakeholder mapping and analysis in the state)

Existing response mechanism for HWC mitigation in <State>

(An overview of the existing Guidelines, instruments, training and other measures being implemented in the state for mitigating HWC)

1.3. Chapter 3: Guiding Principles, Overall Goal and Approach to mitigating HWC in <State>

Purpose

Guiding Principles

Overall Goal

Approach

Alignment

(A detailed description of the plans and processes in the development and environment sector programmes that need to be aligned with the HWC-SAP and vice-versa. The list includes existing and ongoing strategies, plans and processes in the development and environment sector, SDG goals, other development goals and targets that the state has pledged, and measures for forging linkages between these, for enhancing synergies and eliminating trade-offs)

Process of developing the HWC-SAP

(In this section, the process as followed, will be detailed out, along with the timeline)

1.4. Chapter 4: Strategic Plan for HWC Mitigation in <State>

STRATEGIC PRIORITY A: ADDRESSING THE KEY DRIVERS OF HUMAN-WILDLIFE CONFLICT IN THE STATE

Strategic Goal 1: HWC mitigation is integrated into overall development planning as well as programmes, plans, policies and legislation of key relevant sectors

(Under this goal, states should prioritize key sectors relevant for HWC mitigation in the state analyse their processes and plan for identifying anchoring points for integrating HWC mitigation into the plans and programmes of these key priority sectors. Special consideration should be given to integrating HWC mitigation into the SDG plans, climate change and disaster Management Plan of the states)

Strategic Goal 2: All development activities are sensitive to potential human wildlife conflicts

(Under this goal, states should identify key areas that are vulnerable from HWC viewpoint, and where additional development projects may accentuate the problem. States should list methods and processes that will be implemented, to ensure comprehensive spatial planning and other relevant information is available for appropriate assessment of HWC impact of development projects)

Strategic Goal 3: Comprehensive and integrated land use planning ensures that wildlife habitats are protected from loss, fragmentation and degradation

(Under this goal, states should consider setting up a process and framework for land-use change analysis to be conducted in cooperation with key sectors and stakeholders, with regard to its impact on HWC; elaborate institutional framework for setting up joint working groups, with representation from SFD and other key departments, to facilitate a dialogue to review land-use change monitoring, its impact on HWC and agree on possible recommendations and/or solutions, and plan towards carrying-capacity assessment of HWC hotspots with integrated climate change impact models)

Strategic Goal 4: Humans are enabled in working on their risk perception, improving their tolerance and enabling co-existence with wildlife in the same landscape

(Under this goal, states should consider the development of a clear communication strategy in line with the national communication strategy, and establishment of a multi-disciplinary Working Group on communication under the state HWC Coordination Committee / HWC Mitigation Forum, for implementing the communication strategy at state level. States should consider integrating awareness and understanding of wildlife behaviour and ecosystem services it provides, into state-level educational curricula, and intensive dissemination of information on animal behaviour using innovative and effective communication tools. Long-term engagement with the media as a strategic partner in raising awareness among humans on wild animal behaviour and on mitigation measures should be considered in line with the Guidelines for Forest-Media Cooperation States should plan setting up helplines to facilitate humans during emergencies at HWC hotspots)

STRATEGIC PRIORITY B: REDUCING THE DIRECT PRESSURES THAT LEAD TO CONFLICT SITUATION

Strategic Goal 5: Critical wildlife corridors, migratory routes, and movement paths of key wildlife species in conflict are identified, assessed and secured

(Under this goal, states should consider the mapping of all wildlife corridors for key long-ranging wildlife species on a GIS platform linked to the National Database, and designate agencies and institutions for regular monitoring and reporting of the prioritized corridors. Wildlife corridor Management Plans can be planned on a model basis, that are in line with the division-level HWC Management Action Plans (HWC-MAP). Use of instruments such as memorandum of understanding with local communities, land acquisition/procuring of land by NGOs, and other innovative mechanisms can be elaborated to acquire the community-owned/private lands, to secure critical corridors. There should also be a provision of constituting Conservation Reserves and Community Reserves in the corridors, and Corporate Social Responsibility (CSR) funds/partnerships can be utilised for securing land in corridors)

Strategic Goal 6: Livelihood dependence of humans on protected areas, corridors, forests and other natural habitats is reduced

(Under this goal, the state should consider measures, through inter-departmental coordination, for creating alternative livelihood opportunities through poverty alleviation programs such as MGNREGA, support to Self Help Groups (SHGs), micro-finance schemes, etc., to enhance incomes and reduce dependence on forests, further strengthen the institutions such as Joint Forest Management Committees (JFMC)/Community Forest Management (CFM), Vana Panchayat (VP) and Eco-Development Committee (EDC), and facilitate their greater support in maintaining and monitoring mitigation measures such as maintenance work of fences, trenches, alternate crop plantation, crop guarding etc., skill development training to youth in the villages around conflict hotspots to enable these forest-dependent populations find alternate livelihood options. Improved agricultural and animal husbandry practices, facilitation of improved processing, value addition and direct marketing for NTFP products will enhance incomes of forest-dependent communities. Promotion of alternate fuel sources, instead of fuelwood, should also be encouraged)

Strategic Goal 7: Incidences of wild animals entering or co-occurring in human-dominated areas are reduced, by applying, *inter alia* technological innovations, effective and wildlife-friendly preventive measures.

(The overall strategy should be to use a systematic way of assessing the population of key species, and to set up an early warning and rapid response system, with continuous capacity development of the teams and monitoring of their effectiveness. State-wise planning for establishing barriers should be planned, taking a landscape approach, to stop incidents of wildlife entering human-use areas, and at the same time ensuring that the barriers are not creating new situations of HWC elsewhere in the landscape by hindering the movement of long-ranging species. Design and sustainable maintenance plan of the barriers should be central to the discussions. In the remaining cases, the early warning and rapid response system must be used to make quick decisions, and the local community should be engaged via awareness measures and formation of primary response teams, so that they do not harm the wild animal and let

it go back on its own. In a scenario where the damage is inevitable, humans are provided effective compensation and *ex-gratia* payments for the damages caused during a conflict. In case the wild animal does not go back on its own, the response teams drive it in a safe way or rescue it, if required. All strategies on use of barriers need to reiterate that barriers are not seen as a stand-alone mitigation measure. Crop and livestock guarding measures, suitable for state-specific conditions, should be explored and discussed. Implementer's Toolkits should be used for developing this section. It is important that states draw a clear plan to engage the local community in implementing the mitigation measures to ensure sustainability.

This section should provide details on the division-wise 'Early Warning and Rapid Response System', where early warning system using new technology and community participation, and a three-tiered system of response teams is to be established at each forest division in line with the *Supplementary Framework for Establishment and Capacity Development of HWC Mitigation Response Teams* of the HWC-NAP.

States may assess the linkages of HWC with poaching and fire, to further develop measures for mitigation)

Strategic Goal 8: Efficient and effective response teams are developed in each forest division and protected areas at the HWC hotspots in India

(Since it is impossible to prevent wildlife and humans from using the same space, the 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 HWC mitigation strategy in India for years to come. This section will elaborate the detailed operational plan of establishment and management of a three-tiered system of response teams at each forest division in the state, in line with the Guidelines provided in Goal 8 of HWC-NAP. A detailed annex of GIS maps indicating the area of operation and locations of each response team may be included)

Strategic Goal 9: Wildlife Habitat within protected areas and forests is restored

(Under this goal, states will discuss measures for identification of impact pathways of invasive species on HWC in different landscapes, mapping of invasive species at the HWC hotspots, and possibility of implementation of invasive species management as an activity under MGNREGA scheme. In this section, states can provide existing and new plans for restoring wildlife habitat within protected areas and forest lands in the states)

Strategic Goal 10: Sustainable waste management and HWC-safe food storage in and around protected areas, and at HWC hotspots

(Under this goal, states may consider planning for long-term studies, in cooperation with local universities and institutions, on understanding animal behaviour in relation to food waste, measures for enhancing awareness among local community and residents on waste management practices, and measures to establish and enhance cooperation with local municipalities and panchayats on waste management. States should explore the possibility of engaging local organizations for steering citizen cleanliness drives and installation of specialized waste bins that cannot be opened by wild herbivores, around protected areas and conflict hotspots)

STRATEGIC PRIORITY C: MAKING AVAILABLE INFORMATION AND DATA ON HWC TO DECISION MAKERS AND FIELD RESPONSE TEAMS, FOR EFFECTIVE MITIGATION

Strategic Goal 11: Wildlife research in the country addresses critical issues related to HWC mitigation

(In this section, states should prioritize their research needs, with the participation of field practitioners, to facilitate the national and state-level wildlife research institutions to take up research on these critical issues. A key research priority may be population estimation and dynamics of key species involved in HWC. States may develop a plan for facilitating capacity development of forest department personnel to enable them for regular monitoring and basic

research on animal distribution, conflict distribution and effectiveness of barriers. Exploring the possibility of engagement with local universities and institutions located in the landscape, for long-term monitoring and research leading to the development of a sustainable and scientific knowledge base. Feasibility of conducting studies on immuno-contraception of selected species needs to be assessed)

Strategic Goal 12: Effective and wildlife-friendly and evidence-based HWC mitigation measures are designed, implemented and customized for site specific needs

(Under this goal, states should plan measures for collecting and sharing data on the effectiveness of mitigation measures being implemented in that state, using a standard criterion, and with participation of key stakeholders, at regular intervals)

Strategic Goal 13: A national database facilitates assessment and monitoring of HWC situation and formulation of effective HWC mitigation measures in the country

(Under this goal, states should define measures for collecting and sharing data on the National Database platform, using a standardized database format. States should plan for measures to use the data for mitigation of HWC, such as the use of conflict hotspots maps and their updating, decision-making at state level and by the Rapid Response Teams (RRTs), plans to train the personnel on use of mobile applications, and enabling the field personnel to identify data gaps that need to be filled to enhance their efficiency and effectiveness in the field)

Strategic Goal 14: States, agencies and other stakeholders systematically share data, information, experiences and knowledge with each other to co-create long-term solutions on HWC mitigation

(Creation and management of a database and documentation on good practices is only the first step. Policymakers, multi-disciplinary experts and practitioners from the SFD and other key relevant sectors 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. Under this goal, states will operationalize their access and contribution to the online portal on one hand, and develop measures to motivate field practitioners – especially the field response teams – to share their experiences and knowledge)

STRATEGIC PRIORITY D: REDUCING THE NEGATIVE IMPACTS OF HWC ON HUMANS AND WILDLIFE

Strategic Goal 15: Reduced vulnerability of humans

(Under this goal, the states should identify measures to facilitate in the development of crops and cropping systems that are economically viable less attractive to wild animals and are suitable for local climatic and edaphic conditions, and the possibility of use of MGNREGA scheme to support the farmers in crop protection and setting up barriers, development of water bodies and fruit trees at the boundary of protected areas and forests. The focus should be on the use of economic instruments such as compensation/*ex-gratia*, crop and livestock insurance schemes, incentives for crop guarding, performance payments for adapting innovative cropping and animal husbandry practices, and wildlife-friendly farming strategies and actions. The specific issue of provision of compensation for crop damage due to HWC under *Pradhan Mantri Fasal Bima Yojana*, can be developed after due consultation in the state with community representatives and experts. This section should also be used to detail the measures for the relocation of settlements, and for enhancing livelihood opportunities: providing economic opportunities wherever possible to reduce humans's dependence on local resources, reducing existing anthropogenic pressure, and for community-based wildlife tourism/ community conservancies, outside the protected areas)

Strategic Goal 16: Reduced vulnerability and enhanced occupational health and safety of field teams responsible for HWC mitigation

(Under this goal, states should plan the steps to be taken to address potential risks to personal safety, and to reduce such hazards. The Guidelines on occupational health and safety form the basis of planning measures under this goal, including ensuring protective gear for all members of the response teams and other field staff engaged in mitigation operations, health insurance scheme for all the field staff engaged in HWC mitigation measures, including all members of the response teams, life insurance for all members, permanent staff and daily wage workers of the response teams, and mandatory safety training to all members of the response teams and other staff engaged in mitigation operations)

Goal 17: Reduced vulnerability of wild animals through animal welfare measures

(Under this goal, states should plan the steps to be taken to address potential risks to animal safety, and to reduce such hazards. This goal should be elaborated in close consultation with veterinary experts, wildlife biologists, animal welfare experts and organizations)

Goal 18: Most vulnerable sections of the society such as economically weaker groups, youth and women participate in planning, development and implementation of mitigation measures

(Stakeholder mapping and analysis at state level must be conducted before writing this section. Measures should be put in place, as part of this goal, to conduct stakeholder mapping and analysis in each division, which should be updated at regular intervals, and models for stakeholder engagement should be confirmed in each plan on HWC mitigation. For ensuring the inclusive approach, it is recommended to constitute “Primary Response Teams (Community PRT) at village level” as part of the overall three-tiered system of response teams. Gender sensitization and designing instruments related to the needs of women, collecting the relevant gender disaggregated data and analysis must be prioritised)

STRATEGIC PRIORITY E: EFFECTIVELY IMPLEMENTING THE NATIONAL, STATE AND LOCAL-LEVEL HWC MITIGATION PLANS, BY STRENGTHENING FINANCIAL AND INSTITUTIONAL STRUCTURES

Strategic Goal 19: Institutional capacities in forest and other key relevant sectors are strengthened, for effective implementation of HWC mitigation in the country

(Specific measures to integrate HWC mitigation in all state training institutions, regular training of trainers at all such institutions covering the thematic topic of HWC and participatory training methodology, use of e-Learning and m-Learning courses, and measures to facilitate participation of state-level officers and trainers in institutional networking among forest and other sectors’ training institutions, for implementation of impactful trainings sustainably.

