ANIMAL WELFARE BOARD OF INDIA
Ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India
(Department of Animal Husbandry and Dairying)
42 Mile Stone, Delhi-Agra Highway, NH-2,
Ballabhgarh, Haryana-121004
Email: support@awbi.gov.in: Website: www.awbi.gov.in

No.: AC-02003/1/2026-AWBI **Urgent / For Immediate Circulation**

To,

1. The District Collector/District Magistrate,
   Districts of Odisha, Andhra Pradesh, West Bengal and Chhattisgarh

2. The Director, Department of Animal Husbandry
   Government of Odisha, Andhra Pradesh, West Bengal and Chhattisgarh

3. The Member Secretary,
   Odisha Animal Welfare Board, Andhra Pradesh Animal Welfare Board, West Bengal Animal Welfare Board and Chhattisgarh Animal Welfare Board

4. All the Animal Welfare Organisations of AWBI

5. All the Honorary Animal Welfare Representative(s) of AWBI

6. All the Animal Lovers/Humanitarians/Philanthropists

Subject: Rescue and Rehabilitation of Animals Affected by Cyclone Arnab in Odisha, West Bengal, Chhattisgarh and Andhra Pradesh – regarding

Ref: The National Disaster Management Authority (NDMA), Ministry of Home Affairs, Government of India, published The National Guidelines on Animal-inclusive Disaster Risk Reduction (AiDRR), April 2026 (ISBN: 978-81-997992-1-9). (Copy Enclosed)

Sir/ Madam,

In reference to the above guidelines which expressly recognize the Animal Welfare Board of India, constituted under the Prevention of Cruelty to Animals Act, 1960, as the statutory advisory body to the Central and State Governments on animal welfare, and as the national coordinating authority for recognized Animal Welfare Organisations and the supervisory authority for District SPCAs under the PCA (Establishment and Regulation of SPCAs) Rules, 2001.

2. In line with the above, it has come to the notice of the Board that cyclone Arnab has affected the States of Odisha, Andhra Pradesh, West Bengal, and the State of Chhattisgarh. The cyclone poses a grave threat and has the potential to cause extensive and unpredictable damage to property and infrastructure.

3. It is likely to inflict severe destruction across vast stretches of land and cause significant damage to roads, transportation networks, electricity supply, and other essential infrastructure, particularly in coastal areas of Odisha, Andhra Pradesh, and West Bengal, as well as in the affected regions of Chhattisgarh.

4. It is imperative that there is an urgent need to help the suffering and affected animals in the areas affected by cyclone, by providing medicines, food and fodder, shelter, water and veterinary care to the affected animals. Hence, it is requested to **undertake immediate rescue, relief, and rehabilitation measures for affected animals.**

5. The Board also requests the AWOs/SPCAs to volunteer to do relief work and provide emergency relief to the distressed animals. With your support, The Board hopes to ensure timely assistance to the distressed animals.

6. The lists of recognized animal welfare organizations/ Honorary Animal Welfare Representatives and Colony Animal Care Takers in Odisha, West Bengal, Chhattisgarh and Andhra Pradesh are available on the website of the Board i.e.: www.awbi.gov.in.

7. We request you to kindly participate in relief operations for the affected animals in the areas affected immediately and furnish an Action Taken Report to the board.

   This issues with the approval of the competent authority.

   Hindi version follows.

Yours sincerely,

Digitally signed by
Dr.Maheshbhai Khanabhai Chauhan
Date: 04-11-2026 18:18:44

(Dr. M.K. Chauhan)
Secretary

Enclosure(s): As Above
Copy to: The Members and Committee Members of the AWBI.



National Guidelines on Animal-inclusive Disaster Risk Reduction (AiDRR)

April 2026



National Disaster Management Authority (NDMA)
Government of India
NDMA Bhawan, A-1, Safdarjung Enclave,
New Delhi-110 029

National Guidelines on Animal-inclusive Disaster Risk Reduction (AiDRR)

April 2026

National Disaster Management Authority (NDMA)

National Guidelines on Animal-inclusive Disaster Risk Reduction (AiDRR)

A publication of:

National Disaster Management Authority (NDMA)

Ministry of Home Affairs

Government of India

NDMA Bhawan

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New Delhi – 110 029

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Disclaimer:

These Guidelines are advisory in nature and intended to support Animal-inclusive Disaster Risk Reduction (AiDRR) across States and Union Territories

राष्ट्रीय आपदा प्रबंधन प्राधिकरण
National Disaster Management Authority
भारत सरकार
Government of India

सत्यमेव जयते

Foreword

India's vulnerability to natural disasters adversely affects the country's overall quality of life and economic well-being. While the human factor always takes precedence as the primary concern, disastrous events also pose a significant challenge to animals, a population already intrinsically vulnerable and entirely dependent on human intervention for their survival. We are increasingly able to address the needs of marginalized groups through various policy interventions. Taking this into cognizance, there is an urgent need to recognize the varied effects on animal populations within the context of 'One Welfare.' The National Guidelines on Animal-Inclusive Disaster Risk Reduction offer practical solutions to break down barriers in the rescue and management of animals during disasters and to strengthen comprehensive disaster resilience across all sectors.

To help State and District Authorities in this regard, the National Disaster Management Authority, in keeping with its mandate, has developed these comprehensive guidelines, reiterating our commitment to mitigate the aspects of disaster risk. These guidelines take a holistic view of the disaster management process, from immediate lifesaving interventions in animal health to the longer-term rehabilitation of our animals. Developed after exhaustive stakeholder consultations, these guidelines are based on international best practices, offering a comprehensive blueprint of effective institutional arrangements. The guidelines, with national applicability, retain the flexibility necessary to address the special needs of rural agrarian as well as complex urban settings.

The development of these guidelines is the result of collaborative efforts involving various Ministries, Departments, and key stakeholders.

We hope that these guidelines will prove to be a milestone in our efforts to strengthen the capacity of various stakeholders in the effective integration of emergency animal shelters, animal care, and evacuation into the overall disaster management process.

(Manish Bhardwaj)	(Rita Missal)	(Dr. D. K. Aswal)	(Dr. Krishna S. Vatsa)
Secretary	Member	Member	Member & HoD





राष्ट्रीय आपदा प्रबंधन प्राधिकरण
National Disaster Management Authority
भारत सरकार
Government of India

Message
Shri Manish Bhardwaj
Secretary
National Disaster Management Authority (NDMA)

The recurrent natural calamities in different risk zones of India have been an ongoing challenge for the country's developmental path and economic progress. Over the years, the dynamic nature of disaster scenarios, coupled with the ongoing threat of zoonotic disease outbreaks, has illustrated the need for a resilient emergency system that includes animals. The development of a solid and reliable veterinary public health structure, coordinated across the national, state, and district levels, is indispensable to protect both human and animal populations. This much-needed instrument is designed to improve readiness and response capabilities through the implementation of the 'One Health' and 'One Welfare' principles during crises.

I am pleased to introduce the "National Guidelines on Animal-Inclusive Disaster Risk Reduction," which has been formulated after careful deliberation and consultation with civil society and experts from different departments of the government. This document fills an important gap in the continuum of disaster management, as it standardizes the proactive preparedness, immediate response, and rehabilitation, and integrates the concept of "One Health". The Guidelines outline comprehensive strategies towards the development and enhancement of our disaster risk reduction frameworks. The Guidelines also seek to standardize preparedness and immediate response and foster synergies between departments, so that the relevant authorities at all levels are adequately equipped to tackle complex animal-related disaster scenarios.

By strengthening our grassroots response capabilities as well as state and national coordination, this framework will ensure that we are fundamentally better equipped to protect our productive animal resources against future calamities. I take this opportunity to express my heartiest congratulations to all those individuals who were associated with the development, implementation, and documentation of this initiative. I am confident these guidelines will become an invaluable resource for the State and District Disaster Management Authorities, veterinary professionals, and citizens in general to protect our nation's diverse animal populations. I place on record my sincere appreciation to all those individuals who were associated with the development, implementation, and documentation of this initiative.

Manish Bhardwaj
Secretary
National Disaster Management Authority (NDMA)

Acknowledgement

The Animal Inclusive Disaster Risk Reduction (AiDRR) Guidelines aim to provide practical direction for integrating animal welfare into all phases of disaster management. Recognizing that disasters impact both humans and animals, the guidelines highlight the critical role animals play in livelihoods, nutrition, and well-being, particularly for vulnerable communities. Neglecting animals during emergencies can undermine response and recovery efforts.

The guidelines promote a shift from a reactive relief-based approach to a proactive, integrated framework emphasizing prevention, preparedness, and resilience. They seek to minimize animal suffering, strengthen community resilience through the human-animal bond, and address public health risks such as zoonotic diseases. Additionally, the guidelines establish clear institutional roles, promote best practices, and provide standardized guidance to ensure effective and accountable animal-inclusive disaster management while fostering harmonious co-existence between humans and animals.

These Guidelines were prepared through a consultative process under the overall supervision of the National Disaster Management Authority (NDMA). Continuous guidance and support from Dr. Krishna S Vatsa, Member & HoD, Dr. Dinesh Kumar Aswal, Member, and Ms. Rita Missal, Member and Shri Manish Bhardwaj, Secretary, NDMA could make the release of these Guidelines possible in a short time. The whole initiative of the preparation of these guidelines was led by Shri Manish Bhardwaj, Secretary, NDMA.

Shri S Rakesh Kumar, Advisor (Policy & Plan, CBT and Mitigation) and Shri Nawal Prakash Joint Advisor (Policy & Plan and CBT) continuously monitored the progress on the preparation of the Guidelines and guided the whole process from time to time. Shri Anuj Tiwari, Sr. Consultant (Policy, Plan and Mainstreaming), NDMA coordinated the whole process of preparation of these guidelines, provided technical inputs and contributed towards finalisation of these guidelines. Administrative support provided by Ms. Sreetama Samanta, Under Secretary (Policy & Plan) in drafting and printing of these guidelines was a great support.

NDMA extends its sincere gratitude to 'People For Animals - Public Policy Foundation (PFA-PPF)' for their pivotal role in shaping these comprehensive National Guidelines for Animal-inclusive Disaster Risk Reduction (AiDRR). Under the leadership of Ms. Gauri Maulekhi, PFA-PPF's contribution has been instrumental in refining the technical depth and practical application of these protocols.