To achieve this goal, states should consider creating a cadre of veterinary officers within the SFD, integration of HWC topic into the regular curricula of state-level training institutions of agriculture, veterinary, rural development and tribal development, offering internships for the wildlife-veterinary students at

selected divisions, facilitating a pool of trainers drawn from the forest, agriculture, rural development sectors at state/division level, to ensure sustained training for the primary response teams and panchayat members, implementing joint training of forest staff with other key stakeholders, and facilitating faculty exchange between forest and other sector training institutions.

States should develop and implement capacity development strategy regarding HWC mitigation in the state, ensuring a selected pool of wildlife experts within the forest department to work in HWC hotspots in each state. Plan for making provision for inclusion of non-forest service experts to cover specific issue areas, plan to contribute in the “Working Group on Capacity Development” under the National HWC Mitigation Forum)

Strategic Goal 20: Individual competencies in forest and other key relevant sectors, including frontline staff, *mahouts* and daily wage workers are strengthened

(Specific measures to motivate forest staff and other practitioners to help improve overall performance and outputs in the HWC mitigation should be put in place. There should be a system of assessing training needs based on the competency framework, ensuring availability and use of the standardized curriculum on HWC mitigation in local languages.

States should plan measures for conducting structured training for *mahouts* in local languages, strengthen *mahout* training schools within identified forest camps, and institutionalize a system of a license/certification for all *mahouts*. States with long-standing experiences in *mahout* trainings, existing *mahout* training institutions should offer training to *mahouts* of other states. *Mahouts* can be provided with hardship allowance, accident insurance and bonus for well-kept and healthy elephants)

Strategic Goal 21: State-level HWC Mitigation Strategy and Action Plans (HWC-SAP) are developed, implemented and regularly updated in all states and Union Territories of India, taking a landscape approach.

(Implementation of HWC-SAP, in line with the approach of the HWC-NAP, establishment of a State HWC Mitigation Forum, will be facilitated by the National HWC Mitigation Forum, responsible for monitoring and revision of HWC-SAP, participation in Regional Forum, facilitated by the National HWC Mitigation Forum, for neighbouring states in the same landscape, and systems for updating the plan every five years. State-level multi-stakeholder

forum, facilitated by the state HWC Mitigation Task Force, should institutionalize the mechanism for incorporation of feedback from key stakeholders (horizontal alignment), participation in the Working Group of Chief Wildlife Wardens under the National HWC Mitigation Forum, on experience-sharing towards implementing the HWC-SAPs using a common framework and approach (vertical alignment), consolidation of work related to HWC mitigation being implemented by various units and agencies in the state)

Strategic Goal 22: Division-level HWC Management Action Plans (HWC-MAP) in all states and UTs of India are developed, implemented and regularly updated

(States will elaborate the detailed strategy to develop and implement division-level HWC Management Action Plans (HWC-MAP), taking a landscape approach, developed and implemented in all forest divisions within the states. A multi-stakeholder forum at the landscape level, anchored at the Chief Conservator of Forest (CCF) level, would steer the landscape-level planning and provide feedback for implementing the HWC HWC-MAPs. The states can also consider implementing citizen science programmes to strengthen science-management linkages at the local level)

Strategic Goal 23: : Finance and infrastructure is available for implementing national, state and divisional plans.

(States will elaborate plans for establishment of well-equipped HWC Mitigation Hubs in each territorial forest division in India, support to state-level forest and wildlife training institution, to establish a well-equipped HWC Imitation simulation lab, where the participants can get hands-on training on key mitigation operational processes (such labs should also be made available to the RRTs for their training), establishment of well-equipped animal health monitoring facilities in each HWC hotspot, and if required, establishment of animal safari, to act as post-capture facilities. States should identify new financing sources and align the state measures and goals with the financial resources available for SDG and climate change processes relevant to HWC mitigation)

Strategic Goal 24: Measures are in place for fostering partnerships between key stakeholders for sustainability and greater outreach in HWC mitigation efforts

(States should identify key private and public sector organizations and companies, via the stakeholder mapping exercise, and develop measures to engage with the selected ones, to institutionalize mechanisms and instruments for promoting biodiversity-friendly production and commercialisation, plan for engagement with public and private conservation organizations for working towards specific goals and contribute to reporting of indicators. A system should be developed to provide technical advice and support to the private sector to develop and adopt innovative wildlife-based livelihood practices for enhancing the appreciation of wildlife among the rural poor and vulnerable section at the HWC hotspots)

Chapter 5: Action Plan for HWC Mitigation in <State>

(as per the strategic plans in the previous section; and taking the expected results and achievements from HWC-NAP as the starting point; goals and interventions to be prioritized for different timeframes, viz. long-term, medium-term and short-term goals)

List of measures (short- and long-term) needed to implement the strategies listed in the previous section, including timeframe and sequence for implementation

List of ongoing and planned initiatives (who is doing what? Where? how much is allocated?)

For each action, identification of budget line and cost of implementation

List of responsible agency/unit for each action, their existing capacities (link the capacity development plan with the previous section)

Chapter 6: Monitoring, review and updating the plans

(Indicators to be defined here, taking the indicator framework from HWC-NAP as the starting point .)

Assess progress, effectiveness, and capacity gaps

Plan and process for updating the HWC-SAP

Monitor the process of development of HWC-SAP

Chapter 7: Communication plan

Annex 1:

COORDINATORS AND EXPERTS FOR DEVELOPING HWC-SAP

TERMS OF REFERENCE:

Representatives from government agencies, State Forest Departments, research institutions, NGOs, international organizations, and individual wildlife experts have been identified as members of the core team.

The experts are a mix of scientists, managers (forest officers dealing/having dealt with HWC) and civil society institutions, to ensure that the State Strategy and Action Plan is balanced.

The experts will play different roles in the drafting and editing process, viz. Coordinating Lead Authors, Lead Authors, and Review Editors. Detailed terms of reference of each of these categories is provided in the section below:

COORDINATING LEAD AUTHORS (CLA)

- CLAs will be responsible for the overall steering of the writing work, based on the existing outline and approach of the documents. Key task of the CLAs is to ensure that the zero draft is developed within the given timeframe and follows the agreed approach and quality. CLAs will coordinate forward with the Lead Authors and Contributing Authors to receive their inputs and will coordinate back with the State-level HWC Mitigation Forum, who will further coordinate with the National HWC Mitigation Forum/ MoEFCC.
- CLAs will have the overall responsibility of coordinating and drafting the document, using the outline and approach, within the agreed timeline. CLAs will be responsible for actively coordinating and following up with the Lead Authors and the support group, for receiving their inputs in time and for ensuring quality of their inputs.
- CLAs will be responsible for ensuring that all the Lead Authors adhere to the approach and contribute as per the terms of reference. CLAs will be responsible to bring to the attention of the state-level HWC Mitigation Forum, in case they are not able to engage any Lead Author, for any given reason.
- CLAs will be responsible for identifying any specific issues that may delay the drafting/diminish the quality of the document and advise the State-level HWC Mitigation Forum on the possible solutions required to rectify the issue.
- CLAs will be responsible to participate in the fortnightly coordination meetings with the State-level HWC Mitigation Forum (telephonic via video conferencing /face-to-face).
- CLAs will be responsible for planning and moderate the writing workshops/meetings of authors, as and when required, for timely completion of the documents.
- CLAs will be responsible for compiling the data/information gaps received from the LAs, and identifying the experts/agencies to conduct surveys for filling the data/information gaps, in a timely manner.

LEAD AUTHORS (LA)

- LAs will work on different sections of the documents, in line with the agreed approach and timelines. LAs will work in close coordination with the CLAs, and key officials and experts listed under “Contributing Authors”.
- LAs will be responsible for writing a major section of their respective document, as identified, and agreed with the

CLAs.

- LAs will be responsible for identifying, collecting, and synthesizing relevant information, data and material from existing reports, documents, government notifications, published literature and other credible knowledge sources as appropriate, with appropriate citation and due credits.
- LAs will be responsible to identify specific data and information gaps, and communicate this to CLAs, in an agreed format.
- LAs will be responsible for ensuring that the language in the document is gender-neutral, inclusive and is in line with the harmonious-coexistence approach for HWC mitigation.
- LAs and CLAs together, will identify additional authors, if required, for specific sections and/or to field test specific sections.

CONTRIBUTING AUTHORS (CA)

- Contributing Authors is the group of experts providing the necessary guidance to and sharing crucial information and field experiences with the lead authors, during the entire process of the development and field-testing of the documents.

REVIEW EDITORS (RE)

- REs will be responsible for ensuring that the CLAs and LAs follow the agreed outline and approach in drafting the HWC-NAP, and that they incorporate the feedback received from the field-testing of the HWC-NAP, appropriately in the final draft.

National HWC Mitigation Forum /MoEFCC

- The Forum will be responsible for the overall steering and facilitating the process of drafting, field testing, stakeholder consultations and finalization of the HWC-NAP, state-level HWC-SAPs, and Guidelines.
- The main function of the Forum will be to ensure that all the plans and procedures are being developed using the common agreed approach as indicated in this document.







Ministry of Environment, Forest and Climate Change
Government of India
2021

National Human–Wildlife Conflict Mitigation Strategy and Action Plan:

Common Framework for developing Division–level Human–Wildlife Conflict Management Action Plans

A COORDINATED APPROACH TOWARDS MITIGATING HUMAN– WILDLIFE CONFLICT IN INDIA

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1. 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 divisions, which develop and implement the HWC-MAP on a pilot basis, will serve as model divisions for replicating efficient and effective HWC mitigation not only in other divisions within the state, but also in other states in India.

2. 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” will be developed.

The Toolkit will also include details on the development of HWC-MAP, to facilitate divisions in developing and implementing these plans.

3. OUTLINE OF THE HWC MANAGEMENT ACTION PLAN

Section 1: Guiding principles and expected outcomes

- 1.1. Purpose and objectives
- 1.2. 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

3.1. 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]

3.2. 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]

3.3. 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/veterinary supplies and others)
Storage of equipment, drugs and medical/veterinary 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 centres

Engaging Humans before/during and after Emergency situation

Crowd control and management procedures; media engagement

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

3.4. 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

7.1. Monitoring Progress: indicators and milestones to provide status updates

7.2. Updating and revising the Plan HWC-MAP

References

Appendix







Ministry of Environment, Forest and Climate Change
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Supplementary Framework on Establishment and Capacity Development of HWC Mitigation Response Teams

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1. CONTEXT AND OVERVIEW

Since it is impossible to prevent the wildlife and humans from using the same space, the 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 (HWC) mitigation strategy in India.

The types of response teams, their function, roles, composition, and competencies-development strategies will be standardized across all states in the country via the National HWC Mitigation Strategy and Action Plan (HWC-NAP). This is to facilitate effective policy support and for overall assessment and monitoring purpose.

A tiered system of response teams will be established in all forest divisions across the country, where instead of one response team implementing all the HWC mitigation measures, the roles and responsibilities will be spread over division- and range-level team. Response teams at community-level will be established to facilitate effective participation from the local communities and other stakeholders.

The tiered system will include

- HWC Mitigation Hub or Control Room at the Chief Conservator of Forest (CCF) office or Divisional Forest Officer (DFO) office, responsible for overseeing the situation, coordination of actions, maintenance of database and equipment, and to act as Incident Command Center in case of emergencies
- A Rapid Response Team (Division RRT) at division-level, equipped with modern equipment for capture and translocation,
- Rapid Response Teams at forest range level (Range RRT) in ranges facing conflict issues, and
- Primary Response Teams (Community PRT) in each village/ward facing conflict issue.

A permanent pool of RRT members shall be created, and this team shall be on call, for minimum one year period, and then given a cooling / resting period, if required. A dedicated fund shall be created in each state for providing salaries, risk allowances, health- and accident insurance for the personnel engaged in all the mitigation work, including the RRTs, Community PRT and veterinary experts.

Guidelines and Standard Operating Protocols (SOPs), and clear decision-making trees shall be developed, to facilitate smooth and efficient communication, not only within the state forest department (SFD), but also with the other key actors, such as district administration, police, disaster management and civil defence personnel, animal husbandry veterinarians, railways, plantation owners etc. Division-level strategy for response teams should be elaborated in the HWC Management Action Plan (HWC-MAP), containing details on constitution of response teams, their capacities, SOPs, work ethics, occupational health and safety, etc. Details on how they will be trained shall also be provided.

2. ROLE AND COMPOSITION OF DIFFERENT RESPONSE TEAMS

2.1. Area of Operation of Response Teams

Area of Operation of the HWC Mitigation Hub, each RRTs and Community PRTs will be fixed as clearly as possible, to avoid any confusion, and preferably on a Geographic Information System (GIS) map.

The HWC Mitigation Hub will act as a critical centre to mitigate HWC in the forest circle/division, located at the Conservator of Forest's (CF)/Deputy Conservator of Forest's (DCF) office.

All information related to HWC will be collected at the Hub at the circle/division level. This Hub will act as the primary contact for reporting conflict instances by both the general public and also the frontline staff of SFD. Key criteria to create the Hub at circle or division level should be based on the feasibility of the Hub to manage its role in HWC mitigation. This in turn largely depends on the size of the landscape to be covered under the Area of Operation of that Hub, i.e., in a hilly terrain, it might be more efficient to create the Hub at division level. In a setting where the areas are easily accessible from the circle headquarters (HQ), a circle-level Hub may be more practical.

In both cases, the day-to-day operations of this Hub will be managed by a dedicated forest staff, preferably not lower than the rank of a Range Forest Officer (RFO). SFDs are encouraged to make appropriate administrative arrangements for such a posting/ creating a position for this.

The Area of Operation of each RRTs will need to be fixed in such a way that the RRT can travel within two hours / any other time-limit as may deem fit by the respective SFD, from their HQ to the incidence site. A common mobile app used by all RRTs and PRTs within the state, will help in ironing out any final issues in the Area of Operation.

The response teams will be established with the required competencies-development measures, including training, role clarity and equipment. RRTs will directly report to the concerned CCF or DFO/ protected area (PA) manager, while the PRTs will be largely coordinated through the local Panchayats. All RRTs within a landscape will report to a single office (CCF/DFO/PA manager), where possible, to ensure effective communication and coordination in deployment of teams in emergency situations.

2.2. Role of HWC Mitigation Hub/Control Room

- This will be the central focus for receiving and sending all communication related to HWC in the respective Area of Operation, so even when an RFO/ any other staff receives a message about presence of potential conflict animal or an incidence, it will be expected that s/he immediately passes on the message to the HWC Emergency Helpline at the Hub, and in turn, receives further directions as per the Emergency Response Plan of the division according to HWC-NAP
 - o SFDs will ensure that the helpline number is a dedicated landline number, for better connectivity
 - o There will a facility/provision to re-direct calls related to HWC, if received on other helplines such as fire/police/ centralized control room at district administration headquarters. Personnel at such control rooms (fire, police, district administration) will be regularly sensitized by the CCF/ DFO office on various types of HWC situations, required action and communication requirements by the control room.
- Maintaining the resource database (nearby hospitals, vehicles, fire brigade, local hotspots) mapped on a Geographic Information System (GIS) platform
- Identifying opportunities for radio-collaring of key conflict species, and sending the proposal to DFO;

- maintaining the data generated by radio-collars, camera traps and other such inputs; integrating the data in the Hub, and developing local hotspot maps
- Maintenance of all equipment such as radio-collars, camera traps, RRT kits, and regular update of inventory
- Facilitating the process of training of all response teams, as per the Guidelines on training (provided in the relevant section in this document)
- Identifying possible HWC hotspots for each season, and supporting the CCF/DFO in deploying the response teams at selected locations, enhancing the patrolling frequency of those locations, and intensifying the awareness/communication among villages with support from Community PRTs
- Maintaining and managing a record of RRTs, Community PRTs, their equipment inventory and status, and their mapped area of operation (on Geographic Information System (GIS) format)
- Maintaining a checklist of key medical professionals and hospitals in the area, along with contact details. The mobile app should also have the GPS locations of hospitals, so as to find the fastest approach
- The Hub will have the latest updated (quarterly update) list of key contacts of district administration, police, disaster management department, veterinary experts, fire brigade, panchayats, civil defence volunteers, home guards etc. to ensure efficient communication and coordination.

2.3. Rapid Response Team (RRT) at Division/PA level

2.3.1. Composition:

- DFO territorial/PA Manager
- Veterinary expert
- RFO with knowledge of landscape
- Staff with excellent knowledge of key wildlife species in the area
- Staff responsible for use and maintenance of all the equipment and vehicles.

(SFDs will work out a proportion of staff in the RRT that should be permanent staff of the SFD. This is required to ensure effectiveness in competencies-development efforts and retention of knowledge and experiences in the teams for longer duration)

2.3.2. Role:

- To capture and translocate a wild animal in conflict, as per the provisions of the WPLA, and in line with the species-specific Guidelines and SOPs
- To rescue wild animals stranded in human habitation, as per as per the provisions of the WPLA, and in line with the species-specific Guidelines and SOPs
- Veterinary expert on the RRT: Support from knowledgeable and experienced veterinarians is essential for:
 - o chemical immobilization and safe transportation of wild animals
 - o deploying radio-collars and identification marks on them
 - o treating sick and injured wild animals in the field and at the Rescue Centres/Transit Facilities; and
 - o screening captured animals for zoonotic diseases before releasing them back into the wild.
- *Kumki* Squad: Trained elephants (*kumkis*) and *mahouts* are very useful in dealing with several conflict situations, especially involving wild elephant, tiger, leopard, gaur and rhinoceros. *Kumki* elephants are useful for:
 - o Tracking, monitoring, chasing and driving of conflict animals
 - o Scanning of forest to locate animals in conflict, injured animals or their carcasses
 - o Assisting experts in chemical immobilisation and translocation of animals in conflict.
- The SFD may build a permanent *kumki* squad, either by procuring surplus trained elephants from other states, or by capturing suitable wild elephants from its own forests (under Section 11 or Section 12 of the WPLA-1972) and getting these elephants and prospective *mahouts* trained with the help of *kumkis* and *mahouts* from other states
- The *kumki* squad should be camped at a place reasonably close to the potential conflict area, having plentiful supply of elephant fodder and running water (for bathing and drinking), and accessible to a veterinarian.

2.4 Rapid Response Team at Range Level (Range RRT):

2.4.1 Composition:

- RFO or the Forest Range In-Charge (responsible for decision-making on the need for capture, and final reporting)
- Local veterinary expert (on call)
- Staff with knowledge of landscape

- Staff with excellent knowledge of key wildlife species in conflict
- Staff responsible for engaging with local panchayat and communities
- Staff responsible for engaging with local media
- Staff responsible for managing and maintaining the equipment and vehicles
- Staff responsible for documentation.

2.4.2 Role

- To oversee the status of recognised wildlife corridors once in a quarter and submit a report to the DFO
- To make arrangements to set up trap cages in locations where conflict has been reported
- To supervise, in close coordination with Community PRT, the barriers and other mitigation measures set up to prevent HWC, and inform the appropriate authority about their maintenance
- To regularly patrol and monitor:
 - o the location where any human has been injured (the area must be scanned/monitored by camera trap to investigate whether any other animal is moving in the area).
 - o to conduct an enquiry into each case of human death/ injury caused by encounter with a wild animal. Straying of the animal from its usual movement is to be monitored and a report submitted to the DFO.
 - o to identify wild animals indulging habitually in encounters with humans/ livestock and submit proposals to the DFO for action under S.11(1) of the WPLA-1972.
 - o To monitor any symptoms of zoonotic and other emerging diseases and alert the HWC mitigation Hub/ control room
- To take up communication and awareness measures for the local communities
- To provide training in conflict-management techniques to Community PRTs
- To ensure that all members of the Community PRT have insurance cover against death or injury
- To manage minor operations of HWC (e.g., chasing and driving of wild animals as per the WPLA, snake handling) or to manage the situation until the arrival of the Division RRT, in case a capture is required
 - o While the Range RRT does not itself conduct rescue and capture operations, it informs and alerts the HWC Mitigation Hub on the need for a Division RRT deployment, if any capture or rescue is required.

- To provide first aid to the persons injured by wild animals, and help them in receiving timely medical care
- To help the authorised chemical immobilization expert in tracking and locating the conflict animals proclaimed by the Chief Wildlife Warden CWW/ Authorised Officer under Section 11(1) of WLPA
- To help farmers affected by crop damage in getting compensation/getting *ex-gratia* relief from the competent authority at the earliest
- To conduct damage assessment of crops
- To conduct enquiry in each case of livestock kill/injury during conflict and submit a report to the DFO
- To manage the crowd of onlookers during and after an incident
- To engage with local media
- To meticulously document the operations, report, and upload the data into the Hub using mobile app
- To maintain the vehicles and other rescue equipment in top condition.

2.5. Primary Response Team at Village/Ward Level (Community PRT)

Local communities are at the direct helm of HWC. They bear the direct brunt of loss of livestock, human lives and other economic losses, as a direct or indirect result of conflict with wild animals. Therefore, there is a need to involve the local community members/ village elders of the panchayats through a participatory approach and develop a community-based emergency response systems from within the affected village/ ward. The formation and empowerment of community-level Primary Response Teams (Community PRT) in village/ wards or village/ ward clusters at HWC hotspots is expected to improve the first response mechanism, support the efforts of the division and range RRTs and can especially play a crucial role towards the crowd management in HWC situations.

Several examples of efficient first response, within the golden hours, and successful law and order situation/ crowd management by the specialized community-based statutory voluntary organizations such as Civil Defence and Home Guards¹ exists.

2.5.1 Recommended composition:

- Two panchayat/ward members (at least 1 woman representative)
- Two youth (18-24 years of age)
- Two representatives from either local Joint Forest Management (JFM) Committees, self-help groups (SHGs), Biodiversity Management Committees (BMCs), Village Forest Committees (VFCs), Eco-Development Committees (EDCs), or other community-based organizations such as civil defence and home guards
- One representative from a local educational institution (to facilitate long-term awareness, sensitization and training measures)
- Two members representing a local NGO, private sector such as tea/coffee estates, farmers, companies, army units, etc., depending on the specific situation of the area.

2.5.2. Sub-teams:

Suggested sub-teams within the Community PRT for specialised tasks, in case of emergency situations due to HWC:

- Control Room Service, to coordinate and steer the communication and response during an emergency situation
- First Response Team, to take lead at the onset of emergency
- Casualty Service, to take lead during medical emergencies
- Crowd Management Team, to take lead during crowd situations

The above sub-teams will undergo specialised trainings delivered by specialized agencies, to effectively implement their specific tasks, apart from the regular trainings provided to Community PRT as outlined in table 3 at the end of this document.

¹ According to the Civil Defence Act, 1968, civil defence is defined as any measure “not amounting to actual combat, that protects persons, property and places in India from hostile attack”. The objectives of Civil Defence are to save the life, to minimize loss of property, to maintain continuity of production and to keep high up the morale of humans. Civil Defence measures are designed to deal with immediate emergency conditions, protect the public and restore vital services and facilities that have been destroyed or damaged by disaster. This is also applicable to HWC related emergency situations.

‘Home Guards’ is a voluntary force, to serve as an auxiliary Force to the Police in maintenance of internal security situations, help the community in any kind of emergency such as an air-raid, fire, cyclone, earthquake, epidemic, etc., help in maintenance of essential services, promote communal harmony and assist the administration in protecting weaker sections, participate in socio-economic and welfare activities and perform Civil Defence duties. The Ministry of Home Affairs, Government of India formulates the policy in respect of role, raising, training, equipping, establishment and other important matters of Home Guards Organisation

2.5.3 Recommended Selection Guidelines for PRT members:

- Proficient in local language and having knowledge about the community
- Physically fit (required for foot patrolling and crowd control)
- Ability to work in a team
- Desirable: existing member of village-level/ward-level committees
- Desirable: Local resident from the village/town
- Passion for wildlife and nature conservation
- Basic understanding of wildlife behaviour
- Basic understanding of first aid (training will be provided by the SFD with support from the local/state educational/ training institutions)
- Good rapport with local community and understanding of mob management.
- Certified competencies relevant to the tasks in their respective sub-teams (this selection guideline is only for the members for the sub-teams in 2.5.2)

2.5.4 Role:

- To regularly monitor the community-based mitigation measures installed in the area
- To manage/maintain selected mitigation measures, such as barriers, as agreed with the Range RRTs
- To create awareness among local communities on HWC mitigation, and ensure that they do not undertake any activities that might lead to a conflict situation

- Facilitating sessions on HWC-related topics in regular panchayat/ward meetings, for sharing information on wildlife biology, nature and ecological needs of the wild animals, their behaviour, Dos and Don'ts for human safety. In such sessions, the RRT members can also be involved, along with wildlife, agriculture and rural development experts, from time to time
- To facilitate capacity development of local community on alternative livelihood, by engaging SHGs and other groups
- To maintain the small equipment provided to the PRTs, and inform the Range RRT, in case a replacement is required
- To document the operations, and report to panchayat
- To act as first responders in the event of HWC, and manage the situation till the other response teams arrives
- To facilitate the Range RRT in managing crowd during driving/capture operations
- To facilitate knowledge sharing with the local communities regarding the HWC mobile app
- To provide information to local communities on state government schemes and programmes on HWC mitigation
- To provide information to SFD on first signs of forest fire
- To support the SFD in conducting HWC risk analysis, and development and implementation of division-level HWC-MAP
- To support SFD in identifying locations for invasive species removal

3. TRAINING APPROACH FOR RESPONSE TEAMS: KEY ELEMENTS OF THE CAPACITY DEVELOPMENT APPROACH FOR RESPONSE TEAMS

3.1 Division and Range RRTs

Capacity development of the Rapid Response Teams will comprise the following:

Regular competencies²-based trainings will be provided to RRTs by state's training institutions/other accredited institutions within that state.

Competencies of members of RRTs will be reviewed on a regular basis, using a standard format of Training Needs Assessment (TNA). Based on the results of TNA, the curriculum for their training will be fine-tuned and updated regularly.

Training of the RRTs will be implemented using a competencies approach, and standardized training courses. Training will be imparted by a team of trainers (trained in using participatory training methods for overall steering of the training), and a team of resource persons, to provide specific inputs (drawn from different domains such as wildlife, social sciences, Geographic Information System (GIS) etc., depending on the theme of the training).