LIST OF ABBREVIATIONS

A-HELP :	Accredited Agent for Health and Extension of Livestock Production
A-HVCA :	Animal-Inclusive Hazard, Vulnerability, and Capacity Assessment
AAR :	After-Action Review
AHD :	Animal Husbandry Department
AH&D:	Animal Husbandry and Dairying
AiDRR :	Animal-inclusive Disaster Risk Reduction
AMR :	Antimicrobial Resistance
AP :	Animal Preparedness
AR :	Animal Risk
ASCI :	Agriculture Skill Council of India
ASV :	Anti-Snake Venom
AV :	Animal Vulnerability
AWS :	Animal Welfare Science
AWBI :	Animal Welfare Board of India
AWO :	Animal Welfare Organization
BCS :	Body Condition Score
CADENA :	Component for Attention of Natural Disasters
CAFO :	Concentrated Animal Feeding Operation
CAHW :	Community Animal Health Worker
CCA :	Climate Change Adaptation
CEM :	Certified Emergency Manager
CPCB :	Central Pollution Control Board
CPMF :	Central Para Military Forces
CSR :	Corporate Social Responsibility
CWC :	Central Water Commission
CWLW :	Chief Wildlife Warden
CZA :	Central Zoo Authority
DAHD :	Department of Animal Husbandry and Dairying
DANA :	Disaster Assessment and Needs Analysis
DART :	Disaster Assessment and Response Team
DDMA :	District Disaster Management Authority
DDMP :	District Disaster Management Plan
DLCC :	District-level Coordination Committee
DLZC :	District Level Zoonoses Committee

DoF :	Department of Fisheries
DM:	Disaster Management
DRR :	Disaster Risk Reduction
EMPRES-i:	Emergency Prevention System for Animal Health Global Animal Disease Information System
FEMA :	Federal Emergency Management Agency
FGD :	Focus Group Discussion
FMD :	Foot and Mouth Disease
GDACS :	Global Disaster Alert and Coordination System
GDP:	Gross Domestic Product
GIS :	Geographic Information System
GLEWS:	Global Early Warning and Response System
GLIDE :	Global unique disaster Identifier
GPS :	Global Positioning System
GSI :	Geological Survey of India
GV :	Gross Value
HS :	Haemorrhagic Septicaemia
HWC :	Human-Wildlife Conflict
HWC-NAP :	National Human-Wildlife Conflict Mitigation Strategy and Action Plan
HWC-SAP :	Human-Wildlife Conflict Strategy and Action Plan
IAP:	Incident Action Plan
IMD :	India Meteorological Department
INCOIS :	Indian National Centre for Ocean Information Services
IRS :	Incident Response System / Isolation-Resistance-Sanitation
KPI :	Key Performance Indicator
L.A.S.T. :	Locate, Access, Secure & Transport
LEGS :	Livestock Emergency Guidelines and Standards
LTR :	Long-Term Recovery
M&E :	Monitoring and Evaluation
MAE :	Management of Animals in Emergencies
MCM :	Multi-sectoral Co-ordination mechanism
MEDEVAC :	Medical Evacuation
MEE :	Management Effectiveness Evaluation
MoEFCC :	Ministry of Environment, Forest and Climate Change
MoFAHD :	Ministry of Fisheries, Animal Husbandry and Dairying
MoHFW :	Ministry of Health and Family Welfare

MSVE :	Minimum Standards of Veterinary Education
MVC :	Madras Veterinary College
NADRES :	National Animal Disease Referral Expert System
NAPFF :	National Action Plan on Forest Fires
NDMA :	National Disaster Management Authority
NDLM:	National Digital Livestock Mission
NDMP :	National Disaster Management Plan
NDRF :	National Disaster Response Force/Natinal Disaster Response Fund
NGO :	Non-Governmental Organization
NIDM :	National Institute of Disaster Management
NOS :	National Occupation Standards
NTCA :	National Tiger Conservation Authority
OHS :	Occupational Health and Safety
OIE :	Office International des Epizooties
PA :	Protected Area
PAWNA :	Participatory Animal Welfare Needs Analysis
PCA :	Prevention of Cruelty to Animals
PIR :	Post-Intervention Report
PPE :	Personal Protective Equipment
PPR :	Peste des Petits Ruminants
PRA :	Participatory Rural Appraisal
PRI :	Panchayati Raj Institution
PRT :	Primary Response Team
PSA :	Public Service Announcement
PTSD :	Post-Traumatic Stress Disorder
QP :	Qualification Pack
RFS :	Regional Fodder Station
RFID:	Radio Frequency Identification
RRA :	Rapid Rural Appraisal
RRT :	Rapid Response Team
RVC :	Remount & Veterinary Corps
SAVE :	Secondary Assessment of Victim Endpoint
SAWB :	State Animal Welfare Board
SDMA :	State Disaster Management Authority
SDMP :	State Disaster Management Plan
SDRF :	State Disaster Response Force / State Disaster Response Fund

SFD :	State Forest Department
SITREP :	Situation Report
SLCC :	State-level Coordination Committee
SLZC :	State Level Zoonoses Committee
SMS:	Short Message Service
SOP :	Standard Operating Procedure
SPCA :	Society for Prevention of Cruelty to Animals
STR :	Short-Term Response
SWOT :	Strengths, Weaknesses, Opportunities, Threats
TANUVAS :	Tamil Nadu Veterinary and Animal Sciences University
TFA :	Travel, Food, and Accommodation
TLAER :	Technical Large Animal Emergency Rescue
TR :	Tiger Reserve
UDMA :	Urban Disaster Management Authority
ULB :	Urban Local Body
UMMB :	Urea-Molasses Mineral Block
UN :	United Nations
UNISDR :	United Nations International Strategy for Disaster Reduction
URS :	Unified Response Strategy
UT :	Union Territory
UAV :	Unmanned Aerial Vehicle
VCI :	Veterinary Council of India
VDMP :	Village Disaster Management Plan
VERC :	Veterinary Emergency & Rescue Centre
VERU :	Veterinary Emergency Response Unit
VPH :	Veterinary Public Health
VPP :	Veterinary Paraprofessional
WAHIS :	World Animal Health Information System
WAP :	World Animal Protection
WCCB :	Wildlife Crime Control Bureau
WII :	Wildlife Institute of India
WOAH :	World Organisation for Animal Health
WTO :	World Trade Organization

Executive Summary

India's geo-climatic condition positions it as one of the world's most disaster-prone regions. A broad array of disasters recur with significant frequency, causing severe losses to human communities, infrastructure, livelihood, animals, often exceeding the local coping capabilities. Empirical evidence from past calamities attests to the fact that the failure to integrate veterinary concerns into disaster planning hampers human evacuation, escalates zoonotic disease risks, prolongs psychological distress and impedes recovery. The *Guidelines on Animal-inclusive Disaster Risk Reduction* (AiDRR) have been formulated to establish a systematic, proactive, and integrated approach to animal management across all phases of a disaster. These guidelines adopt the complementary paradigms of "One Health" and "One Welfare," acknowledging the interconnectedness of human wellbeing, animal welfare, and environmental sustainability. This document presents a structured institutional strategy to safeguard public health and strengthen community resilience, and is premised on the principle that minimizing animal distress is a necessary precondition to alleviate human distress and facilitate the inclusive resilience of the nation.

The guidelines are organized into thirteen chapters, each addressing different stages of the disaster management cycle.

Chapter 1 presents the introduction, rationale, and scope of the guidelines. It highlights the economic imperative of protecting livestock as productive assets and the gender dimension, noting that women constitute the majority of livestock-farming labour. The chapter defines the geographic and species scope, covering livestock, aquatic animals, companion animals, community animals, and wildlife. It further introduces a standardized multi-phase framework for Veterinary Emergency Response Operations (VERU), ranging from ongoing monitoring to post-intervention reporting.

Chapter 2 details the principles of AiDRR. The key principles include Community Participation and Ownership, the integration of Veterinary Public Health, and the "One Health" and "One Welfare" perspectives. The "Five Domains" model is introduced as the baseline criteria for animal welfare. The chapter also outlines adherence to the Isolation-Resistance-Sanitation framework for biosecurity and the Incident Response System (IRS) for operational coordination.

Chapter 3 provides an overview of the legal, policy, and institutional frameworks. It summarizes the constitutional and legislative mandates, including the Prevention of Cruelty to Animals (PCA) Act 1960, the Disaster Management (DM) Act 2005 (and its 2025 Amendment), and the Sendai Framework for Disaster Risk Reduction. The roles and responsibilities of key bodies are defined, including the National Disaster Management Authority (NDMA), the Ministry of Fisheries, Animal Husbandry and Dairying (MoFAHD), the Ministry of Environment, Forest and Climate Change (MoEFCC), the Animal Welfare Board of India (AWBI), and the State, District, and newly constituted Urban Disaster Management Authorities (SDMAs, DDMAs, and UDMAs). The chapter also details the role of the Society

for the Prevention of Cruelty to Animals (SPCA) and Veterinary Emergency Response Units (VERUs) in operational response.

Chapter 4 outlines the framework for Risk Assessment and Hazard Analysis. It details the vulnerability of various animal populations, including intensive farming systems and companion animals. Practical assessment tools are presented, such as the Livestock Emergency Guidelines and Standards (LEGS) framework and the comprehensive mapping of critical infrastructure like veterinary facilities and carcass disposal sites, while explicitly integrating Climate Change Adaptation (CCA) and Management Effectiveness Evaluation (MEE) for wildlife habitats.

Chapter 5 details Mitigation Measures. The structural measures include the construction of flood-resilient enclosures and seismic-resilient stables. The non-structural measures cover hazard-specific strategies, biosecurity protocols, and prophylactic health campaigns such as strategic vaccination and deworming. Financial risk-transfer mechanisms, including insurance schemes linked to preparedness, are also discussed.

Chapter 6 focuses on Preparedness. It prescribes the development of contingency plans and Standard Operating Procedures (SOPs) for emergency sheltering, animal evacuation, and feed and water stockpiling. This chapter outlines protocols for owner self-sufficiency via the 'Standardized Animal Disaster Box' and prescribes the medical inventory for VERUs, specifically 'Go Bags' and pharmaceutical stockpiles.

Chapter 7 presents guidelines for Response. It details the activation of emergency response systems and coordination mechanisms via the IRS. The chapter introduces specific frameworks for operations: the Locate, Access, Secure, Transport (L.A.S.T.) framework for rescue and the Secondary Assessment of Victim Endpoint (SAVE) system for veterinary triage. It also covers the management of epidemics and Occupational Health and Safety (OHS) for responders.

Chapter 8 deals with Animal Shelter, Care, and Post-Disaster Rehabilitation. It provides standards for site selection, intake protocols, and hygiene in emergency shelters. Post-disaster rehabilitation measures include livelihood restoration through resilient entrepreneurship and restocking guidelines that prioritize the health of surviving animals over new procurement, and targeted strategies for the rehabilitation of community animals and the restoration of wildlife habitats. Protocols for carcass disposal in adherence to Central Pollution Control Board guidelines are also detailed.

Chapters 9 and 10 cover Animal Health and Welfare Management. **Chapter 9** emphasizes disease surveillance and the prevention of zoonotic diseases through a One Health approach. **Chapter 10** provides ethical guidelines for humane handling, emphasizing low-stress techniques, and establishes strict criteria and ethical frameworks for humane euthanasia.

Chapters 11, 12, and 13 outline the cross-cutting support systems- training, communication, and monitoring—that underpin the guidelines. **Chapter 11** details capacity building,

proposing standardized training curricula for first responders, veterinarians, and Community Animal Health Workers (CAHWs), alongside the role of the National Institute of Disaster Management (NIDM). **Chapter 12** focuses on communication, including early warning dissemination and community engagement tools like Participatory Rural Appraisal (PRA). Lastly, **Chapter 13** outlines the framework for Monitoring, Evaluation, and Continuous Improvement, establishing Key Performance Indicators (KPIs), After-Action Reviews (AARs), and standardized reporting formats like the Post-Intervention Report (PIR) to ensure accountability and learning. To put it concisely, these *Guidelines* will guide on protecting animal welfare through a multi-faceted approach that requires the cooperation between government agencies, civil society, and local communities to forge a more compassionate and disaster-resilient society.

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01 Introduction

India has been traditionally vulnerable to disasters triggered by natural hazards on account of its unique geo-climatic conditions. Floods, droughts, cyclones, earthquakes, and landslides have been recurrent phenomena. According to 2024 figures released by the National Institute of Disaster Management and the Ministry of Earth Sciences, about 60% of the India's landmass is prone to earthquakes of various intensities; over 40 million hectares is prone to floods; about 8% of the total area is prone to cyclones, and 68% of the cropped area is susceptible to drought. These events cause immense disruption to the everyday functioning of communities and society, resulting in widespread life, material, and economic losses that often exceed the coping capacity of those affected.