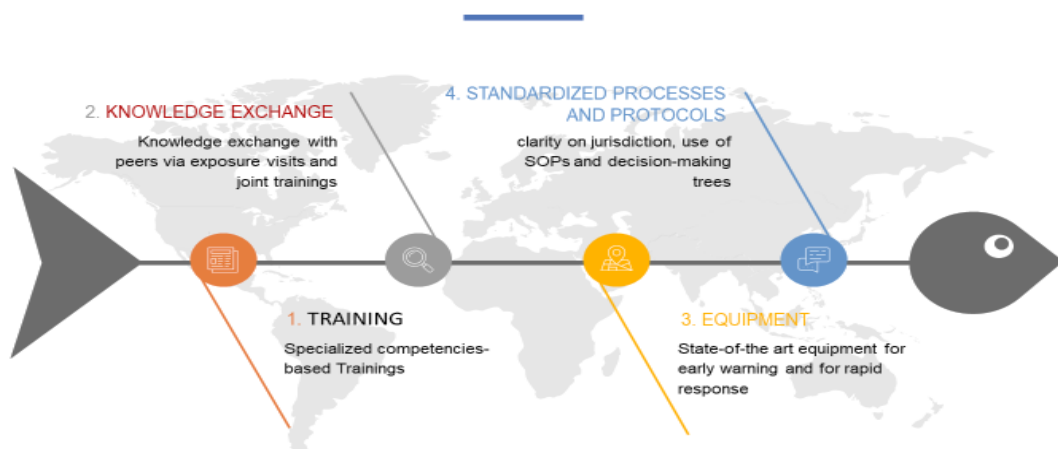
Ideal will be to implement the trainings jointly by the state forest training institutions, with the training institutions from disaster management, NDRF/ SDRF, Civil Defence, Home Guards training institutions.

Trainers/ Resource persons can be identified based on both their expertise and availability. A rolling roster of officers/experts, who have been trained and certified in using participatory training methods, will be developed and maintained at state/division level. These trainers will undergo refresher courses on training methods via 'Training of Trainers' each year at the above state level / national training institutions such as IGNFA, WII, CASFOS, NIRD, NAARM.

Trainings of RRTs, and also selected trainings of PRTs will be conducted using state-of-the-art innovative hands-on and competencies-based training methods such as mock drills/simulation exercises, conducted together with the railways, police, panchayats and disaster management department, on a monthly basis, in all HWC hotspots. Joint training of the response teams sharing the same landscape will be conducted both in inter-state and also intra-state landscapes. All response teams will use the mobile app to document their work. This will not only ensure ease of communication but also in future, help conduct trend analyses of operations. This also will facilitate self-learning, and also serve as a TNA.

3.2. Village/ward level Primary Response Teams (Community PRTs)

The training of the village/ward Community PRT members will aim to strengthen a common understanding of HWC issues and mitigation measures, in line with the species-specific Guidelines and HWC-MAP of the division. The training will gear the Community PRTs on preparedness for handling HWC issues in their area as first responders, medical first



² Competencies are demonstrated behaviours that lead to success. Competencies have been described in the National Training Policy (2012) of India to encompass knowledge, skills and behaviour, which are required in an individual for effectively performing the functions of a post.

response, control room procedures, law and order management, crowd / mob management and to act as the key source of information in the village/location.

The PRT training will address technical competencies, competencies for promoting harmonious co-existence, and competencies for effectiveness and efficiency of the PRT members, along with role clarity and process-clarity.

At the end of each Community PRT training, a brief two-hour dialogue between the panchayat representatives and the PRT members is recommended. This will bring all panchayat-level stakeholders on one platform, thus strengthening the collective ownership of PRTs.

It is expected that the training, implemented using the participatory and inclusive approach, should enable the Community PRT members to assist panchayats and work together with RRTs to enhance the overall efficiency and effectiveness of the mitigation measures.

Community PRT trainings, will preferably be implemented by the state/ district training institutions of Home Guards, Civil Defence, Police, rural development and Panchayati raj / agriculture, with resource persons drawn from Home Guards, Civil Defence, SFDs/ forest training institutions conducting trainings for the RRTs.

It is critical that the curriculum, training approach and institutional networking is aligned for the trainings of RRTs and PRTs, and this can be achieved at the platforms such as district-level Coordination Committee (DLCC), state-level Coordination Committee (SLCC) or the landscape-level forum.

There will be specialised trainings for the members of the sub-groups in section 2.5.2, implemented by specialized agencies. These members will be certified to be able to implement the tasks that are outlined for the sub-teams.

4. COMPETENCIES NEEDED FOR TASKS AND ACTIVITIES THAT THE RESPONSE TEAMS ARE REQUIRED TO CARRY OUT:

4.1. Overview of Curriculum Framework for three response teams

Tables 1, 2 and 3 provide a snapshot of the curriculum framework for the three response teams, in line with the role and responsibilities they are expected to carry out, and the competencies required to do such tasks.

The tables only provide a framework for the trainings. Detailed contents of the trainings will be dependent on the threats for the respective division/ landscape, as identified during the process of Threat Risk Assessment.

The framework on next pages provides:

- an overview of the recommended learning outcomes
- possible training contents
- recommended training methods to ensure addressing the desired competencies (conventional training methods such as lecture and presentations are not appropriate to train response teams, and will be used only to provide the necessary conceptual inputs)

- an operational insight into the possible breakdown of the training programme cycle into training events, with suggested titles and durations for each response team. This is a flexible section, where, depending on the availability of time and resources, several trainings can be clubbed together, while maintain the rigour as indicated by the learning outcomes. At the same time, depending on the intensity of specific type of conflict, one training can also be split into components to enhance the focus, and implemented over longer duration. However, all such modifications will be done in line with the competencies being addressed and achievement of the learning outcomes.

It is important to note here that each training event can focus on a specialized field craft, and in these tables is named after that, viz. Training on Early Warning and Rapid Response, Use and maintenance of Drone, etc. However, each training should address all key competencies in a systematic manner. Approximately, 50% time should be spent on thematic issue, and the rest of the time will be spent on other competencies: competencies for harmonious co-existence, work effectiveness and especially communication and leadership.

4.2. Curriculum Framework for Division-level Rapid Response Teams:

Team	Required Competencies based on job profile	Learning Outcomes
Division RRT	<p>Has knowledge and skills on wildlife: including behaviour and biology of key wildlife species in conflict in the area; Understanding of the socio-economic and cultural dimension of wildlife management; legal and policy regime for HWC mitigation; Proficiency in field craft of tracking, capturing and translocation of wild animals as per SOPs; Proficiency in the use of relevant equipment and new technology required in capture and translocation of a wild animal as per the SOPs; Proficiency in research and monitoring of HWC; Documentation and report writing as per the SOPs</p>	<p>At the end of the training programme cycle, the participants will be able to*:</p> <p>(*all participants will be assessed for these learning outcomes at the end of the training)</p> <ul style="list-style-type: none"> - Illustrate concepts and issues in wildlife management and HWC mitigation and key drivers, pressures and prevention measures using a landscape approach - Differentiate between various HWC scenarios based on landscape, location, species involved, and community involved - Analyse the effectiveness and wildlife-friendliness of existing and potential HWC mitigation measures, and make a systematic plan for HWC mitigation in the area - Describe the success factors required for receiving cooperation from other sectors and stakeholders in mitigating HWC - Analyse legal opportunities and limitations in conflict management - Demonstrate proficiency in implementing ‘early warning and rapid response’ system for mitigating HWC - Demonstrate (in a simulation) animal capture and rescue methods and their applicability to different species - Draw from experiences and skills of other RRT members from the landscape - Demonstrate skills to train Range and Community PRTs, forest watchers and daily wage frontline staff on HWC issues - Articulate technical information to others in language that is clear, concise, and easy to understand - Demonstrate leadership, communication, decision-making and crisis management skills, consensus building skills in a simulated situation on human wildlife conflict - Outline an inclusive strategy and action plan on resource management in their area of work, to achieve the maximum possible efficiency and effectiveness to mitigate HWC - appreciate the need for their continuous self-efforts for getting future ready vis-à-vis human wildlife conflict mitigation in India - Appreciate their roles in mitigating HWC in their respective areas
	<p>Has skills to promote harmonious coexistence: Communicates effectively with the local humans and other departments and sectors for effective implementation of capture and translocation operations; Negotiation, facilitation and conflict management skills; Effectively implements the SOP; Exhibits leadership and problem-solving skills, with colleagues and with external stakeholders, for effective and efficient operations; Maintains self-awareness, self-control and empathy in crisis situations</p>	
	<p>Work effectiveness: Commitment and integrity; Adaptive decision-making as per the SOP and dynamic situation in field; Result orientation; Accountability; Planning and coordination skills; Ability to manage resources efficiently; Ability to manage crisis situations effectively</p>	
	<p>Competencies for innovation and learning: Pattern recognition; Innovation; Desire for further knowledge; Change orientation; Critical thinking</p>	

Training Content	Training methods, instruments and Material	Training Programme Cycle*	Time (days)
<p>Drivers, Pressures, State, Impact and Response, HWC in development context, Ecology and behaviour of key wildlife species in conflict - elephant, leopard, wild boar, tiger, crocodile, rhesus macaque, bonnet macaque, sloth bear, blackbuck, nilgai, snakes; Legal scenario regarding HWC mitigation, policies of forest and other relevant sectors, Guidelines and Standard Operating Protocols (SOPs), Socio-economic and cultural dimension of wildlife management; An overview of mitigation measures (short-term and long-term); Conflict hotspots; Field craft of tracking, capturing and translocation of wild animals as per SOPs; Use of relevant equipment and new technology, Key issues and procedures involved in capturing of wild animals in conflict, Post-capture management of animals in conflict; Occupational safety and health; Research and monitoring methods; First aid; Wildlife Population management; Use of Geographic Information System (GIS) in HWC management; Documentation and reporting process and formats</p>	<p>Expert inputs and discussion, Knowledge café, Self-study assignments followed by Quiz, Thematic Champions, Case studies, Practice Café</p> <p><i>Facilitator's Guide; Learning Journal; Background reading material (Modules); additional exercise material (handouts)</i></p>	<p>Training 1: Early Warning and Rapid response</p>	2
		<p>Training 2: Use and maintenance of rescue equipment</p>	1
		<p>Training 3: Field craft on Leopard monitoring, tracking and rescue operation <i>(Joint with other RRTs and PRTs)</i></p>	3
		<p>Training 4: Field craft on elephant monitoring, tracking and rescue operation <i>(Jointly with other RRTs and PRTs)</i></p>	3
<p>Diagnosing the problem; Conceptualizing a project/plan; Implementing a planning process, taking an inclusive and participatory approach; Stakeholder mapping; Occupational health and safety; Participatory and inclusive implementation of mitigation plan and measures; Communication skills; Leadership skills; Incidence Reporting and reflections for SOP; Meditative techniques for strengthening self-awareness and empathy</p> <p>Approach, methods and tools for enhancing engagement with media; On ground understanding of tools and humans's perceptions for managing crowds during mitigation operations</p>	<p>Expert inputs, Reflection sessions, Role plays, Simulations, Mock drills, Real-life joint drills with participants of other sectors and community, Coaching-mentoring, Continuous competencies development Plan, Case studies, Action Café</p> <p><i>Simulation scenarios, Case studies</i></p>	<p>Training 5: Emergency preparedness training <i>(Joint training with DM, Police, Fire Brigade, Doctors for First Aid)</i></p>	3
		<p>Training 6: Snake handling and rescue <i>(Jointly with PRTs)</i></p>	2
		<p>Training 7: Capture and handling of other animals <i>(Specialized training)</i></p>	3
<p>Developing and maintaining a decision-making system within RRT; Time and work-flow skills; Coordination with PRTs and other departments; Different situations of HWC to be addressed by RRTs, and development of plans towards these situations; Resource management plans with gender-inclusive approach; Crisis management plans</p>	<p><i>Simulation scenarios, Case studies</i></p>	<p>Training 8: Post-capture management of animals <i>(Specialized training)</i></p>	3
		<p>Training 9: Simulation with PRTs (Joint training with PRTs and other stakeholders)</p>	3
<p>Techniques for conceptual analysis and problem analysis; Brainstorming on key elements of new/existing plans and Guidelines for continuous innovation, common field situations and how to address these</p>		<p>Training 10: Use and maintenance of Drones <i>(Specialized training)</i></p>	5

4.3. Curriculum Framework for Range-level Rapid Response Teams:

Team	Required Competencies based on job profile	Learning Outcomes
Range RRT	<p>Has knowledge and skills on wildlife: including behaviour and biology of key wildlife species in conflict in the area; Understanding of the socio-economic and cultural dimension of wildlife management, and legal and policy regime for HWC mitigation; Proficiency in field craft of tracking, and handling minor situations as per SOPs; Proficiency in the use of relevant equipment and new technology required in tracking and monitoring of wild animals; Proficiency in research and monitoring of HWC; Documentation and report writing as per the SOPs</p>	<p>At the end of the training programme cycle, the participants will be able to*: (*all participants will be assessed for these learning outcomes at the end of the training)</p> <ul style="list-style-type: none"> • Illustrate concepts and issues in wildlife management and HWC mitigation and key drivers, pressures and prevention measures using a landscape approach • Differentiate between various HWC scenarios based on landscape, location, species involved, and community perception on each scenario • Analyse the effectiveness and wildlife-friendliness of existing and potential HWC mitigation measures, and make a systematic plan for HWC mitigation in the area • Describe the success factors required for receiving cooperation from other sectors and stakeholders, and Community PRTs in mitigating HWC • Analyse legal opportunities and limitations in conflict management • Demonstrate proficiency in implementing ‘early warning and rapid response’ system for mitigating HWC • Draw from experiences and skills of other Range RRT members from the landscape • Demonstrate skills to train Community PRTs on HWC issues • Articulate technical information to others in language that is clear, concise, and easy to understand • Demonstrate leadership, communication, decision-making and crisis management skills, consensus building skills in a simulated situation on human wildlife conflict • Outline an inclusive strategy and action plan on resource management in their area of work, to achieve the maximum possible efficiency and effectiveness to mitigate HWC • Appreciate the need for continuous self-effort to get future-ready vis-à-vis HWC mitigation • Appreciate their specific roles in mitigating HWC in their respective areas
	<p>Has skills to promote harmonious coexistence: Communicates effectively with the local humans, Community PRTs, and other departments and sectors, for effective monitoring of animals and maintenance of mitigation structures; Negotiation, facilitation and conflict management skills; Effectively implements the SOP; Exhibits leadership and problem-solving skills, with colleagues and with external stakeholders, for effective and efficient operations; Maintains self-awareness, self-control and empathy in crisis situations</p>	
	<p>Work effectiveness: Commitment and integrity; Adaptive decision-making as per the SOP and dynamic situation in field; Result orientation; Accountability; Planning and coordination skills; Ability to manage resources efficiently; Ability to manage crisis situations effectively</p>	
	<p>Competencies for innovation and learning: Pattern recognition; Innovation; Desire for further knowledge; Change orientation; Critical thinking</p>	

Training Content	Training methods, instruments and Material	Training Programme Cycle*	Time (days)
<ul style="list-style-type: none"> Drivers, Pressures, State, Impact and Response, HWC in the development context; Ecology and behaviour of key wildlife species in conflict – elephant, leopard, wild boar, tiger, crocodile, rhesus macaque, bonnet macaque, sloth bear, blackbuck, nilgai, snakes; Legal scenario regarding HWC mitigation; Policies of forest and other relevant sectors, Guidelines and SOPs; Socio-economic and cultural dimension of wildlife management; Overview of mitigation measures (short-term and long-term); Conflict hotspots; Field craft of tracking and monitoring of wild animals as per SOPs; Handling snakes; Use of relevant equipment and new technology; Occupational safety and health; Research and monitoring methods; Engaging local communities and Community PRTs in invasive species and forest fire management; First Aid; Use of GPS in HWC management; Documentation and reporting process and formats 	<ul style="list-style-type: none"> Expert inputs and discussion, Knowledge café, Self-study assignments followed by Quiz, Thematic Champions, Case studies, Practice Café Facilitator's Guide; Learning Journal; Background reading material (Modules); additional exercise material (handouts) 	<p>Training 1: Early Warning and Rapid response</p> <p>Training 2: Use and maintenance of rescue equipment</p> <p>Training 3: Field craft on Leopard monitoring, tracking and rescue operation (<i>Jointly with other RRTs and PRTs</i>)</p> <p>Training 4: Field craft on elephant monitoring, tracking and rescue operation (<i>Jointly with other RRTs and PRTs</i>)</p>	<p>2</p> <p>1</p> <p>3</p> <p>3</p>
<ul style="list-style-type: none"> Diagnosing the problem; conceptualizing a project/ plan; Implementing a planning process taking an inclusive and participatory approach; Stakeholder mapping; Occupational health and safety; Participatory and inclusive implementation of mitigation plans and measures; Communication skills; Leadership skills; Incidence Reporting and reflections for SOP; Meditative techniques for strengthening self-awareness and empathy Approach, methods and tools for enhancing engagement with media; On ground understanding of tools and humans's perceptions for managing crowds during mitigation operations 	<p>Expert inputs, Reflection sessions, Role Plays, Simulations, Mock drills, Real-life joint drills with participants of other sectors and community, Coaching-mentoring, Continuous competencies development plan, Case studies, Action Café</p>	<p>Training 5: Emergency preparedness training (<i>Joint training with DM, Police, Fire Brigade, Doctors for first aid</i>)</p> <p>Training 6: Snake handling and rescue (<i>Jointly with PRTs</i>)</p> <p>Training 7: Invasive species and their management (<i>Joint with Range RRT and other Community PRTs</i>)</p>	<p>3</p> <p>2</p> <p>2</p>
<ul style="list-style-type: none"> Developing and maintaining a decision-making system within RRT; Time and work-flow skills; Coordination with PRTs and other departments; Different situations of HWC to be addressed by RRTs and development of plans towards these situations; Resource management plans with gender-inclusive approach, crisis management plans 	<p>Simulation scenarios, Case studies</p>	<p>Training 8: Forest fire management (<i>Joint with other Range RRTs and Community PRTs</i>)</p> <p>Training 9: Simulation with PRTs (<i>Joint training with PRTs and other stakeholders</i>)</p>	<p>2</p> <p>2</p>
<ul style="list-style-type: none"> Techniques for conceptual analysis and problem analysis; Brainstorming on key elements of new/existing plans and Guidelines for continuous innovation, common field situations and how to address these 		<p>Training 10: Crowd management (<i>Specialized training with Community PRTs and RRTs</i>)</p>	<p>2</p>

4.4. Curriculum Framework for Village/Ward-level Primary Response Teams (Community PRT):

Team	Required Competencies based on job profile	Learning Outcomes	Training Content
Community PRT	<p>Has knowledge and skills on wildlife: including behaviour and biology of key wildlife species in conflict in the area; Legal and policy regime for HWC mitigation; Proficiency in the use of relevant equipment; Documentation</p>	<p>At the end of the training programme cycle, the participants will be able to*: (*all participants will be assessed for these learning outcomes at the end of the training)</p> <ul style="list-style-type: none"> Outline the concepts and issues in wildlife management and HWC mitigation and key drivers, pressures and prevention measures using a landscape approach Differentiate between different conflict scenarios based on landscape, location, species involved 	<ul style="list-style-type: none"> Ecosystem services arising out of biodiversity and wildlife; Livelihood security and wildlife; HWC in overall development context and its linkages with SDGs and development schemes; Drivers, Pressures, State, Impact and Response on HWC taking a landscape approach; Need for holistic approach to HWC mitigation Ecology and behaviour of key wildlife species in conflict – elephant, leopard, wild boar, tiger, crocodile, rhesus macaque, bonnet macaque, sloth bear, blackbuck, nilgai, snakes; Overview of mitigation measures (short-term and long-term); invasive species and their management; Forest fire management; Occupational safety and health; First aid, Use of GPS in HWC management; Documentation process and formats
	<p>Has skills to promote harmonious coexistence: Communicates effectively with members of forest department and other response teams for effective planning and implementation of mitigation measures; Exhibits leadership and problem-solving skills, Maintains self-awareness, self-control and empathy in crisis situations</p>	<ul style="list-style-type: none"> Analyse the effectiveness and wildlife-friendliness of existing and potential HWC mitigation measures, and contribute to a systematic plan for HWC mitigation in the area Demonstrate leadership, communication, decision-making and crisis management skills, consensus building skills in a simulated situation on HWC 	<ul style="list-style-type: none"> Diagnosing the problem and communicating; Participatory and inclusive implementation of mitigation plans and measures; Communication skills; Leadership skills, Incidence reporting, Meditative techniques for strengthening self-awareness and empathy Approach, methods and tools for enhancing engagement with Range RRTs
	<p>Work effectiveness: Commitment and integrity; Adaptive decision-making as per the SOP and dynamic situation in field; Result orientation; Accountability; Planning and coordination skills; Ability to manage resources efficiently; Ability to manage crisis situations effectively</p>	<ul style="list-style-type: none"> Demonstrate information analysis for effective communication to Range RRT, using specific communication tools Appreciate the need for their continuous self-efforts for getting future-ready vis-à-vis HWC mitigation 	<ul style="list-style-type: none"> Developing and maintaining decision-making system within Community PRT and with Range RRT; Different situations of HWC to be addressed by Community PRTs and development of plans towards these situations; Resource management plans with gender-inclusive approach, Crisis management plans
	<p>Competencies for innovation and learning: Pattern recognition; Innovation; Desire for further knowledge; Change orientation; Critical thinking</p>	<ul style="list-style-type: none"> Appreciate their specific roles in mitigating HWC in their respective areas 	<ul style="list-style-type: none"> Techniques for conceptual analysis and problem analysis; Brainstorming on key elements of new/existing plans and Guidelines for continuous innovation, common field situations and how to address these

Training methods, instruments and Material	Training Programme Cycle*	Time (days)
<ul style="list-style-type: none"> Expert inputs and discussion, Knowledge café, Self-study assignments followed by Quiz, Thematic Champions, Case studies, Practice Café • • <i>Facilitator's Guide; Learning Journal; Background reading material (Modules); additional exercise material (handouts)</i> 	Training 1: Basics of HWC and mitigation measures, EWRR, facilitation skills	1
	Training 2: Invasive species and their management (<i>Jointly with Range RRT and other Community PRTs</i>)	1
	Training 3: Establishment, assessment and monitoring of mitigation measures (<i>Jointly with Range RRT and other Community PRTs</i>)	1
	Training 4: Alternate crops – reducing the risk of HWC (<i>Jointly with PRTs of Landscape, and other committees, with ICAR</i>)	1
Expert inputs, Reflection sessions, Role Plays, Simulations, Mock drills, Real-life joint drills with participants of forest department and other departments, Case studies, Action Café <i>Simulation scenarios, Case studies</i>	Training 5: Emergency preparedness training (<i>Joint training with DM, Police, Fire Brigade, Doctors for First Aid</i>)	1
	Training 6: Forest fire management (<i>Jointly with Range RRT and other Community PRTs of landscape</i>)	1
	Training 7: Alternate livelihoods – reducing the risk of HWC (<i>Jointly with PRTs of Landscape, SHGs and other committees</i>)	1
	Training 8: Communication and facilitation skills, and community engagement (<i>Jointly with other Community PRTs from the Landscape</i>)	1
	Training 9: Simulation with PRTs (<i>Jointly with Range RRTs and other stakeholders</i>)	1
	Training 10: Crowd management (<i>Specialized training with Range RRTs and RRTs</i>)	1







Ministry of Environment, Forest and Climate Change
Government of India
2021

National Human–Wildlife Conflict Mitigation Strategy and Action Plan:

Legislative Framework for HWC Mitigation in India

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1. WHY CONSERVATION LAWS

Human activities are progressively reducing the planet's life supporting capacity and continue to deteriorate. Therefore, the need of the hour is to integrate conservation and development to ensure that the modifications to the landscape do indeed secure the survival and well-being of both humans and wildlife (WCS, 1980)

1.1 Historical Background

Conservation in India can be traced back to 3rd century B.C during the period of Emperor Ashoka. The first wildlife conservation law was enacted as Wildlife Birds Protection Act No X of 1887, restricted to Municipalities and Cantonment areas, which was subsequently modified as Wildlife Birds and Animals Protection Act No VIII of 1912 extending to the whole of British India.

1.2 Constitutional Safeguards

The following articles in the Constitution safeguard the interest of wildlife in the country:

Art.48-A: The state shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country

Art.51-A (g): It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures

Art.256 (7th Schedule): The 42nd Amendment shifted the subject of "Forests" and "Protection of wild animals and birds" from the State List to the Concurrent List

1.3 National Forest Policy

1.3.1 National Forest Policy, 1988: advocates the needs of wildlife conservation, and linking the protected areas by "corridors" in order to maintain genetic continuity.

1.3.2 Draft National Forest Policy, 2019: states that the "human wildlife conflicts" have escalated over the years due to combination of factors related to habitats and population of certain wildlife species within and outside forests.

1.4 National Wildlife Action Plan

The National Wildlife Action Plan (NWAP) (2017-2031) prescribes adopting a concerted approach to protection, conservation and management of wildlife throughout the country and recognizes that the human-wildlife conflict (HWC) has directly and indirectly impacted humans leading to growing antipathy amongst the humans towards wildlife. It also recognises that HWC in several cases has increased but the welfare of animals must be the primary consideration while managing conflict the release in the wild should be based on exigencies of the situation and species-specific consideration.