Livestock provides livelihood to two-thirds of rural communities and also employs about 8.8% of the population in India. In this backdrop, India's large-scale livestock population forms an integral component of both agriculture and the rural economy. The livestock sector contributes to the nation and provides a primary source of livelihood for two-thirds of rural communities. For many, animals are not only a source of food and draught power but also act as a reliable "bank on hooves" in times of need.

In parallel, companion animals are indispensable to the household, offering emotional support and forming a high priority of the family unit, with their welfare being connected to the psychological well-being of their owners. Furthermore, community and stray animals are a substantial presence in both urban and rural landscapes and must be considered in public health and safety planning during disasters. These animals, both domestic and wild, are all subject to the same degree of exposure to the effects of natural and man-made disasters. According to Sawyer and Huertas in their 2018 book 'Animal Management and Welfare in Natural Disasters', over 40 million animals are affected by disasters every year globally, experiencing wide-scale loss of life and suffering.

To ensure the well-being and protection of these animals during disasters, Veterinary Public Health must be strengthened.

> According to the 2023 book, 'Veterinary Public Health & Epidemiology' by Narayan, Sinha, and Singh, Veterinary Public Health (VPH) is the sum of all contributions to the complete physical, mental, and social well-being of humans through an understanding and application of veterinary medical science.

Veterinary Support can prevent sickness and death and help maintain the value of the surviving animals. VPH impacts human health by reducing exposure to hazards arising from animals, animal products, and their environment.

Disaster Management practice in India has evolved from a largely relief-oriented approach to a more holistic one that includes preparedness and risk reduction. This evolution has led to a growing recognition of the need to protect productive assets, as reflected in global

frameworks. The National Disaster Management Plan of 2019, for instance, specifically refers to livestock-related Disaster Risk Reduction issues. This exhibits a substantive recognition that protecting animal life and welfare is an essential component of building resilient communities and securing the nation's developmental gains.

1.1 Need for Guidelines on Animal-Inclusive Disaster Risk Reduction (AiDRR)

The impact of disasters on animals embodies an understated crisis that has lasting ramifications for human welfare, economic stability, and public health. The failure to integrate animal welfare into disaster management can hamper evacuation, prolong recovery, and permanently damage local economies.

This vulnerability is abundantly reflected in the events of India's recent history: the Bhuj earthquake (2001) devastated veterinary infrastructure and disrupted millions of lives; the 2004 Indian Ocean Tsunami annihilated coastal livestock alongside thousands of human lives; and the 2015 Chennai floods displaced lakhs of people and caused massive, unquantified animal loss due to drowning and infection. The importance of implementing these guidelines is reinforced by recent calamities that have demonstrated the persistent vulnerabilities and ongoing weaknesses of animal health systems. As also witnessed during the 2013 Uttarakhand landslides, Sikkim Glacial Lake Outburst Flood (October 2023), and 2024 Wayanad Landslides, the limited integration of animal welfare into disaster management can hamper evacuation, prolong recovery, and permanently damage local economies.

The need for these guidelines is also rooted in the ethical principle of shared vulnerability. Harms to animals (e.g., disease, injury, and death) are strongly correlated with harms to humans. This relational view, grounded in an Ethics of Care, emphasizes that our fellowship with animals is action-guiding and forms the basis of our care, compassion, and empathy toward them. A disaster, therefore, is a time of shared crisis that calls for relational solidarity, where the focus is on responding to need, taking care of the world by sustaining the web of connection so that no one is left alone.

Thus, a systematic and institutionalized approach is an imperative, for which these guidelines are a prerequisite. The need is based upon the following factors:

- **Protect Livelihoods and Food Security:**
  - For a large part of India's rural population, livestock are the primary productive assets. During emergencies, the loss of these animals puts marginalized communities at risk of succumbing to abject poverty. Protecting livestock to this end is a direct intervention to safeguard livelihoods, secure a critical source of nutrition, and prevent the disintegration of household economies.
- **To Ensure Human Safety and Facilitate Effective Response:**
  - The strong bond between people and their animals is a decisive factor during emergencies. Many owners are willing to risk their own lives for their pets, often refusing to evacuate or returning to dangerous areas to care for animals left

behind. This behaviour endangers not only the owners but also the search and rescue personnel. Providing for the safety and sheltering of animals is a public health intervention that facilitates an orderly and complete evacuation of the human population. The obligation to plan for animals is attested by lessons from major disasters. In a 2017 study published in the American Journal of Public Health, Chadwin notes that during Hurricane Katrina (2005) in the United States, it was found that approximately 44% of the people who did not evacuate stayed, at least in part, because they did not want to leave their pets behind. Moreover, unchecked displacement of wildlife into inhabited areas escalates Human-Wildlife Conflict (HWC), posing a threat to human safety in post-disaster scenarios. This underscores that planning for animals is a proactive intervention to improve human safety and evacuation.

- **To Safeguard Public and Environmental Health:**
  - Disasters create conditions that compound the risk of disease outbreaks. The displacement and overcrowding of stressed, undernourished animals can lead to the rapid spread of infectious diseases, including zoonoses that are transmissible to humans. In addition, the improper disposal of a large number of animal carcasses can contaminate water sources and the environment, posing a serious threat to public health through site contamination, groundwater pollution, and the spread of disease via scavengers, mosquitoes, and vermin.
- **To Address the Challenge of Community and Stray Animals:**
  - Disasters can lead to the abandonment of pets, markedly increasing the population of stray animals. These unowned or community-owned animals, if not managed, pose public health risks, including the spread of diseases and the potential for hostile behaviour, which can impede relief and recovery operations. Integrating these animals into preparedness plans is essential for ensuring the overall safety and well-being of the affected community.
- **To Uphold Animal Welfare:**
  - Animals are sentient beings that depend on humans for their well-being. During disasters, they are commonly left stranded without shelter, food, or water, leading to immense suffering from injury, starvation, and disease. It is the moral responsibility of society to install structures and mechanisms in place that support the welfare of animals that cannot help themselves in a calamity. This moral responsibility is codified as a legal duty under Section 3 of The Prevention of Cruelty to Animals Act, 1960. This section mandates that "It shall be the duty of every person having the care or charge of any animal to take all reasonable measures to ensure the well-being of such animals and to prevent the infliction of unnecessary pain or suffering upon such animals". These guidelines are therefore a framework for fulfilling this statutory duty during disasters, where animals are most vulnerable.

1.1.1 The Economic Imperative

The livestock sector contributes 30.23% of agricultural Gross Value Added and 5.5% of the national economy *(Livestock in the Annual Report 2024- 25)*. In India, livestock contributes to the livelihood of nearly 67% of the population. The most vulnerable section is the people who rely on their livestock for their survival in rural and remote areas. As a matter of fact, in terms of sustainable development goals and the livelihood of the rural population, livestock play an enormous role.

The direct damage costs of disasters across the globe have risen exponentially over the decades to lakhs of crores of rupees in the past decade, with a rising trend in the loss of assets. Since the largest proportion of the world's animals are productive assets, their protection is critical. Protecting these assets through early intervention is highly cost-effective. This has been detailed in a in a 2014 report *"A Benefit cost analysis of WSPA's 2012 Intervention in the Dhemaji district of Assam, India"* prepared by *Economists at Large*, for every ₹1 spent on early interventions for livestock, there is a return of close to ₹96, contributing significantly to the local economy. Ignoring animal welfare can permanently damage economies and prolong recovery.

Financial analysis of veterinary interventions demonstrates high returns on investment in -pre-disaster veterinary resilience. International studies indicate that the cost-benefit ratio for the control of major zoonotic diseases which frequently spike post-disaster, is highly encouraging, owing to the high benefit-cost ratio. Therefore, funding pre-disaster veterinary resilience initiatives is an investment in a high-yield economic protection strategy.

1.1.2 The Gender Dimension

It is of the utmost importance to recognize the gendered impact of animal loss. Two-thirds of the world's poorest livestock keepers are women. In India, the livestock industry is dominated by women who provide 55 percent of employed livestock-farming labour and more than 77 percent of the work involved in taking care of animals. Furthermore, 93 percent of people employed in dairying are women *(Food and Agriculture Organization of the United Nations, n.d.)*. For these women, livestock is a rare source of wealth and asset holding that they can own or manage. The loss of these animals disproportionately affects women and, by extension, the children, elderly, and sick who depend on them.

Around 90% of activities related to the care and management of livestock are carried out by women in the family. This makes their engagement in preparedness planning, training, and livelihood restoration activities not just beneficial, but essential for community resilience.

1.1.3 The Psychological and Human Safety Dimension

The failure to plan for animals can hinder human evacuation, prolong PTSD (Post Traumatic Stress Disorder), and extend stays in temporary shelters. Pet owners often display extreme or irrational behaviours due to concern for their animals, with studies proving

that almost three-quarters of pet owners would attempt to take their animals with them if evacuated. This can lead them to overlook official warnings and return to evacuation zones, endangering themselves and rescue personnel.

1.2 Purpose and Objectives

The overall purpose of the guidelines is to provide a practical direction to support the implementation of AiDRR. Disasters do not discriminate between people and animals, and their devastating impacts affect not only humans and infrastructure but also the animals that are critical to the livelihoods and well-being of millions. Animals are an integral part of communities, providing income, nutrition, labour, and companionship. For that reason, neglecting their welfare during emergencies can have far-reaching consequences (particularly on the poor and vulnerable), undermining the entire disaster response phase. The primary purpose of these guidelines is to establish a systematic, proactive, and integrated approach to animal management across all phases of a disaster, shifting from a reactive relief model to a culture of prevention, preparedness, and resilience. For the purposes of these guidelines, the legal definitions from The Prevention of Cruelty to Animals Act, 1960, shall apply.

The core objectives of these guidelines are to:

- Minimize the loss of animal life and prevent suffering by ensuring that animal welfare is a cornerstone of all disaster management activities.
- To bring forth and promote best practices in AiDRR to enhance the participation of animal-dependent communities in decision-making for risk reduction at the local level.
- Enhance community resilience by addressing the strong human-animal bond, which influences human behaviour during evacuations and is vital for psychological recovery.
- Address the welfare and management of community animals to safeguard public health from zoonotic risks and mitigate human-animal conflict in post-disaster environments.
- Safeguard public health by managing zoonotic disease risks, ensuring food safety, and overseeing the proper disposal of carcasses that arise from a disaster event.
- Provide a clear institutional framework and delineate the roles and responsibilities of key stakeholders, including the Department of Animal Husbandry and Dairying (DAHD), Department of Fisheries (DoF), National Disaster Management Authority (NDMA), State Disaster Management Authorities (SDMAs), District Disaster Management Authorities (DDMAs), Urban Disaster Management Authorities (UDMAs), State Animal Welfare Boards (SAWBs), Society for Prevention of Cruelty to Animals (SPCAs), Veterinary Emergency Response Units (VERUs), Animal Welfare Organizations (AWOs), local communities, and animal owners.
- Establish standardized, practical guidance for all stakeholders about the principles

and practices of AiDRR to improve the quality and accountability of animal-centric interventions in emergencies.

- Foster 'Harmonious Co-existence,' - as a dynamic state where humans and animals adapt to living in shared landscapes with minimum negative impact on each other or their resources.