1.5 Sustainable Development Goals

Of the 17 Sustainable Development Goals (SDG), as far as HWC is concerned, the following goals are relevant:

Goal 1: End poverty in all its forms everywhere

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

1.6 Laws relevant for Conservation when dealing with HWC

The following legislations are considered relevant for conservation when dealing with HWC:

- Indian Forest Act 1927
- Forest Conservation Act 1980
- Wildlife Protection Act 1972
- Drugs and Cosmetics Act 1940
- Narcotics Drugs and Drugs Psychotropic Substances Act 1985
- Insecticides Act 1968
- Prevention of Cruelty to Animals Act, 1960
- Environment (Protection) Act, 1986
- Biological Diversity Act 2002
- Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006
- Indian Fisheries Act, 1897, and state-specific Marine Fisheries (Regulation) Acts
- Indian Arms Act 1959
- Indian Penal Code 1860

2.1 Key Definitions:

- a) "Animal" includes mammals, birds, reptiles, amphibians, fish, other chordates and invertebrates and also includes their young and eggs; (Section 2 (1))
- b) "Captive animal" means any animal, specified in Schedule I, Schedule II, Schedule III or Schedule IV, which is captured or kept or bred in captivity; (Section 2 (5))
- c) "Wild animal" means any animal specified in Schedules I to IV and found wild in nature; (Section 2 (36))
- d) "Wild life" includes any animal, aquatic or land vegetation which forms part of any habitat; (Section 2 (37)).
- e) "Habitat" includes land, water or vegetation which is the natural home of any wild animal; (Section 2 (15))
- f) "Land" includes canals, creeks and other water channels, reservoirs, rivers, streams and lakes, whether artificial or natural [marshes and wetlands and also includes boulders and rocks]; (Section 2 (17))
- g) "Hunting", with its grammatical variations and cognate expressions, includes: killing or poisoning of any wild animal or captive animal and every attempt to do so; capturing, coursing, snaring, trapping, driving or baiting any wild or captive animal and every attempt to do so; injuring or destroying or taking any part of the body of any such animal or, in the case of wild birds or reptiles, damaging the eggs of such birds or reptiles or disturbing the eggs or nests of such birds or reptiles; (Section 2 (16)).
- h) "Weapon" includes ammunition, bows and arrows, explosives, firearms, hooks, knives, nets, poison, snares and traps and any instrument or apparatus capable of anaesthetizing, decoying, destroying, injuring or killing an animal; (Section 2 (35))

- Indian Evidence Act 1872
- Criminal Procedure Code 1973
- Indian Easement Act 1982
- Land Acquisition Act 1894
- Electricity Act 2003
- Railways Act 1989
- National Highways Act 1956
- Disaster Management Act 2005

1.7 Implications and Synergy of various Legislations for HWC mitigation:

The synergy in various conservation laws having human wildlife interaction manifestation allows for investigation and addressing the issues and related processes in multi-dimensional way in order to get generalized and specific redressal measures.

2. WILDLIFE RELATED LEGISLATION

The Wildlife (Protection) Act 1972 is meant to provide for the protection of wild animals, birds and plants and for the matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country.

The provisions provided in this Act are relevant in the context of management of HWC. Wild Life (Protection) Act, 1972 as per Sections 63 and 64 provides for formulation of rules by the central as well as state governments respectively.

2.2 Dealing with the wild animals, wildlife and habitat

As per Section 9 of the Act, no person shall hunt any wild animal listed in Schedules I to IV except as provided under sections 11 and 12 of the Act.

The legal provisions providing permission for hunting wild animals; removal of wildlife and its habitat including action taken in the interest of wild animals and its habitat in order to address the HWC directly or indirectly is as under-

2.2.1 Permission for hunting of wild animals in certain cases

Hunting of wild animals is to be permitted in certain cases provided under section 11.

a) Schedule I animal

In case of Schedule I animal, if the Chief Wildlife Warden (CWLW) of any State is satisfied that such an animal has become dangerous to human life or is so disabled or diseased beyond recovery then s/he may, by order in writing and stating the reasons therefor, permit any person to hunt such animal or cause such animal to be hunted.

However, no order for killing can be passed unless the CWLW is satisfied that such an animal cannot be captured, tranquilised or translocated.

Also, no such captured animal shall be kept in captivity unless the CWLW is satisfied that such animal cannot be rehabilitated in the wild and reasons for the same are recorded in writing.

The process of capture or translocation, as the case may be, of such animal shall be made in such manner as to cause minimum trauma to the said animal.

b) Schedule II to IV

In case of wild animals specified in Schedule II to IV, CWLW or the Authorised Officer may permit for hunting or cause to be hunted such wild animal or group of animals in a specified area when not only the wild animal has become dangerous to human life or is so disabled or diseased as to be beyond recovery but also when it becomes dangerous to property (including standing crops on any land). All such orders for hunting must be in writing and must state the reasons for issuing such an order.

There is also a provision that the killing or wounding of any wild animal in self-defence or of any other person will not be an offence. However, the person must not be committing an offence when this act became necessary and such animal shall be Government property.



Explanation

The provision of according permission for hunting Schedule I animal can be invoked only by the CWLW for safe-guarding human life; differentiating the same from Schedules II to IV which could also be invoked by the Authorised Officer and could also include safe-guarding property (including standing crops on any land)

2.2.2 Designating Authorised Officer

As per Section 5 (2) of the WLPA, CWLW may with the previous approval of the state government, by order in writing, delegate all or any of his powers and duties under this Act except those under Section 11 (1) (a) to any officer subordinate to her/him [implying delegation of those powers and duties, authorised to CWLW alone under the Act excepting Section 11 (1) (a)].

However, as per Section 11 (1) (b), besides CWLW, WLPA also authorises Authorised Officer for the implementation of this section [implying no delegation of the powers but authorisation of powers to the Authorised Officer].

According to Section 5 (3) subject to any general or special direction given or condition imposed by the CWLW, any person 'authorised' by the CWLW to exercise any powers, may exercise those powers in the same manner and to the same effect as if they had been conferred on that person directly by this Act and not by way of delegation.



Explanation

As per the above section, the Authorised Officer (authorised by the CWLW (with due approval of the State Government) necessarily need not be subordinate to the CWLW within an organization but definitely would be subordinate for the purposes of the implementation of this Act

2.2.3 Killing or Injury of Wild animal

As per the spirit of Section 11 (1), no wild animal shall be killed unless all possible options of capturing, translocation and tranquilizing are exhausted. Provision has been made to provide for the killing of only such animal that has become dangerous to human life and property or is disabled or diseased beyond recovery in a specified area.

However, Section 11 (2) does provide for the killing and wounding in good faith of any wild animal in defence of oneself or any other person provided that when such defence becomes necessary, the person was not committing any act in contravention of any provisions of the WLPA or any rule or order made thereunder.

Also, as per Section 11 (3) any wild animal killed or wounded in defence of any person shall be the Government property.

2.2.4 Permission for Hunting (Special purpose)

Under Section 12, CWLW can grant permit, by an order in writing stating the reasons therefor, to hunt, subject to such conditions as may be specified therein, any wild animal specified in such permit for the purposes of education; scientific research; and scientific management in the context of HWC.

For the purposes of 'scientific management', it means either translocation of any wild animal to an alternative suitable habitat; OR population management of wildlife, without killing or poisoning or destroying any wild animal.

As regards to the grant of permit in respect of Schedule I wild animals, previous permission of the central government has to be obtained WHEREAS in respect of other Schedule wild animals, previous permission of the State government has to be obtained.



Explanation

In the context of HWC management, hunting under this section envisages capture and translocation without killing or poisoning or destroying any wild animal

2.2.5 Destruction/removal of Wildlife from Sanctuary and National Park

Any activity undertaken within the limits of a Wildlife Sanctuary (WLS) or National Park (NP) is in accordance with the approved Management Plan by the CWLW.

Any action needed beyond a Management Plan, which is not prescribed or contemplated and arises due to human wildlife conflict is covered under sections 29 and 35 (6) of the WLPA in respect of WLS and NP respectively.

The above sections authorize the CWLW to give permission to "destroy, exploit or remove any wild life including forest produce OR destroy or damage or divert the habitat of any wild animal OR divert, stop or enhance the flow of water into or outside the WLS / NP" with the prior approval of the state government in consultation with the State Board for Wildlife (SBWL) that such removal of wildlife from the WLS / NP or the change in the flow of water is for the "improvement and better management of wildlife therein".

As per the Proviso, the forest produce so removed may be used for meeting the personal *bonafide* needs of humans living in and around the WLS / NP and shall not be used for any commercial purpose.

The applicability of this section has been interpreted by the Hon'ble Supreme Court of India in W.P. (C) No. 202/1995: TN Godavarman Thirumalpad vs. Uol and Ors (IA 548). The Circular of the Central Empowered Committee of the Hon'ble Supreme Court dated 02.07.2004 stated that "In view of the above order, any non-forestry activity, felling of trees/bamboos, removal of biomass, miscellaneous construction activities, etc. in the protected area (PA) were not permissible without prior permission of the Hon'ble Supreme Court" implying a virtual ban on removal of any wildlife from a PA without the prior permission of the Supreme Court.

However, this order was partially modified by the Court later on, and the scope was clarified that any activity including the removal must be a part of a formal Working/Management Plan. Subsequently, the permission from Supreme Court was delegated to CEC in case of FCA cases, and NBWL in case of WLPA cases vide its order dated 05.10.2015.



Explanation

Thus, if any activity is planned in context of management of HWC within a WLS or NP which is not part of the Management Plan viz. creation of enclosures for soft release of animals, barricading some area, channelizing water from or towards a PA etc, prior approval from government and consultation with NBWL/SBWL will be required

2.2.6 Declaration of any wild animal as vermin

While power of placing any species in any schedule of WLPA is vested with central government in Section 61, Section 62 empowers the central government to place any wild animal other than those specified in Schedule I and Part II of Schedule II to be vermin for any area and for such period as may be specified therein and such wild animal shall be deemed to have been included in Schedule V (Vermin) so long as such notification is in force.



Explanation

As the power of notification is vested with central government, it will be incumbent upon the state forest department / government to place a scientifically fact-based proposal to the central government duly cleared by the SBWL / NBWL

2.2.7 Disposal of the hunted wild animal

As per Section 39 (1) (a) every wild animal, other than vermin, which is hunted under section/s 11 or 29 (1) or 35 (6) or kept or hunted in contravention of any provision of WLPA or any rule or order made thereunder or found dead or killed by mistake shall be the Government property.

However, the Act is silent about appropriation / disposal of the wild animals included in Schedule V under section 62. This becomes more complicated when the notification under section 62 is for a limited specified area and the same species in non-notified area attracts section 39.

It is therefore expedient on the state government while submitting the proposals for declaration of any wild animal as vermin to duly get the advice from the SBWL towards disposal of the hunted wild animal as the SBWL is mandated in formulation of the policy for conservation of wildlife; amendment of any Schedule; and protection of wildlife as per Sections 8 (a), (b) and (c) respectively.

Also, central government before declaration of any wild animal as vermin could seek the advice from the National Board for Wildlife (NBWL) towards disposal of the hunted animal as NBWL is mandated to promote conservation of wildlife; framing policies on the ways and means of promoting wildlife conservation; and suggesting measures for improvement thereto as per Sections 5-C (1), (2) (a) and (d) respectively.

2.2.8 Rehabilitation / Rescue of Wild animals

As per Proviso (2) of Section 11 (1) (a) of the WLPA, the first priority is to rehabilitate the captured wild animal into wild before taking into captivity.

As per Schedule 3 (7) of Rule 10 of Recognition of Zoo Rules, 2009, no zoo shall accept any rescued animal unless it has appropriately designed enclosure and upkeep facilities for the animal as well as facilities for keeping it in isolation during quarantine period.

Also, as per Schedule 3 (8) of Rule 10 of Recognition of Zoo Rules, 2009, whenever any zoo decides to accept any rescued animal for housing, a detailed report regarding the source from which the animal has been received, legality of its acquisition and the facilities available at the zoo for housing, upkeep and healthcare shall be sent to the CWLW of the state.

Provided that in case, the rescued animal pertains to an endangered species (Schedule I and II) a copy of the report shall also be sent to the Central Zoo Authority (CZA).



Explanation

As per NTCA's SOP (2013), under no circumstances, an injured / incapacitated tiger / leopard should be released back into the wild, and the same needs to be sent to a recognized zoo with the approval of the CWLW and the CZA. Such animals should be kept in a designated Rescue Centre of the Zoo

2.2.9 Measures in the interest of wildlife

As per Section 33 and 33-A of the WLPA, the CWLW is the authority who shall control, manage and maintain all WLS and NPs and for that purpose (HWC included) –

- a) shall take such steps as will ensure the security of wild animals
- b) may take such measures in the interest of wildlife as s/he may consider necessary for the improvement of any habitat
- c) may regulate, control or prohibit, in keeping with the interests of wildlife, the grazing or movement of livestock
- d) may take measures towards immunisation against communicable diseases of the livestock kept within 5kms of a WLS or NP



Explanation

The above measures are considered quite critical in the Management Plan prescriptions as well as in undertaking preventive measures towards HWC

2.2.10 Operation of other laws not barred

Nothing in the WLPA 1972 shall be deemed to prevent any person from being prosecuted under any other laws, for any act or omission that constitutes an offence against this Act or from being liable under such other law to any higher punishment or penalty than that provided by this Act.

3. FORESTRY-RELATED LEGISLATIONS

3.1 Prohibitions as per Indian Forest Act 1927 or various State Acts

As per Section 26 of the Indian Forest Act (IFA) 1927, various activities that may cause HWC directly or indirectly, have been prohibited in the reserved forests without permit viz. kindle fire, cattle trespass, tree-felling, removal of forest produce, hunting etc. Similar provision also exists in certain state-specific Acts (e.g., Tamil Nadu Forest Act 1882).

3.2 Development of Forests and Wildlife as per Forest Conservation Act 1980

As per Section 2 of the Forest Conservation Act (FCA) 1980, restrictions on the de-reservation of forests or use of forest land for 'non-forestry purpose' have been imposed, where, 'non-forestry purpose' specifically means breaking or clearing of any forest land or portion thereof for any purpose other than reforestation but does not include any work relating, or ancillary to, conservation, development and management of forests and wildlife.



Explanation

This provision could be used to maintain the contiguity of corridors for wildlife

3.3 Promoting Conservation as per Biological Diversity Act 2002

As per Section 41 of the Biological Diversity Act (BDA) 2002, every local body shall constitute a Biodiversity Management Committee (BMC) within its area for the purpose of promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats.