1.3 Geographic Scope

These guidelines apply to the entire territory of India. In accordance with the guidelines, all States/UTs must incorporate the same into their own specific Disaster Management Plans based on their unique vulnerabilities. The guidelines should cover all animals affected by disasters, including livestock, companion animals, community animals and wildlife.

India's unique and diverse geo-climatic conditions make the nation vulnerable to a wide array of natural hazards, including floods, droughts, cyclones, earthquakes, and landslides. India's large-scale livestock population is essential to its agriculture and rural economy, with a significant portion of the population depending on animals for their livelihood. Therefore, a unified national framework is needed to ensure a well-balanced and effective approach to animal-inclusive disaster risk reduction across all states and union territories.

1.4 Species Scope

These guidelines provide a comprehensive framework covering all animals affected by disasters, which are broadly categorized as livestock, companion animals, community animals and wildlife.

This comprehensive scope is supported by the broad definition of 'animal' in Prevention of Cruelty to Animals Act, 1960. The guidelines provide a comprehensive framework covering all animals affected by disasters, broadly categorized as:

- **Livestock:** Including cattle (cows), buffaloes, sheep, goats, pigs, poultry, and other animals raised for food, fibre, or income.
- **Aquatic Animals:** Including fishes, crustaceans and all other aquatic animals that are raised or captured for use as food and other commercial purposes
- **Companion Animals:** Including pets such as dogs and cats kept in homes as companions. Their inclusion is critical as the human-animal bond often leads owners to risk their own lives.
- **Community and Stray Animals:** These unowned animals pose public health risks if not managed and must be integrated into preparedness plans. Several animals, such as cattle are also abandoned and left to stray in the face of disasters.
- **Wildlife:** Including all wild animals, whether free-ranging or in captivity, that are impacted by disasters.

1.5 Applicability Across All Disaster Phases

A potent disaster management strategy demands a continuous and integrated cycle of activities, and these guidelines apply to all phases of the disaster management cycle. These guidelines apply to all phases of the disaster management cycle, which is a continuous and integrated process of Mitigation, Prevention, Preparedness, Response, and Recovery.

- **Mitigation and Prevention:** This phase involves proactive measures taken before a disaster to eliminate or reduce its impact. The guidelines endorse integrating animal-related risks into land-use planning, constructing disaster-resilient animal shelters, and developing community-based strategies to reduce underlying vulnerabilities.
- **Preparedness:** This phase concentrates on building the capacity to respond aptly during the disaster. The principal activities include developing animal evacuation plans, training veterinary emergency response units, creating awareness among animal owners, and stockpiling essential supplies like feed, fodder, and medicines.
- **Response:** This is the immediate, life-saving phase following a disaster. The guidelines provide a framework for humane animal rescue, provision of emergency veterinary care, establishment of temporary shelters, and distribution of emergency feed and water to affected animal populations. The phase requires urgent intervention to protect lives and mitigate risks. The operations are divided into two parallel streams:
  - » **Veterinary Response:** Triage, emergency medical care, humane euthanasia, carcass disposal, and disease containment.
  - » **Mass Care & Sheltering:** Execution of the four core operational missions:
    - ♦ **Shelter-in-Place Support:** Supporting animals that cannot be evacuated via mobile delivery of feed and water.
    - ♦ **Congregate Sheltering:** Managing temporary facilities (cohabitated or animal-only) for displaced animals.
    - ♦ **Reunification:** Implementing tracking systems to reunite displaced animals with owners
- **Recovery:** This long-term phase involves rebuilding and restoring communities and livelihoods. The guidelines emphasize efforts that consider animal welfare, rehabilitating veterinary infrastructure, and implementing measures to augment the resilience of animal-dependent communities to future disasters.

1.6 Framework for Veterinary Emergency Response Operations

This provides a standardized, professional framework for all veterinary interventions, ensuring a systematic approach from initial monitoring to post-disaster reporting. To facilitate the undertaking of veterinary emergency response operations by any designated veterinary authority (e.g., Department of Animal Husbandry, Rapid Response Teams, or

specialized units), the following 8-step framework is prescribed.

The 8-step framework is essential to remain organized and professionally address the needs of animals in disasters:

1. **Step 1: Ongoing Disaster Monitoring:** As part of the monitoring process, the teams should regularly follow government, UN, or other sources that provide disaster alerts. The key sources include the India Meteorological Department (IMD), the Indian National Centre for Ocean Information Services (INCOIS), the Geological Survey of India (GSI), the Central Water Commission (CWC), the Global Disaster Alert and Coordination System (GDACS) and GLIDE Number Database. This is an ongoing process to prepare district and state veterinary services for emergency deployments for assessments or interventions.
2. **Step 2: Conducting Remote Assessment:** This is an activity by the Nodal Veterinary Authority to determine if there is any further need for conducting detailed assessments. It should ideally be completed within 1 day, using secondary sources like government documents, UN and humanitarian agency reports, and media. It also determines whether there is sufficient threat to a vulnerable population to warrant an intervention, including logistic considerations for deploying teams.
3. **Step 3: Initiating Disaster Assessment and Needs Analysis (DANA):** Based on the remote assessment, Field Assessment Teams are deployed to conduct onsite assessments. The initial DANA should be completed within 5-7 days or within 72 hours after the teams have reached the disaster-affected sites. The assessment can then be updated regularly using Situation Reports (SITREPs). The assessments should have enough information to address: the role of livestock in livelihood, the nature and impact of the emergency, and a situational analysis to plan the intervention.
4. **Step 4: Activating Disaster Assessment and Response Team (DART):** After the DANA is finalized, the Nodal Veterinary Authority activates a multidisciplinary DART. This team should consist of members from State Veterinary Services, NGOs, the local community, and other local actors to avoid any bias and ensure transparency in procurement and relief operations. This also helps in effectively handing over responsibilities to local stakeholders as part of an exit strategy.
5. **Step 5: Implementing Disaster Short-Term Response (STR):** The DART implements the STR in the identified intervention areas. Depending on local needs, the focus could be on the rescue of animals, feed provisions, veterinary treatment, and carcass disposal. The period for implementing an STR is typically 1-6 months.
6. **Step 6: Implementing Disaster Long-Term Recovery (LTR):** The LTR is focused on rehabilitation, recovery, and resilience building of vulnerable communities with the motto “Build Back Better”. Depending on local needs, the focus could be on the construction of structures for animals, restocking, training, and awareness

exercises. The period for implementing LTR is typically 6 months to 2 years, during which the exit strategy should be activated.

7. **Step 7: Undertaking Monitoring and Evaluation (M&E) Mission:** The M&E process should be undertaken by engaging external agencies to assess the interventions' impact based on the findings of the DANA and other baseline indicators.
8. **Step 8: Post-intervention Reporting (PIR):** The final step is documenting the experiences of the Response Teams and DART as a final PIR. This process helps document stakeholder feedback, best practices, and lessons learned to help future interventions.

This operational framework shall be implemented within the broader Incident Response System (IRS) adopted by the relevant Disaster Management Authority. The DART leader will report to the appropriate Section Chief (e.g., Operations) within the IRS structure to ensure seamless integration with the overall response.

1.7 Veterinary Deployment Protocols

To ensure operational safety, clinical efficacy, and the mitigation of zoonotic spillovers, all veterinary teams including Veterinary Emergency Response Units (VERUs) and Rapid Response Teams, must adhere to specialised deployment protocols. These protocols integrate tactical disaster management with the principles of Veterinary Public Health (VPH) and the One Health approach. All veterinary teams must adhere to the following deployment protocols:

1.7.1 Before Deployment (Readiness and Logistics)

Prophylactic and Mental Readiness: All deployed personnel must undergo medical screening, possessing documented up-to-date vaccinations and access to targeted chemoprophylaxis. Importantly, responders must undergo pre-trauma exposure strategies and stress-reduction training to mitigate the risk of Post-Traumatic Stress Disorder before entering mass casualty environments.

The Emergency "Go-Bag" & Specialized PPE: Responders must carry a standardized "Go-Bag" encompassing both field survival gear (helmet, static rope, GPS, waterproof tent, solar lantern) and veterinary Personal Protective Equipment (PPE). Specialized PPE must include heavy-duty bite/scratch-resistant handling gloves, steel-toed waders (for flood operations), and N95 masks to protect against zoonotic aerosol transmission.

Veterinary & Cold-Chain Logistics: Teams must be equipped with basic humane restraint equipment and field triage instruments. The deployment of secure, portable cold-chain equipment (vaccine carriers with ice packs) is mandatory to ensure the viability of sensitive biologicals and pharmaceuticals in the field.

1.7.2 During Deployment (Field Operations and Disaster Epidemiology)

Hazard Briefing & Tactical Safety: Before field entry, the Team Leader must conduct a comprehensive hazard briefing, apprising members of specific environmental risks (e.g.,

falling debris, flood turbulences, fire choking hazards, and the threat of predatory animals in disrupted ecosystems).

Disaster Epidemiology & Surveillance: Deployed teams must actively utilize disaster epidemiology principles to monitor the impact zone. This includes intense active surveillance for the "spillover" of infectious agents from natural ecological niches to human-populated areas - such as the emergence of epidemic plague or anthrax triggered by floods and earthquakes.

Biosecurity & Sanitation: Teams must enforce rigorous sanitation protocols to prevent responders from inadvertently becoming disease vectors. This mandates the strict prevention of human contact with animal faeces, meticulous hand hygiene, and the systematic use of detergent sanitizers (utilizing their wetting and emulsifying properties) to rapidly reduce microbial counts on field equipment, transport vehicles, and temporary shelters.

One Health Coordination: Field operations must function through a multidisciplinary One Health mechanism. Veterinary responders must maintain continuous communication with local public health sectors and the Incident Response System (IRS) to address cross-sectoral threats at the animal-human-ecosystem interface.

1.7.3 After Deployment (Demobilization and Transition)

Preventing "Mission Creep": Once the specific technical intervention objectives (e.g., emergency triage, mass vaccination) have been achieved, the response operation must systematically shut down or hand over duties to local stakeholders. This exit strategy is imperative to prevent "mission creep" and encourage the immediate onset of local community recovery.

Decontamination & Medical Debriefing: All reusable veterinary equipment, transport vehicles, and PPE must undergo rigorous scientific decontamination and sterilization. Simultaneously, responders must undergo health monitoring and psychological debriefing to process "compassion fatigue" and trauma. They must be granted a sufficient transition period before resuming routine duties.

Post-Intervention Reporting (PIR): The Team Leader must finalize and submit a comprehensive Post-Intervention Report (PIR) detailing the GLIDE number of the disaster, all epidemiological data, Situation Reports (SITREPs), and operational achievements. This document is mandatory for predicting the consequences of future disasters and informing subsequent capacity-building strategies.

02 Principles of Animal-Inclusive Disaster Risk Reduction (AiDRR)

Chapter 2: The principles of AiDRR are the foundational ideals that operate as the guiding rules for all actions and interventions detailed within these guidelines. They are developed in harmony with the spirit of people's participation and are aimed at fostering a culture of safety, resilience, and compassion for all animals within a community's sphere of influence. The actions undertaken at the local level, irrespective of the location, vulnerability, or type of hazard, must be guided by these core principles to ensure they are appropriate, effective, and sustainable.

2.1 Community Participation, Ownership, and Duty of Care

Communities and individual animal owners are the first responders in any disaster. The external support from NGOs and government agencies does not supersede the primary duty of care mandated by the Prevention of Cruelty to Animals Act, 1960. To uphold this duty, animal owners must practice self-sufficiency by proactively seeking information, preparing personal emergency contingencies, and planning for safe containment or relocation. Furthermore, to establish robust, bottom-up resilience, it is imperative that all AiDRR initiatives systematically integrate indigenous insights and guarantee the participatory involvement of underrepresented populations.

2.2 The Humanitarian Impulse and Shared Vulnerability

During a disaster, human beings and animals experience an urgent need for rescue and protection. This is a time of shared vulnerability and solidarity. The focus of animal disaster ethics is to understand animal needs within the context of the humanitarian impulse to aid animals in need, which includes reducing pain, suffering, and loss of life. This impulse is recast as respect for animals, ensuring humane treatment and minimizing harm, with a view towards the well-being of the entire community.

2.2.1 Veterinary Public Health as a Core Principle

A core principle of these guidelines is the integration of Veterinary Public Health (VPH). This principle recognizes that VPH directly impacts human health by reducing exposure to hazards arising from animals, animal products, and their shared environment. During emergencies, veterinary professionals serve as critical first responders, not only treating injured animals but also implementing disease surveillance, preventing zoonotic outbreaks, and maintaining food safety systems.

2.3 Adherence to Animal Welfare Standards

To provide a clear framework for animal welfare, these guidelines adopt the Five Domains as the baseline criteria along with six ethically responsible animal caretaking aims.

2.3.1 The Five Domains

The Five Domains makes the distinction between the physical and functional factors that affect an animal's welfare and the overall mental state of the animal arising from these. It also recognises that for every physical aspect that is affected, there may be an associated emotion or experience that may also affect the animal's welfare. The model categorizes welfare into four physical domains that cumulatively influence the fifth domain:

Nutrition: Ensure ready access to fresh water and a diet of sufficient quality and quantity to maintain health and vigor.

Environment: Provide an environment that reduces exposure to discomfort (e.g., shelter from extreme weather, dry resting areas, noise control).

Health: Prevent or rapidly diagnose and treat injury and disease; support physical functional capacity.

Behaviour: Provide sufficient space and facilities for animals to express natural behaviours and interact with their own kind.

Mental State (The Affective Domain): The cumulative result of the first four domains. The objective of AiDRR is not merely survival, but to minimize negative mental states (fear, distress, panic) and promote positive experiences (comfort, safety) wherever possible.

The use of this model is critical for veterinary triage and shelter management, ensuring that interventions address not just physical injuries but also the severe psychological stress animals experience during displacement.

2.3.2 Ethically Responsible Aims

All disaster management plans and policies should consider the following six ethically responsible animal caretaking aims:

1. Saving lives and mitigating harm.
2. Protecting animal welfare and respecting animals' experiences.
3. Observing, recognizing, and promoting distributive justice.
4. Advancing public involvement.
5. Empowering caregivers, guardians, owners, and community members.
6. Augmenting public health and veterinary community professionalism, including engagement in multidisciplinary teams and applied scientific developments.

2.4 Livelihood-Centric Approach

The protection of animals in disasters is, connected to the protection of human livelihoods. In India, livestock provides a primary source of livelihood to two-thirds of rural communities and contributes notably to the national GDP. For millions of smallholder farmers, pastoralists, and landless households, animals represent their most important productive assets, providing a source of income, nutrition, draught power, and social security.

Therefore, this principle establishes that AiDRR interventions related to livestock are also basically livelihood-protection measures. Livestock loss can severely impoverish vulnerable families, worsen food insecurity, and undermine their recovery potential. By focusing on saving and protecting these animal assets before, during, and after a disaster, response efforts can more remarkably support the economic and social recovery of the affected community.

Besides, this livelihood-centric approach must not reduce animals to mere commodities. As seen in past disasters like the 2018 Kerala floods and Cyclone Amphan in 2020, media and official reports often frame the deaths of farm animals as economic "losses" for the producers, while their suffering and the loss of their lives go unnoticed.

Systemic welfare issues in intensive farming operations become acute vulnerabilities during a disaster. These include intensive confinement (in the form of battery cages, tethering, cage-pen aquaculture, and gestation-farrowing crates) - which do not accord the animals the opportunity to escape in the face of disaster. Hence, a resilient approach requires addressing these baseline vulnerabilities. To mitigate heightened disaster vulnerability, it is recommended to maintain strict compliance with prescribed stocking density norms across poultry, dairy, piggery, and aquaculture sectors. Overstocking must be avoided as it hampers baseline animal health and renders evacuation unmanageable, turning high-density housing into a high-risk zones during disasters.

2.5 Public Health and Safety Approach

The management of community animals (irrespective of community caretakers presence), is a core component of safeguarding public health and ensuring community safety during and after a disaster. Disasters oftentimes lead to the abandonment of pets and the disruption of local ecosystems, which can increase the population and change the behaviour of free-roaming animals.

This principle recognizes that unmanaged animal populations can give rise to serious risks, including:

- **Spread of Zoonotic Diseases:** Community animals, particularly street dogs, can act as reservoirs for zoonotic pathogens. Their displacement during disasters can increase the risk of disease transmission to both humans and other animals.
- **Threats to Public Safety:** Stressed, hungry, or injured animals may become more aggressive, leading to an increase in bite incidents that can hinder rescue and relief operations.
- **Environmental Contamination:** Unmanaged carcasses of community animals pose a biohazard if not disposed of in a timely and scientific manner.

Therefore, AiDRR plans must include specific, humane strategies for the management, rescue, and care of community animals as a pivotal public health and safety measure. The implementation of such strategies shall be guided by the framework established in the Animal Birth Control Rules, 2023, which provides for systematic population management

and disease control, thereby reducing baseline vulnerabilities before a disaster strikes.

2.6 Integration and Mainstreaming

For AiDRR to be effective and sustainable, it cannot be implemented in a vacuum. This principle mandates that the consideration of all animals, namely, livestock, companion, and community-related, be systematically integrated and mainstreamed into all existing disaster management and development frameworks. Animal-centric interventions must be planned and executed in close coordination with all relevant stakeholders, including government departments, humanitarian agencies, municipal bodies, recognised animal welfare organizations, and community-based organizations.

This approach, as a result, avoids duplication of effort and ensures that resources are used efficiently. For example, veterinary relief camps should be coordinated with human health camps; animal evacuation routes should be integrated into community evacuation plans; and the efforts of NGOs in managing community animals should be formally included in the district-level response strategy. Moreover, mainstreaming AiDRR into long-term development programmes ensures that risk reduction measures are incorporated into regular planning and budgeting, rather than being treated as reactive, short-term relief measures. Strengthening disaster resilience at scale requires harmonizing current animal husbandry programs with established risk reduction frameworks. It is recommended to structurally interlink these guidelines with all existing and upcoming government policies, schemes, and programs, to establish disaster resilience as a prerequisite within planning and execution of related sectoral interventions.

2.7 Integrated "One Health" and "One Welfare" Approach

These guidelines integrate the complementary "One Health" and "One Welfare" frameworks to recognize the inextricable interdependence between animal welfare, human wellbeing, and environmental integrity. In accordance with the Prevention and Control of Infectious and Contagious Diseases in Animals Act, 2009, this approach mandates joint surveillance, disease control, and biosecurity measures at the animal-human-ecosystem interface. In a disaster context, AiDRR interventions must be designed to achieve optimal outcomes across all three domains by:

Early Detection and Risk Assessment: Ensuring provision for post-disaster joint human–animal surveillance, coordinated outbreak investigation, and risk assessment. Following the Global Early Warning and Response System for major animal diseases including zoonoses (GLEWS) model, establish a joint system to assist in the 'prediction, prevention, and control of animal disease threats, including zoonoses, through sharing of information, epidemiological analysis, and joint field efforts to assess and control the outbreak' to enable early detection of zoonotic spillover risks.

Preventing Zoonotic Diseases: Implementing robust disease surveillance to prevent disease transmission pathways between animals and humans.

Alleviating Human Distress: Recognizing that reducing animal suffering directly mitigates

human psychological trauma and economic distress.

Protecting Environmental Health: Ensuring proper animal management, such as the scientific disposal of carcasses and mass shelter waste, to prevent environmental degradation and protect biodiversity.

Safeguarding Public Health: Ensuring the safety of animal-source foods and strictly regulating antibiotic use to address Antimicrobial Resistance (AMR) during disaster relief operations.

2.8 Guiding Principles for Emergency Management Operations

To ensure unified, effective, and legally compliant action, all multi-agency animal disaster response operations must be guided by the following standardized national and international frameworks:

Incident Response System (IRS): Serving as the primary operational backbone, all animal rescue and relief interventions must be executed within the standard IRS framework. This ensures a strict unity of command, clear delegation of duties, and seamless resource coordination among State, District, and Local authorities, effectively preventing operational silos during chaos.

Statutory Compliance: All emergency actions must adhere strictly to national law, notably the Prevention of Cruelty to Animals Act, 1960, and Section 325 of the Bharatiya Nyaya Sanhita, 2023, ensuring that humane handling and the prevention of unnecessary suffering are maintained even under crisis conditions.

Livestock Emergency Guidelines and Standards (LEGS): Acting as the specialized technical reference, field interventions must prioritize rapid livelihood protection through LEGS-compliant strategies. This includes adhering to established global standards for emergency feeding, water provision, veterinary triage, and mass shelter management.

The Sphere Minimum Standards: Animal welfare operations must align with these core humanitarian principles, recognizing that safeguarding animal assets directly supports fundamental human rights, including life with dignity, food security, and post-disaster economic stabilization.

Sendai Framework for Disaster Risk Reduction (SFDRR): Strategic planning must align with Sendai priorities by shifting the governmental focus from purely reactive relief toward proactive risk understanding, structural mitigation investments, and adopting "Build Back Better" principles for veterinary and agricultural infrastructure.

2.9 Adherence to Professional Veterinary Standards

A basic tenet of these guidelines is adherence to the highest standards of veterinary professional practice. All animal health interventions, from field triage to shelter medicine and disease control, must be overseen and conducted by qualified veterinary professionals. All actions must conform to the standards of care, ethics, and codes of conduct set forth by the Veterinary Council of India (VCI) and internationally recognized bodies. This ensures

quality of care, professional accountability, and the most humane outcomes for animals affected by disasters.

To enforce this principle, all veterinary interventions must be led and performed by a 'registered veterinary practitioner' as defined under the Indian Veterinary Council Act, 1984. Furthermore, all such practitioners are legally bound to uphold the VCI (Standards of Professional Conduct, Etiquette and Code of Ethics) Regulations, 1992, which provides the ethical and professional framework for all actions, including those in disaster scenarios.

03 Legal, Policy and Financial Frameworks

A robust legal, policy, and financial framework is the foundation for effective and sustainable animal-inclusive disaster management. These frameworks provide the necessary authority, mandate, and resources for government agencies and other stakeholders to implement preparedness, response, and recovery measures for animals.

3.1 Legal and Policy Frameworks

The mandate to protect animals during disasters in India is grounded in constitutional duties, animal welfare legislation, and overarching national disaster management policies.

Constitutional and Legal Mandate: The Constitution of India, under Section 51 A (g), establishes that it is the fundamental duty of every citizen *"to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures."* This constitutional principle is supported by The Prevention of Cruelty to Animals Act, 1960 and The Wildlife (Protection) Act, 1972, which provide the legal basis for animal protection. Aside from that, The Prevention and Control of Infectious and Contagious Diseases in Animals Act, 2009 provides the legislative backup for controlling and eradicating livestock diseases, which is critical in post-disaster scenarios.