Explanation

The BMCs could always be involved in addressing the issues related to HWC in their jurisdictions

3.4 Declaration of critical wildlife habitat as per Scheduled Tribes & other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

As per Section 2 (a) of the Forest Rights Act (FRA), 2006, critical wildlife habitat means such areas of National Parks and Sanctuaries where it has been specifically and clearly established that such areas are required to be kept as inviolate for the purposes of wildlife conservation according to the procedural requirements as per Section 4 (1) and (2).

As per Section 4 (2) of the Act, the forest rights recognised under this Act in critical wildlife habitats of National Parks and Sanctuaries may subsequently be modified or resettled for the purposes of creating inviolate areas for wildlife conservation when it has been established under WLPA that the activities or impact of the presence of holders of rights upon the wild animals is sufficient to cause irreversible damage and threaten the existence of said species and their habitat.



Explanation

The above section is quite critical in addressing the HWC in the tribal settlements or forest enclaves

4. ANIMAL WELFARE-RELATED LEGISLATION

As per the explanation to proviso 11 (1) (a) of the WLPA 1972, it has been stated that the process of capture or translocation has to be made in such manner as to cause 'minimum trauma' to the said animal, which can be related to the 'cruelty' with reference to the Prevention of Cruelty to Animals Act (PCAA), 1960 and 'mischief' with reference to Indian Penal Code (IPC), 1860.

4.1 Welfare of animals under Prevention of Cruelty to Animals Act, 1960

In order to prevent the infliction of unnecessary pain or suffering on animals during capture or translocation of a wild animal, all possible care should be taken to ensure the safety and welfare of the animal and avoid all unnecessary cruelty.

As per Section 11 (1) of PCAA, certain acts of omissions and commissions in respect of animals that could be termed as cruelty include:

- beats, kicks, tortures or otherwise treats any animal so as to subject it to unnecessary pain or suffering;
- wilfully and unreasonably administering an injurious substance to any animal;
- confining any animal to a cage that does not permit it a reasonable opportunity of movement;
- keeping any animal chained or tethered for an unreasonable time or in unreasonable manner;
- conveying or carrying any animal in such a manner as to subject it to unnecessary suffering;

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



Explanation

To take maximum advantage of capture, the animals known to be indulging habitually in HWC or those playing a major role in HWC (e.g., unattached elephant bulls, alpha-monkeys, etc.) could form the main targets of capture. Translocation cages could be designed as per specifications of veterinary protocols and CZA manual

4.2 Invoking Indian Penal Code (IPC) 1860 for welfare of the Animals

Whoever with intent to cause, or knowing that s/he is likely to cause, wrongful loss or damage to the public or to any person, causes the destruction of any property, or any such change in any property or in the situation thereof as destroys or diminishes its value or utility, or affects it injuriously, commits "mischief"
IPC - Section 425.

As per Section 428 and 429 of the IPC, whoever commits mischief by killing, poisoning, maiming or rendering useless any animal or animals (including elephants) is liable for the punishment.

5. ENVIRONMENT-RELATED LEGISLATION

The Environment Protection Act (EPA) 1986 provides for the protection and improvement of environment and for matters connected therewith. The “Environment” as per EPA 1986 includes water, air and land and the inter-relationship that exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

5.1 EPA 1986: Provisions relevant for HWC

EPA 1986 vests the central government with powers to regulate activities in certain areas facing the environmental threats. This may have bearing on the HWC because of the human activities and related developments in certain areas and therefore, regulation of such activities is considered significant in the management of HWC.

Section 3 (1) of the EPA 1986 gives power to the central government to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of environment and preventing, controlling and abating environmental pollution.

To meet this objective, the central government as per Section 3 (2) (v) of the EPA 1986, can restrict 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;

As per Section 3 (3) of the Act, the central government may constitute an authority or authorities for the purpose of exercising and performing such of the powers and functions under section 5 and for taking measures referred to in section 3 (2).

Section 5 of EPA 1986 empowers the central government to issue directions to any person, officer or authority to comply with such directions as per Rule 4 of the EPR 1986.

Section 5 (1) of the Environment (Protection) Rules (EPR) 1986 states that the central government can prohibit or restrict the location of industries and carrying on of processes and operations in different areas on the basis of considerations such as:

- the biological diversity of the area which needs to be preserved (clause v)
- environmentally compatible land use (clause vi)
- proximity to a protected area notified under WLPA 1972 (clause vii)
- any other factor as may be considered by the central government to be relevant to the protection of the environment in an area (clause x)

The above provisions and rules can be relevant in framing a long-term strategy for avoidance of HWC by facilitating co-existence through regulating land use in the areas of potential HWC due to proximity to habitats and scope of fragmentation due to certain land uses, which may have relevance in addressing HWC issues such as:

- Regulating cropping pattern in high conflict zones
- Animal mortality on Railway tracks
- Mining in high conflict zones
- Infrastructure development in high conflict zones.

5.2 Eco-Sensitive Zone (ESZ) around protected areas

In exercise of the powers conferred by Section 3 (1) read with clause (v) and clause (xiv) of section 3 (2) and section 3 (3) of the EPA, 1986, the central government has been empowered to issue draft notification as required under Rule 5 (3) of the EPR, 1986, the ESZ specifying the area and extent.

Concept of ESZ near PAs had been developed based on these provisions, for the purpose of conservation of wildlife where the habitats extend beyond the forests and where some areas outside PAs are needed to function as “shock absorbers”. Through the ESZ concept and use of these provisions we can have more effective interface with the fringe communities in adopting the land use practices particularly crops, which would not exacerbate HWC, and planning infrastructure and dwellings in areas with threats of HWC.

5.2.1 Development of Zonal Master Plan for ESZ relevant to HWC

The state government shall for the purpose of effective management of the ESZ, prepare a Zonal Master Plan in consultation with local humans and line departments, integrating environmental and ecological considerations and adhering to the stipulations given in the notification for approval of competent authority in the state government.

The Zonal Master Plan shall provide for restoration of denuded and degraded areas, conservation of existing water bodies, management of catchment areas, watershed management, groundwater management, soil and moisture conservation, needs of local community and such other aspects of the ecology and environment that may have relevance to the HWC.

The Zonal Master Plan shall also regulate development in ESZ and adhere to prohibited, regulated activities and also ensure and promote eco-friendly development for security of local communities' livelihood.

6. DRUGS-RELATED LEGISLATION

The DFO/ Wildlife manager coordinating the HWC management in the field along with the Veterinary Officer should be aware of various sections and legal implications under Drugs and Cosmetics Act (1940), Narcotic Drugs and Psychotropic Substance Act (1985) and various related Acts and Rules applicable in relation to the possession and use of such drugs.

6.1 Drugs and Cosmetics Act 1940

The Drugs and Cosmetics Act 1940 is to regulate the import, manufacture, distribution and sale of drugs and cosmetics. Drug includes all medicines for internal or external use of human beings or animals and all substances intended to be used for or in diagnosis, treatment, mitigation or prevention of any disease or disorder in human beings or animals.

Section 5 of the Drugs Act provides for constitution of a Board to be called 'Drugs Technical Advisory Board' (DTAB) to advise the central government and state governments on technical matters arising out of the administration of Drugs Act and to carry out other functions assigned to the said Governments by the said Act.

As per Section 26-A of the Act, central government has the powers to regulate, restrict or prohibit, manufacture, etc., of drug and cosmetic in public interest.

Under the Drugs Act, the central government, in exercise of its rule making power conferred on it by Sections 6 (2), 12, 33 and 33-N, has made 'The Drugs and Cosmetics Rules, 1945'. The central government in consultation with the DTAB may amend any Rule in the interest of wild animals.



Explanation

central government had banned / prohibited manufacture, sale and distribution of Diclofenac and its formulations for animal use, by issuing a Notification G.S.R.499 (E) dated 04.07.2008 to safeguard vulture population

6.2 The Insecticides Act 1968

The Insecticides Act 1968 is an Act to regulate the import, manufacture, sale, transport, distribution and use of insecticides with a view to prevent risk to human beings

or animals (including wildlife), and for matters connected therewith. The insecticide includes any substance specified in the Schedule or any substances (including fungicides and weedicides) as the central government in consultation with the Central Insecticides Board may notify.

There is prohibition on the import and manufacture (Section 17) and sale (Section 18) of certain insecticides not registered under the Act.

As per Section 27 of the Act, the central government or the state government is of opinion that the use of any insecticide is likely to involve such risk to human beings or animals (including wildlife) as to render it expedient or necessary to take immediate action, then the Government may by notification prohibit the sale, distribution or use of the insecticide, in such area, to such extent and for such period (not exceeding sixty days) as may be specified in the notification pending investigation into the matter.



Explanation

Many insecticides, pesticides etc used may have detrimental effect on the wild animals and could directly lead to HWC

6.3 Narcotic Drugs and Psychotropic Substance Act 1985

The Narcotic Drugs and Psychotropic Substance Act 1985 (NDPS) is an Act to consolidate and amend the law relating to narcotic drugs, to make stringent provisions for the control and regulation of operations relating to narcotic drugs and psychotropic substances

As per Section 8 (c) of 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 tranship 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.

All prohibitions and restrictions imposed by or under Customs Act 1962 on the import into India, the export from India and transshipment of narcotic drugs and psychotropic substances shall be deemed to be prohibitions and restrictions imposed by or under the Customs Act, 1962 and the provisions of the Act shall apply accordingly.



Explanation

During tranquilizing operations, drugs such as Etorphine (M99), Xylazine, Ketamine, Narcan, Yohimbine etc are used and therefore the same shall be covered under the above Acts

6.4 Role of Veterinarians

The veterinarian should be aware of Section 31 of the Indian Veterinary Council Act, 1984, specifying standards of professional conduct and etiquette and a code of ethics for veterinary practitioners, which becomes relevant while dealing with the capture, treatment and translocation of wild animals during HWC.

7. CRIME AND PROCEDURE-RELATED LEGISLATION

As per Section 50 of the WLPA 1972, various procedures and steps have been prescribed in the prevention and detection of the offences.

The process in the investigation of the offences dealing with the HWC can be related to various provisions of Indian Penal Code (IPC) 1860, Criminal Procedure Code (CrPC) 1973 and Evidence Act 1872 including other Acts.

7.1 Applicability of Indian Penal Code 1860

As per Section 59 of the WLPA 1972, every officer exercising the powers under the Act shall be deemed to be a public servant within the meaning of section 21 of the IPC 1860. Therefore, the lawful authority of public servants could be enforced at the time of investigation.

7.1.1 Contempt of the Lawful Authority of Public Servants

During the course of investigation or for that matter dealing with the HWC case/s, the officer exercising powers under WLPA may also enforce sections 172 to 189 of IPC, as applicable:

- Absconding to avoid service of summons of other proceeding (s.172)
- Preventing service of summons or other proceeding, or preventing publication (s.173)
- Non-attendance in obedience to an order from public servant (s.174)
- Omission to produce document to public servant by person legally bound (s.175)
- Omission to give notice or information to public servant by person legally bound (s.176)
- Furnishing false information (s.177)
- Refusing to answer public servant authorised to question (s.179)
- Refusing to sign statement (s.180)
- Resistance to the taking of property by the lawful authority of a public servant (s.183)
- Obstructing public servant in discharge of public functions (s.186)
- Omission to assist public servant when bound by law to give assistance (s.187)
- Disobedience to order duly promulgated by public servant (s.188)
- Threat of injury to public servant (s.189)

7.1.2 Right of Private Defence

Though Section 11 (2) of the WLPA provides for the private defence of oneself or of any other person against the wild animal by killing or wounding but forest officials can also exercise their right of private defence under section 96 to 106 of the IPC for safeguarding forests and wildlife provided extent to which the right may be exercised within the ambit of section 99.

7.2 Applicability of Criminal Procedure Code 1973

As per Section 50 of the WLPA 1972, the officers have been empowered for entry, search, arrest and detention as part of investigation of the case.

7.2.1 Dealing with the Arrests

The procedure laid down in the following sections of CrPC may be followed while dealing with the arrests related to HWC:

- When police (forest officer) may arrest without warrant (s.41)
- Arrest how made (s.46)
- Search of place entered by person sought to be arrested (s.47)
- No unnecessary restraint (s.49)
- Person arrested to be informed of grounds of arrest and of right to bail (s.50)
- Search of arrested person (s.51)
- Power to seize offensive weapons (s.52)
- Person arrested to be produced before Magistrate or officer-in-charge (s.56)
- Person arrested not be detained more than twenty-four hours (s.57)

7.2.2 Compel Appearance and Production of Things

The procedure laid down in the following sections of CrPC may be followed while issuing summons for appearance and production of things while dealing with HWC case:

- Forms of summons and how served (s.61 and 62)
- Form of warrant of arrest and duration (s.70)
- Summons to produce document or other thing (s.91)
- When search warrant may be issued (s.93)



Explanation

As per section 21 of the CrPC, state government may appoint Special Executive Magistrates for such term as it may think fit, for particular areas or for the performance of particular functions (s.144) and confer on such Special Executive Magistrates such of the powers as are conferrable under this Code on Executive Magistrates, as it may deem fit, which is considered relevant in dealing with HWC cases

7.2.3 Maintenance of Public order and Tranquillity

During the HWC scenario, it is very essential to maintain public order and tranquillity by crowd management and therefore dispersal of unlawful assemblies and public nuisances including urgent cases of nuisance or apprehended danger is important.