The term "animal" is defined broadly under the PCA Act, 1960, to mean "*any living creature other than a human being*". This inclusive definition is intended to provide protection to the widest possible range of species affected by disasters.

The Prevention of Cruelty to Animals (PCA) Act, 1960, and its subordinate rules provide the central legal basis for incorporating animal protection into disaster risk reduction. It criminalizes a wide range of cruel acts such as physical abuse, overwork, abandonment, denial of food, water, or shelter, use of animals unfit due to age, disease or injury, and killing or mutilation in unnecessarily cruel ways. These provisions apply directly in disaster contexts, ensuring humane handling during rescue, preventing exploitation of weak or injured animals, mandating adequate care in relief shelters, prohibiting abandonment during displacement, and protecting even community or stray animals from cruel practices. This makes the PCA Act a critical legal safeguard for animal welfare across all stages of disaster management, and for all terrestrial as well as aquatic animals.

Further, the legal framework for the veterinary workforce is governed by the Indian Veterinary Council Act, 1984. This Act formally recognizes the existence of para-veterinary professionals and provides for state-level legislation to define the scope of "Minor Veterinary Practices" that they are permitted to perform. This provision legally empowers a tiered system of service delivery, where in all para-veterinary work is conducted under the supervision of a registered veterinarian, ensuring professional accountability and a structured chain of command during disaster response.

Under the Wildlife (Protection) Act, 1972, the Chief Wildlife Warden is mandated to take

measures for the security of wild animals and take necessary steps during disasters to ensure wildlife security.

Complementing species-specific protections, the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 (formerly the Forest Conservation Act, 1980, amended 2023) functions as a legislative framework for disaster mitigation by regulating land-use changes.

The National Wildlife Action Plan (2017-31): This recommends the integration of Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) into the Management Plans of Tiger Reserves (TRs) and Protected Areas (PAs).

National Human-Wildlife Conflict Mitigation Strategy and Action Plan (HWC-NAP) 2021-26: The National Human-Wildlife Conflict Mitigation Strategy and Action Plan (HWC-NAP) acts as the main operational framework for managing wildlife-related emergencies in India. Guided by the National Wildlife Action Plan (2017–2031), this strategy establishes a stable institutional framework for conflict mitigation.

Disaster Management Act, 2005: All disaster management activities in the country are governed by the Disaster Management Act, 2005, which provides the legal framework for establishing national, state, and district-level disaster management authorities.

Most importantly, the Disaster Management (Amendment) Act, 2025 has broadened the scope of disaster management. By inserting an explanation into Section 2(e) of the principal Act, it legally clarifies that 'disaster management' is inclusive of 'disaster risk reduction'. There is thus a robust mandate for the proactive mitigation and preparedness measures advocated in these guidelines, as it formally recognizes the need to reduce the vulnerability of 'property, infrastructure, economic activity, environmental and natural resource', which directly encompasses livestock and all other animal categories.

National Policy on Disaster Management, 2009: The National Policy on Disaster Management, 2009, explicitly recognizes the need to protect both domestic and wild animals from the effects of disasters. This policy formally recognizes that animals are exposed to the effects of disasters and that many communities show compassion towards them. It states that "*It is necessary to devise appropriate measures to protect animals and find means to shelter and feed them during disasters and their aftermath, through a community effort… these efforts need to be formalized in the preparedness plans*". The policy mandates that relevant government departments, including the Department of Animal Husbandry, must devise such measures at all levels.

The National Livestock Policy, 2013, further strengthens this mandate by stating that contingency plans must be prepared to maintain the productivity and welfare of the livestock and poultry sectors during natural calamities. These plans are required for improving veterinary care and making feed and fodder available through enhanced productivity and storage.

The National Disaster Management Plan (NDMP), 2019: The NDMP of 2019 specifically refers to livestock-related Disaster Risk Reduction issues, indicating a critical understanding that protecting animal life and welfare is an indispensable component of building resilient

communities.

National Disaster Management Plan for Animals: In 2016, the Department of Animal Husbandry, Dairying & Fisheries (DAHD), Government of India, released the first-ever National Disaster Management Plan specifically to address the needs of animals in all phases of disasters. This was a pioneering initiative by the Government of India to reduce livestock losses and minimize disaster risks on the livelihood of vulnerable communities.

NDMA Guidelines: Several existing NDMA guidelines, specifically the Guidelines on Disaster Management Exercises (DMEx), the Guidelines for Establishment and Operation of Emergency Operations Center (EOC), and the Guidelines on Community-Based Disaster Risk Reduction (CBDRR) and others, acknowledge the importance of non-human life and encourage community participation in ensuring animal safety.

International Frameworks: India's national policies are influenced by international agreements, such as the Sendai Framework for Disaster Risk Reduction (2015-2030). The Sendai Framework explicitly calls for the protection of "productive assets, including livestock, working animals, tools and seeds," as a global mandate for integrating animals into national DRR strategies. As a signatory, India is committed to protecting "productive assets, including livestock".

Furthermore, the integration of Animal-inclusive Disaster Risk Reduction (AiDRR) is intrinsically linked to the realisation of the United Nations Sustainable Development Goals (SDGs). Protecting livestock and working animals is essential for achieving SDG 1 (No Poverty) and SDG 2 (Zero Hunger), given their critical role as livelihood and food security assets for vulnerable communities. By ensuring that animal owners can evacuate safely without abandoning their assets, these guidelines support SDG 11 (Sustainable Cities and Communities) in building resilient human settlements. Additionally, safeguarding wildlife, ecosystems, and community animals directly supports SDG 13 (Climate Action), SDG 15 (Life on Land), and SDG 3 (Good Health and Well-being) through the One Health approach. Eventually, the collaborative framework established between government, civil society, and the private sector reinforces SDG 17 (Partnerships for the Goals). By adopting these guidelines, India reinforces its national commitment to these global sustainable development targets.

The World Organisation for Animal Health (WOAH), formerly OIE, is the reference organisation recognized by the World Trade Organization (WTO). Its primary objectives are:

- To ensure transparency in the global animal disease situation by disseminating information on animal health worldwide.
- To collect, analyze, and disseminate veterinary scientific information.
- To provide international solidarity in the control of animal diseases.
- To safeguard world trade by publishing health standards for international trade in animals and animal products, thereby avoiding unjustified sanitary barriers.

To ensure the systematic and uniform integration of animal welfare into disaster management, the National Disaster Management Authority (NDMA), exercising its powers under the Disaster Management Act, 2005, shall issue binding directions to all State and District Disaster Management Authorities (SDMAs/DDMAs) and the newly constituted Urban Disaster Management Authorities (UDMAs) under the amended Act.

3.2 Institutional Framework for AiDRR at the National Level

Government bodies at the national, state, and district levels have the primary responsibility for leading and coordinating disaster management activities. As laid out in the Disaster Management Act, 2005, the following institutions at the national level have a pivotal role in guiding, coordinating, and supporting the implementation of Animal-Inclusive Disaster Risk Reduction in the country.

A successful animal-inclusive disaster management framework depends on clear institutional arrangements and robust coordination mechanisms that bring together all relevant stakeholders. The effective integration of animal welfare into the broader disaster management structure requires a "whole of society" approach, with well-defined roles for government agencies, non-governmental organizations, and the private sector. This collaborative effort ensures that the response is not fragmented and that resources are mobilized adeptly to protect both animals and the related livelihoods.

3.2.1 National Disaster Management Authority (NDMA)

The NDMA is the apex body for Disaster Management in India, with the responsibility for laying down and implementing the policies, plans, and guidelines to ensure a timely and effective response to disasters. Its role in AiDRR is to provide overall policy direction, facilitate inter-agency coordination at the national level, and ensure that the needs of animals are integrated into the National Disaster Management Plan (NDMP). It also leads public awareness efforts by disseminating early warnings and Public Service Announcements (PSAs) for the safety of both people and animals.

3.2.2 Ministry of Fisheries, Animal Husbandry and Dairying (MoFAHD)

The MoFAHD is the nodal technical agency responsible for prescribing all technical aspects of animal health and welfare in disaster management. Its duties include conducting pre-disaster vulnerability mapping of animal populations and developing species-specific and hazard-specific contingency plans.

Its role in AiDRR is preeminent and includes:

- Serving as the primary technical authority on all matters related to animal health, rescue, shelter, and feeding during disasters.
- Contributing towards the preparation of and regularly updating the National Disaster Management Plan for the protection of animals.
- Coordinating with State Animal Husbandry Departments to ensure the implementation of preparedness and response measures as stated in the

respective State Disaster Management Plans.

- To utilize the institutional and programmatic framework established under the National Skill Development Framework for Animal Husbandry and Dairying as the primary mechanism for capacity building to implement these guidelines.

Disaster response necessitates veterinary interventions such as treatment and first aid. Technical norms and parameters provided by MoFAHD shall be operationalised through the Department of Animal Husbandry and Dairying (DAHD) as well as Department of Fisheries (DoF) at the Central level. The execution of these norms and parameters shall be carried out through the State Animal Husbandry Departments (State AHDs) and State Fisheries Departments. Key aspects that the DAHD and DoF shall extend support for and prescribe SOPs and parameters for include Emergency Veterinary Treatment (immediate clinical care for common disaster related ailments), Strategic Vaccination campaigns (based on epidemiological risk), Strategic Deworming (improving the baseline health of rescued animals), and Nutritional and Supportive Care (multivitamin and mineral supplementation). The DAHD is also responsible for deploying Veterinary Emergency Response Units (VERUs), coordinating animal rescue operations, managing emergency shelters, and overseeing the distribution of emergency feed, water, and veterinary care. In the recovery phase, the department leads disease surveillance, manages restocking programs, and provides technical assistance to restore animal-based livelihoods.

3.2.3 Ministry of Environment, Forest and Climate Change (MoEFCC)

The MoEFCC is responsible for overseeing the safety of wildlife in Protected Areas and Zoological Parks. It will coordinate disaster response through its institutional framework which include:

National Tiger Conservation Authority (NTCA): For coordinating disaster response in Tiger Reserves.

Wildlife Crime Control Bureau (WCCB): To monitor and prevent poaching/illegal trade during the chaos of disasters.

Central Zoo Authority (CZA): To oversee the safety and contingency planning for recognized zoos.

Forest Protection Division: For managing forest fires and coordinating with the National Disaster Management Authority (NDMA).

Wildlife Institute of India (WII): To serve as the primary technical knowledge partner for capacity building, research and developing science-based protocols for wildlife rescue and rehabilitation.

National and State Human Wildlife Conflict (HWC) Mitigation Forums:

To ensure cross-sectoral coordination for wildlife emergencies, the National HWC Mitigation Forum and corresponding State HWC Mitigation Forums shall be integrated into the disaster management framework. These forums facilitate dialogue between forest

departments, disaster management agencies, and civil society to address complex wildlife challenges. Operating in an advisory capacity to the NDMA and SDMAs, respectively, these forums facilitate dialogue between forest departments, disaster management agencies, and civil society to address complex wildlife challenges such as mass displacement and disease spillover.

3.2.4 National Institute of Disaster Management (NIDM)

The NIDM has the mandate for human resource development, capacity building, training, research, documentation, and policy advocacy in the field of disaster management. Its key role in AiDRR is to design and conduct specialized training modules for veterinary professionals, para-veterinarians, and other stakeholders on the management of animals in emergencies.

3.2.5 Animal Welfare Board of India (AWBI)

The Animal Welfare Board of India (AWBI) is a statutory body under the Prevention of Cruelty to Animals (PCA) Act, 1960. Its primary mandate is to promote animal welfare and protect animals from unnecessary pain or suffering. As the principal national body for animal welfare, its role in the disaster management framework is multifaceted and critical across all phases of the disaster cycle.

Key functions of the AWBI relevant to Animal-Inclusive Disaster Risk Reduction (AiDRR) include:

- **Advisory Role:** The AWBI is mandated to advise the Central and State Governments on animal welfare issues and the amendments required in animal protection laws. In a disaster context, it serves as the primary advisor for integrating welfare principles into national and state disaster management policies.
- **Financial Assistance for Disasters:** The AWBI provides direct financial support to affected animals through its "Scheme for Relief to Animals during Natural Calamities.". This scheme provides funds for fodder, shelter, and medical attention through its network of recognized Animal Welfare Organizations (AWOs), making it a crucial financial resource during the response and recovery phases.
- **Regulatory and Oversight Functions:** The Board is responsible for implementing the rules notified under the PCA Act. This includes the PCA (Establishment and Regulation of SPCAs) Rules, 2001, where the AWBI is empowered to examine annual reports from District SPCAs and provide directions for their effective functioning. This establishes its role in ensuring the readiness and accountability of district-level animal welfare bodies.
- **Humane Education and Awareness:** A core function of the AWBI is to impart humane education and create public awareness regarding the prevention of cruelty to animals. This mandate can be leveraged to disseminate preparedness and response messages to the public, animal owners, and other stakeholders.

3.2.6 Ministry of Health and Family Welfare (MoHFW)

The Ministry of Health and Family Welfare acts as the lead agency for biological disaster response, tasked with managing zoonotic disease risks through a One Health framework in collaboration with veterinary officials. Key responsibilities include conducting joint surveillance for transmissible diseases and ensuring appropriate response to mitigate the adverse effects of disasters on public health. To implement these at the field level, the Ministry executes its surveillance and disease control functions through specialized technical bodies and established national programs. The specific operational roles of these networks, particularly the National Centre for Disease Control (NCDC), are further detailed in sub-section 3.4.4.

3.3 Institutional Framework for AiDRR at the State and Local Level

An effective disaster management is contingent upon robust institutional mechanisms at the state, district, and community levels, where planning and implementation are of utmost importance.

At the state and district levels, the SDMAs, DDMAs, and UDMAs, respectively, are responsible for the overall management of disasters within their jurisdictions. They are mandated to prepare and implement State and District Disaster Management Plans. These authorities could integrate specific chapters or provisions on animal management into their respective plans, in consultation with the respective State Animal Husbandry and Fisheries Departments, to ensure that resources and responsibilities are clearly defined to be prepared before a disaster strikes.

3.3.1 State Disaster Management Authority (SDMA)

The State Disaster Management Authority (SDMA) is the apex body responsible for disaster management at the state level, established under the Disaster Management Act, 2005. Headed by the Chief Minister of the state, the SDMA formulates policies, plans, and guidelines for disaster management, approves the State Disaster Management Plan, coordinates its implementation, and recommends funds for mitigation and preparedness.

3.3.2 District Disaster Management Authority (DDMA)

The DDMA is responsible for planning, coordination and implementation of disaster management and to take such measures for disaster management as provided in the guidelines.

To ensure comprehensive animal welfare oversight, it is recommended that DDMAs utilize this provision to appoint a representative from either the district's Society for Prevention of Cruelty to Animals (SPCA) or a leading Animal Welfare Organisation recognized by the AWBI.

To ensure immediate response capabilities within densely populated areas, the Authority shall oversee the development of disaster rescue and first aid teams for animals at the ward level in cities. These decentralized teams will serve as the primary first responders for

urban wildlife and community animals during emergencies.

3.3.3 Urban Disaster Management Authority (UDMA)

The Disaster Management (Amendment) Act, 2025, establishes a separate Urban Disaster Management Authority (UDMA) for state capitals and major cities. The UDMA, chaired by the Municipal Commissioner, is responsible for preparing and implementing a dedicated Urban Plan.

3.3.4 State Animal Welfare Board (SAWB)

The State Animal Welfare Board (SAWB) is the apex statutory body for animal welfare at the state level. Its establishment and functional activation in every state have been directed by the Hon'ble Supreme Court of India and are time and again advocated for by the Central Government and the Animal Welfare Board of India (AWBI). The SAWB's primary purpose is to oversee the implementation of the Prevention of Cruelty to Animals (PCA) Act, 1960, and its associated rules within the respective state.

Composition and Structure: The SAWB is a multi-stakeholder body, typically chaired by the Principal Secretary or Secretary of the State's Animal Husbandry Department. Its membership is designed for comprehensive oversight and includes senior representatives from the State Forest, Home (Police), and Urban Development departments, as well as veterinary associations, municipal corporations, and prominent Animal Welfare Organizations (AWOs) operating within the state.

Role in Disaster Management: As the state's highest animal welfare authority, the SAWB's role in the disaster management framework is strategic and supervisory:

- **Policy Integration:** The SAWB is the nodal agency responsible for ensuring that the principles of these AiDRR guidelines are formally integrated into the State Disaster Management Plan (SDMP).
- **High-Level Coordination:** It serves as the primary high-level body for inter-departmental coordination during major disasters, leveraging its diverse membership to resolve logistical and resource bottlenecks.
- **Oversight of SPCAs:** The SAWB is responsible for supervising the preparedness and response activities of all District Societies for Prevention of Cruelty to Animals (SPCAs), ensuring they are functional and effective.
- **Resource Advocacy:** It plays a key role in advocating for the allocation of state funds for animal disaster preparedness and relief and can act as the primary channel for disseminating such funds.

The SAWB will be responsible for advising the SDMA on all animal-inclusive policies, overseeing the implementation of these guidelines, and coordinating the response of District SPCAs and recognized Animal Welfare Organisations across the state.

3.3.5 Society for Prevention of Cruelty to Animals (SPCA)

The Society for Prevention of Cruelty to Animals (SPCA) is the legally mandated animal welfare body at the district level. The PCA (Establishment and Regulation of SPCAs) Rules, 2001, require every State Government to establish an SPCA in every district within its jurisdiction. Its fundamental duty is to aid the government and the AWBI in the enforcement of the PCA Act at the grassroots level.

Composition and Structure: Crucially, the District SPCA is chaired by the District Collector, who also chairs the District Disaster Management Authority (DDMA). This places the SPCA at the very heart of the district's administrative and disaster management command structure. Its managing committee must include at least two representatives from local Animal Welfare Organizations, ensuring community participation.

Role in Disaster Management: The SPCA is the primary on-ground operational and coordinating body for animal disaster response in the district:

Operational Arm of the DDMA: Due to its leadership structure, the SPCA functions as the DDMA's operational arm for all animal welfare matters. It is the entity responsible for executing the animal-related components of the District Disaster Management Plan.

Statutory Powers: The SPCA is vested with significant legal powers under the PCA Act, including the authority to inspect, search, and seize animals in respect of which an offense is believed to be committed. This enforcement capability is critical during a disaster for accessing and rescuing abandoned or neglected animals.

Shelter and Care: The SPCA is mandated to run infirmaries and animal shelters. The State Government is legally required to provide adequate land for this purpose. These facilities become the default, legally recognized centers for emergency sheltering during a disaster.

Local Coordination Hub: The SPCA serves as the official government-recognized platform to coordinate the activities of all local AWOs, volunteers, and municipal bodies, preventing duplication and ensuring a structured, unified response.

3.3.6 Veterinary Emergency Response Units (VERU)

To address the need for specialized technical skills during emergencies, Veterinary Emergency Response Units (VERUs) are a key institutional component.

Mandate and Structure: VERUs are established as per Minimum Standards of Veterinary Education (MSVE) Regulations, 2016, in veterinary universities and colleges, comprise trained professionals and students equipped to handle disaster situations. Recognizing their importance, there is a greater need to establish similar VERUs in veterinary institutions in all the States/UTs to enable better institutional capacities for implementing effective emergency management initiatives.

Training and Resources: To be effective, each VERU requires adequate training and resources (staff, funds, equipment, etc.). They must periodically organize specialized species-specific animal rescue training for staff and stakeholders to rescue animals from

different emergencies (flood, fire, earthquake, etc.). All rescue team members must follow pre-vaccination schedules to ensure their safety.

Operational Role: In a disaster, VERUs serve as the primary technical and operational arm of the veterinary response. Their role is to:

- Act as a technical resource for State and District authorities.
- Serve as a 'surge' capacity, deploying trained teams to disaster-affected areas to conduct detailed assessments on the disaster's impact on animals, and provide emergency veterinary services.
- Coordinate directly with NDRF, SDRF, and local communities for animal rescue operations, preferably along with animal owners.

Regional Veterinary Emergency Response Units (VERU) are functional in veterinary universities of Palampur (North Himachal Pradesh), Chennai (South-Tamil Nadu), Guwahati (East-Assam), Anand (West-Gujarat), Jabalpur (Central-Madhya Pradesh) in addition to Patna (Bihar-Pilot VERU) for capacity building and emergency response. There is a greater need to establish similar VERUs in veterinary institutions in all the States/UTs.

To expand national capacity, all Veterinary Universities and Colleges are to be encouraged to explore the creation of a VERU, involving final year/internship students and faculty. This creates a sustainable pool of trained professionals who can be deployed as surge capacity during a major disaster and helps to fill the need for specialized training in disaster veterinary medicine

3.3.7 State and District Level Zoonoses Committees (SLZC/DLZC)

All states have established a multi-sectoral One Health co-ordination mechanism (MCM) by constituting State/District level Zoonoses Committees (SLZC/DLZC). The Committees formulate the terms of reference for networking between medical, veterinary, and allied sectors; review the burden of priority zoonotic diseases; and monitor progress of control efforts. These committees function as the primary node for inter-sectoral coordination. The Committees include representatives from Health, Animal Husbandry, Forest/Wildlife departments, and District Administration.

3.3.8 State Forest Departments (SFD)

The State Forest Department acts as the Nodal Agency for Wildlife at the state and district levels. Their key responsibilities include:

Nodal Authority: Chief Wildlife Warden (CWLW) to lead decision-making for wildlife evacuation, rescue, or euthanasia during disasters.

Operational Response: Deployment of Rapid Response Teams (RRTs) equipped with veterinary support for wild animals.

Coordination: Collaborating with the State Disaster Management Authority (SDMA) to ensure wildlife issues are integrated into the State Disaster Management Plan (SDMP).

3.4 Detailed Stakeholder Roles and Responsibilities for Coordination

3.4.1 Department of Animal Husbandry at the Central and State levels

Certain formal mechanisms are required to ensure seamless coordination and prevent duplication of efforts among the various agencies involved in the response.