As per Section 144 of CrPC, a District Magistrate, a Sub-divisional Magistrate or any other Executive Magistrate specially empowered by the state government may issue order in urgent cases of nuisance or apprehended behaviour, if such Magistrate considers that such direction is likely to prevent, or tends to prevent, obstruction, annoyance or injury to any person lawfully employed, or danger to human life, health or safety or a disturbance of the public tranquillity, or a riot, or an affray.

7.2.4 Investigation

The steps in the investigation followed by the police may also be followed by the forest officers within the ambit of section 50 of WLPA as under:

- Procedure for investigation (s.157)
- Report how submitted (s.158)
- Police officer's power to require attendance of witnesses (s.160)
- Examination of witnesses by police (s.161)
- Use of statements in evidence (s.162)
- No inducement to be offered (s.163)
- Recording of confessions and statements (s.164)
- Diary of proceedings in investigation (s.172)
- Report of police officer on completion of investigation (s.173)

7.2.5 Conditions requisite for initiation of proceedings

The following sections are relevant while dealing with HWC cases:

- Cognizance of offences by Magistrates (s.190)
- Prosecution for contempt of lawful authority of public servants (s.195)

7.3 Applicability of Indian Evidence Act 1872

As per Section 50 (9) of the WLPA 1972, any evidence recorded under section 50 (8) (d) of the Act shall be admissible in any subsequent trial before the Magistrate provided that it had been taken in the presence of accused person unlike the confession before the police officer under section 162 of CrPC.

The following sections are considered significant under Evidence Act while dealing with HWC cases:

- Relevancy of statements in maps, charts and plans (s.36)
- Opinions of experts (s.45)
- Facts bearing upon opinions of experts (s.46)
- Grounds of opinion, when relevant (s.51)
- Presumption as to maps or plans made by authority of Government (s.83)

7.4 Applicability of Arms Act 1959

As per Section 34 of the WLPA 1972, every person residing in or within 10 kms of any sanctuary or national park and holding a license granted under Arms Act 1959 for the possession of arms or exempted from the provisions of that Act and possessing arms shall register her/his name with the CWLW or the Authorised Officer and no new license shall be granted without the prior concurrence of the CWLW.

As per Section 51 (4) of the WLPA, where any person is convicted of an offence against this Act, the Court may direct that the license, if any, granted to such person under the Arms Act for possession of any arm with which an offence against this Act has been committed, shall be cancelled including making her/him ineligible for license for a period of five years.

In the case of possession of illegal arms, action may also be taken under Arms Act as under:

- Section 3 (Licence for acquisition and possession of firearms and ammunition) and/ or
- Section 7 (Prohibition of acquisition or possession of prohibited arms or ammunition)

8. LAND-RELATED LEGISLATION

8.1 Habitat Acquisition as per Land Acquisition Act 1894

As per Section 24 (2) (b) of the WLPA 1972, there is a provision to acquire land or rights, between the owner of such land or holder of rights and the Government, on payment of such compensation, as is provided in the Land Acquisition Act, 1894.



Explanation

Significant in declaration of Sanctuary and National Park

8.2 Conservation Easement as per Easement Act 1982

A 'conservation easement' is a voluntary, legal agreement that permanently limits uses of the land in order to protect its conservation values and allows landowners to retain ownership and management responsibilities for their land, but requires that they (and all future owners) observe certain prohibitions and limitations on development and use in order to protect the land's conservation values.

The applicability of the Act has restricted extent and recognizes two rights:

As per Section 4, an 'Easement' is a right which 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.

As per Section 52, a 'License' is a right where one person grants to another, or to a definite number of other persons, a right to do, or continue to do, in or upon the immovable property of the grantor, something which would, in the absence of such right, be unlawful, and such right does not amount to an easement or an interest in the property.



Explanation

The ecological contiguity of forest in a landscape is through the private agricultural lands, gram sabha lands and Government lands under the control of Revenue Department and Easement can be invoked for preserving the conservation value of any wildlife corridor

9. SECTORAL-RELATED LEGISLATIONS

As per the MoEF&CC D.O. No.2-12/2012-PE dated 14-6-2018, grave concern has been expressed that a number of wild animals were getting killed due to the accidents under and across power lines; on railway tracks; and on roads and highways. It has also been suggested to follow the Guidelines developed by the Wildlife Institute of India named "Eco-friendly measures to mitigate impacts of linear infrastructure on wildlife (WII, Dehradun, 2016)", duly approved by the Standing Committee of National Board of Wildlife, while designing new projects as well as dealing with the existing ones.

As many of the line departments are directly involved in mitigation and amelioration of the HWC issue, therefore we need to understand the relevant provision of their Acts.

9.1 Dealing with the Electrocutation cases under Electricity Act 2003

Large number of carnivores and herbivores get electrocuted every year due to the erection of lines in violation of Electricity Act besides unauthorised use of electricity connections, and electrocution from transmission lines passing through forest areas.

As per Section 135 (1) of the Electricity Act, whoever commits theft of electricity or dishonestly uses electricity for the purpose other than for which the usage of electricity was authorised is liable for the punishment under this Act.

As per Section 161 of the Act, if any accident occurs in connection with the generation, transmission, distribution, supply or use of electricity in or in connection with, any part of the electric lines or electrical plant of any person and the accident results or is likely to have resulted in loss of human or 'animal life' or in any injury to a human being or an animal, such person shall give notice of the occurrence and of any such loss or injury actually caused by the accident.



Explanation

All new proposals of power transmission lines should be in conformity to the WII Guidelines and cases of unauthorised use of electricity or any death of wild animal should be reported to the Electrical Inspector

9.2 Dealing with railway conflict cases under Railways Act 1989

There are rising incidences of animal injury and death from getting hit by locomotives while crossing railway lines.

As per Section 11 (a) of the Act, railway administration may, for the purposes of constructing or maintaining a railway, make or construct such temporary or permanent inclined-planes, bridges, tunnels, culverts, embankments, aqueducts, bridges, roads, lines of rail, ways, passages, conduits, drains, piers, cuttings and fences, in-take wells, tube wells, dams, river training and protection works as it thinks proper.

Also, as per Section 29 (2) (c), the central government may by notification make rules for regulating the mode in which, and the speed at which rolling stock used on railways is to be moved or propelled.



Explanation

At places where elephant corridors and railway tracks intersect, the construction of underpasses or overpasses can be planned to enable the animals to cross over without any difficulty as per WII Guidelines for linear structures. Besides, action could be pursued for reducing the train-speed in such tracts

9.3 Dealing with road accident cases under National Highways Act 1956

There are rising incidences of animal injury and death on National and State Highways due to fast moving vehicles. The sudden crossing of highways by animals is also a hazard for motorist and sometimes even when driving within permissible limits, accidents may occur.

As per Section 5 of the National Highways Act, it shall be the responsibility of the central government to develop and maintain in proper repair all National Highways; and by notification, the same may also be exercisable by the state government.



Explanation

WII linear infrastructure Guidelines should be followed in respect of both new as well as existing roads

9.4 Dealing with conflicts under Fisheries Act 1897 and State-specific Marine Regulation Acts

Certain species such as Sea turtle, Dugong and other freshwater and marine species face conflict with the fisherman as well as fishing practices in vogue impacting their breeding and survival and require mitigation measures. The legal provisions in the various Acts with conservation implications include -

As per Section 6 of the Fisheries Act 1897, various state government have been empowered to make rules prohibiting fishing in any specified water for two years.

As per various state-specific Marine Regulation Acts (10 maritime states / union territories), the regulation, restriction and prohibition of fishing in specified area and for specified period with regulation on the fishing vessel acts as a preventive measure towards conflict mitigation.



Explanation

During the Olive Ridley turtle breeding season in Tamil Nadu, there is ban on sea fishing under provisions of Tamil Nadu Marine Fishing Regulation Act, 1983

10. MITIGATION-RELATED LEGISLATION

10.1 Preparedness and Management under Disaster Management Act 2005

As per Section 2 (d) of the Act, 'disaster' means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes, or by accident or negligence, which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area.

As per Section 2 (e) of the Act, "disaster management" means a continuous and integrated process of planning, organising, coordinating and implementing measures that are necessary or expedient for (i) prevention of danger or threat of any disaster; (ii) mitigation or reduction of risk of any disaster or its severity or consequences; (iii) capacity-building; (iv) preparedness to deal with any disaster; (v) prompt response to any threatening disaster situation or disaster; (vi) assessing the severity or magnitude of effects of any disaster; (vii) evacuation, rescue and relief; (viii) rehabilitation and reconstruction.

10.2 State Disaster Management Authority and District Disaster Management Authority

Section 14 provides for the establishment of the State Disaster Management Authority (SDMA) and section 25

for the constitution of the District Disaster Management Authority (DDMA).

As per Section 30, the DDMA will act as the district planning, coordinating and monitoring body in accordance with the Guidelines laid down by NDMA and SDMA and will prepare the District Disaster Management Plan (DDMP) for the district as per section 31 and will also ensure that the Guidelines for prevention, mitigation, preparedness and response measures laid down are followed by all the departments of the state government at the district level and the local authorities in the district.



Explanation

HWC is also a natural phenomenon and the DDMA should take measures to reduce or mitigate conflict including capacity building

11. DEALING WITH DIFFERENT SPECIES IN CONFLICT

The specific sections (11(1)(a) and 11(1)(b), 12(bb), 29 and 62) and schedules (I or II to IV) of WLPA 1972 determine the competent authorities for the issue of orders when any species is in conflict.

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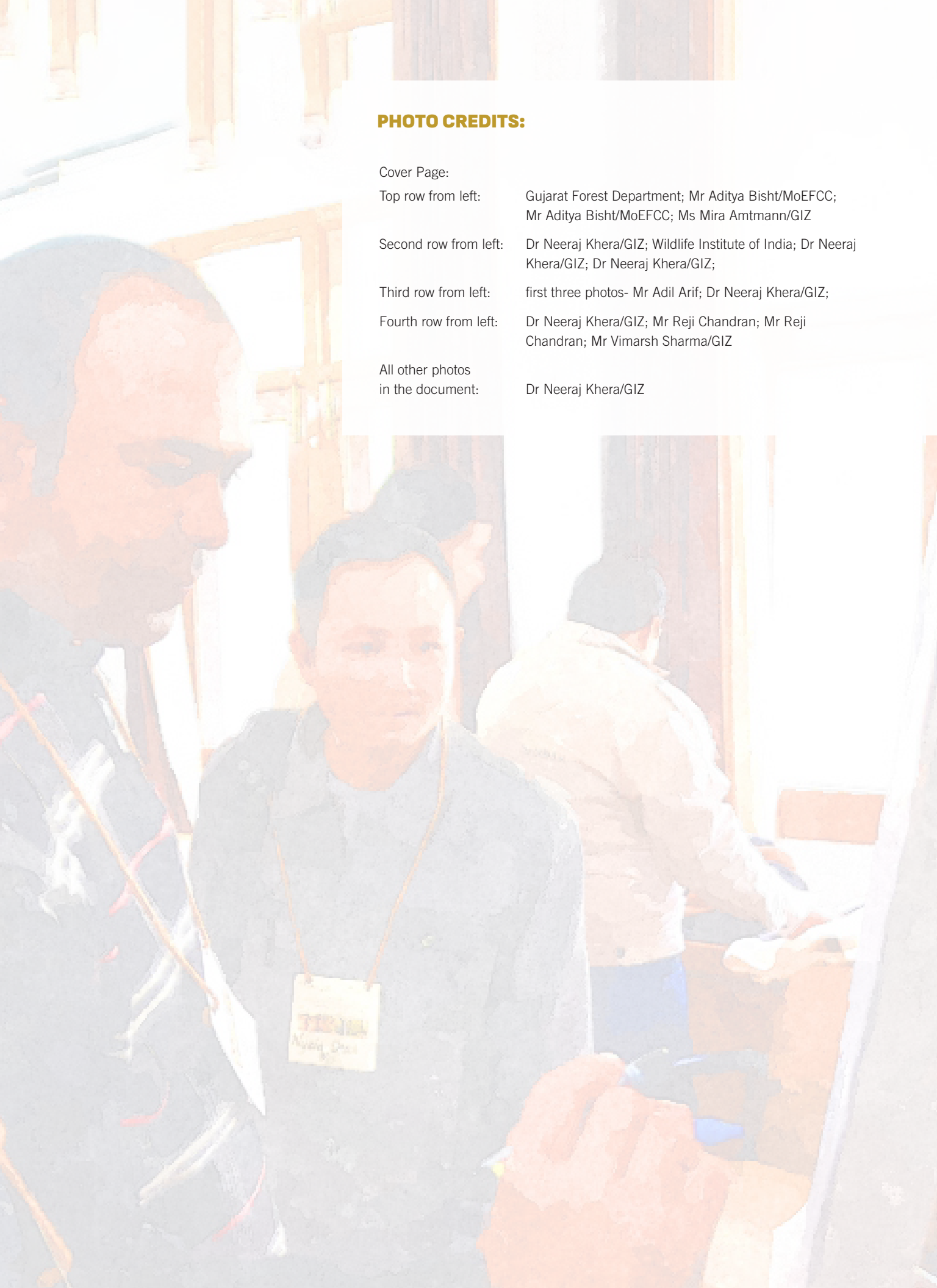
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