The Department of Animal Husbandry (AHD) at the state level, and the Department of Animal Husbandry and Dairying (DAHD) at the central level, function as the primary technical and operational command for all animal-related disaster response activities. Their coordination role is pivotal and operates across multiple axes:

- **Vertical Coordination (Intra-Departmental):** The State AHD acts as the command center, directing its network of District and Block-level veterinary officers, hospitals, and mobile veterinary units. It is responsible for mobilizing departmental personnel, deploying veterinary emergency teams and managing the supply chain for essential items. At the national level, the DAHD coordinates with multiple State AHDs, particularly for mobilizing resources across state lines, such as arranging "fodder trains" from surplus states to deficit states during droughts or floods.
- **Horizontal Coordination (Inter-Departmental):** The AHD is the linchpin that connects animal-centric operations with the broader disaster management structure. Its key collaborations include:
  - **With Disaster Management Authorities (SDMA/DDMA):** The AHD serves as the principal technical advisor to the SDMA and DDMA, providing them with real-time data on animal populations, vulnerability maps, damage assessments, and resource needs. All AHD field operations are conducted under the overall command and control of the relevant DDMA.
  - **With Rescue Forces (NDRF/SDRF):** While the NDRF/SDRF provides the primary rescue capability, the AHD provides the essential technical veterinary guidance. AHD personnel advise rescue teams on humane handling techniques for different species, perform on-site triage for injured animals, and administer life-saving first aid, ensuring that rescues are conducted safely and effectively.
  - **With Public Health & Medical Departments:** This coordination is critical for upholding the "One Health" principle. The AHD works jointly with public health officials on the surveillance of zoonotic diseases, and managing the scientific disposal of carcasses to prevent contamination and disease outbreaks.
  - **With the Forest Department:** In disasters impacting wildlife, the AHD collaborates with the Forest Department to rescue and treat injured wild animals, manage increased human-wildlife conflict at the fringes of protected areas, and plan for long-term habitat rehabilitation.

- **AHD actions during the different disaster phases:**
  - **Before Disaster:** Identify sites for animal camps, advise on feed and water arrangements, and identify sites for carcass disposal.
  - **During Disaster:** Rescue stranded animals in coordination with NDRF/SDRF. Take stock of emergency feed, water, shelter, and veterinary care services.
  - **After Disaster:** In coordination with States/UTs, plan restocking of animals with adequate training and biosafety protocols.

Dept. of Animal Husbandry (State/UT)		
Before Disaster (Preparedness)	**During Disaster (Response)**	**After Disaster (Recovery)**
Early Warning & Vulnerability: Based on forecasts, take preparatory steps for feed, water, and medicine availability. Assess the impact of different disasters on livestock and develop surveillance strategies using GIS and risk mapping. **Resource Identification:** Assess and inventory available manpower (vets, para-vets), review preparedness of veterinary facilities, and ensure adequate storage of medicines, vaccines, and PPE. **Animal Camps:** Identify sites for animal camps with basic facilities. **Health Campaigns:** Conduct pre-flood mass vaccination and deworming of animals for economically important diseases. **Feed and Fodder Security:** Prepare a contingency plan for an adequate supply of fodder and fodder seeds. Establish protocols for safe stocking of feed and fodder for emergency supply. **Carcass Disposal:** Pre-identify equipment, logistics, manpower, and possible sites for the safe disposal of carcasses.	**Rescue Operations:** The State AHD will constitute and deploy Animal Rescue Teams. These teams, with assistance from NDRF/SDRF, will rescue stranded animals and shift them to safer locations/ camps. Animal camps should be organized near human relief camps where possible. **Emergency Veterinary Care:** Arrange for treatment of injured/sick animals, including fluid therapy and preventive vaccinations against prevailing diseases. Post-disaster, deworm all rescued animals with a suitable broad-spectrum anthelmintic. **Emergency Feed and Fodder Supply:** Coordinate with the Railway Authorities for fodder transportation. Enrich straw using urea-molasses treatment to meet nutritional requirements. **Management of Epidemics:** Be prepared to manage common post-disaster diseases like Foot and Mouth Disease, Hemorrhagic Septicemia, Anthrax, etc., through vaccination, deworming, and disinfection.	**Disease Surveillance:** Deploy Disease Surveillance Teams to affected areas for active surveillance, sample collection, and testing to prevent the spread of infection. **Carcass Disposal:** Arrange for the safe disposal of all carcasses by following zoo-sanitary measures. The State AHD shall constitute and deploy trained Animal Carcass Retrieval Teams. **Restocking/ Repopulation:** Plan and implement the restocking of animals with adequate biosafety protocols.

Table 1: Roles and Responsibilities of the Department of Animal Husbandry by Disaster Phase.

3.4.2 Department of Fisheries at the Central and State levels

Department of Fisheries at the central and state level serves as the nodal agency for all fisheries and aquaculture related disaster response activities.

The Department of Fisheries is tasked with directing its network of district and block-level fisheries officers, extension personnel, and field functionaries. It is responsible for mobilising departmental staff, deploying fisheries emergency response teams, and coordinating rapid field assessments of damage to farms and allied infrastructure. Additionally, the department can facilitate technical assistance from its subordinate offices/institutions.

3.4.3 Wildlife and Forest Authorities (Central & State)

Role: To serve as the primary custodians of wildlife and forest resources, ensuring their protection, rescue, and rehabilitation during all phases of a disaster.

Responsibilities at the Central Level (MoEFCC): The Forest Protection Division coordinates national policy on forest fire management and disaster mitigation, while statutory bodies like the Central Zoo Authority (CZA), National Tiger Conservation Authority (NTCA), and Wildlife Crime Control Bureau (WCCB) enforce regulatory standards for zoos, tiger reserves, and wildlife crime prevention respectively.

Responsibilities at the State Level (State Forest Departments & Zoo Management):

Nodal Authority: The Chief Wildlife Warden (CWLW) acts as the primary decision-maker for all wildlife-related emergencies, authorizing rescue, tranquilization, or translocation of animals.

Operational Response: Deploy skilled Rapid Response Teams (RRTs) and veterinary units equipped with tranquilizers, cages, and transport vehicles for rescuing stranded or injured wildlife.

Zoo & Protected Area Planning: Ensure every Zoo, National Park, Wildlife Sanctuary and Tiger Reserve maintains an updated, site-specific Disaster Management Plan, including evacuation routes and food stockpiling, in compliance with CZA and NTCA guidelines.

Conflict Management: Mitigate human-wildlife conflict (HWC) arising from the displacement of animals into human habitations during floods or cyclones.

3.4.4 National Centre for Disease Control (NCDC) and Public Health Networks

The National Centre for Disease Control (NCDC) and existing national programmes, the Integrated Disease Surveillance Programme (IDSP) and the National One Health Programme for Prevention and Control of Zoonoses (NOHP-PCZ) in particular, shall be structurally integrated as core technical and surveillance support platforms for zoonotic risk management during disasters. Furthermore, disaster management authorities should implement the NCDC's established network, which can be leveraged to facilitate dynamic, cross-sectoral coordination and active disease surveillance between the public health and veterinary sectors nationwide during a crisis. This must include the rapid sharing of surveillance data utilizing existing IT platforms like IDSP/Integrated Health Information

Platform and NADRES, enabling quick generation of heat maps and identification of disease origins and transmission factors.

3.4.5 DDMA and UDMA

The DDMA, headed by the District Collector/Magistrate, shall act as the nodal agency for integrating animal welfare into the district's disaster resilience framework. Its primary mandate is to ensure that the District Disaster Management Plan (DDMP) explicitly incorporates livestock protection, fodder security, and veterinary contingency planning as integral components of disaster risk reduction.

To implement these Guidelines effectively, the DDMA shall liaise with the District Animal Husbandry Department (AHD) and the District Fisheries Department. The DDMA shall facilitate inter-departmental coordination, authorize the requisite funding for emergency veterinary supplies and fodder banks, and ensure that AHD and Fisheries personnel are thoroughly integrated into the Incident Response System (IRS) to execute mitigation, response, and rehabilitation operations.

For the DDMA, first, the senior-most officer of the District Animal Husbandry Department shall be a permanent member to provide authoritative technical guidance. It is recommended for DDMA to formally appoint a representative from either the district's Society for Prevention of Cruelty to Animals (SPCA) or a leading Animal Welfare Organisation recognized by the AWBI.

In their respective jurisdictions, the Urban Disaster Management Authority (UDMA) shall exercise the same powers and responsibilities as the DDMA, applying all provisions of these Guidelines.

It is recommended that the senior-most veterinary officer of the Municipal Corporation and a representative from the District SPCA be included as permanent members of the UDMA to ensure that urban animal issues, including the management of companion and community animals, are fully integrated into urban disaster planning.

3.4.6 Animal Welfare Board of India (AWBI)

The Animal Welfare Board of India (AWBI) serves as the central coordinating body for the national non-governmental animal welfare sector and as the supervising authority for district-level SPCAs, making it an indispensable part of any disaster response coordination mechanism.

Its coordinating functions are executed through the following channels:

- **Coordination of Animal Welfare Organizations (AWOs):** The AWBI formally recognizes AWOs and Gaushalas across the country. It is mandated to "co-operate with, and co-ordinate the work of, associations or bodies" dedicated to animal protection. During a disaster, the AWBI can activate this extensive network, coordinate the deployment of resources and personnel from these recognized AWOs, and channel financial assistance to them, preventing duplication of efforts and ensuring aid reaches where it is most needed.

- **Co-ordination with State Animal Welfare Boards (SAWBs):** The AWBI shall provide policy guidance, technical support, and standardized operating protocols to all SAWBs.
- **Supervision of District SPCAs:** The PCA (Establishment and Regulation of SPCAs) Rules, 2001, grant the AWBI direct oversight over the District SPCAs. The Board is empowered to review its functioning and issue binding directions to ensure it effectively implements the provisions of the PCA Act. This creates a formal chain of command from the national level (AWBI) to the district level (SPCA), which is essential for a structured and accountable disaster response.

3.4.7 State Animal Welfare Board (SAWB)

At the state level, the State Animal Welfare Board (SAWB) will be the primary body for coordinating all animal-related disaster response efforts. Its responsibilities shall include:

- **Overseeing District SPCAs:** Acting as the supervising authority for all District Societies for Prevention of Cruelty to Animals (SPCAs), ensuring their preparedness plans are in place and their response activities are effective.
- **Liaison with the National Authority (AWBI):** The SAWB acts as the primary state-level node for the Animal Welfare Board of India. It is responsible for aligning state disaster management plans with national AWBI guidelines and submitting consolidated reports on state-level preparedness and response activities to the AWBI.
- **Inter-Departmental Resource Mobilization:** Leveraging its multi-departmental membership to facilitate the rapid mobilization of resources (e.g., transport from the Home Department, fodder/land access from the Revenue/Forest Department).
- **State-Level Reporting:** Consolidating After-Action Reports and needs assessments from District SPCAs to provide a comprehensive state-wide picture of the disaster's impact on animals to the SDMA and the AWBI.

3.4.8 Society for Prevention of Cruelty to Animals (SPCA)

The Society for Prevention of Cruelty to Animals (SPCA), established at the district level, is not merely a collaborating agency but is designed to be the primary operational and coordinating hub for all animal welfare and protection activities during a disaster. Its unique legal structure and composition make it central to the local response.

- **Direct Integration with District Administration:** In most states, the SPCA is statutorily chaired by the District Magistrate/Collector, who also heads the District Disaster Management Authority (DDMA). This dual role places the SPCA at the very center of the disaster response command structure. It acts as the de facto operational arm of the DDMA for all animal-related matters, ensuring that animal welfare issues are directly addressed within the district's official disaster response plan.

- **Coordination with Law Enforcement and Local Government:** The SPCA's managing committee typically includes representatives from the district police, municipal corporations, and other relevant government departments. This composition facilitates seamless on-ground coordination for:
  - Enforcing evacuation orders for animals.
  - Securing access to private properties to rescue abandoned animals.
  - Managing law and order at animal shelters and relief sites.
  - Coordinating the scientific disposal of carcasses with municipal authorities.
- **Hub for Non-Governmental Actors:** The SPCA is legally mandated to include representatives from local Animal Welfare Organizations (AWOs). This positions it as the official platform to coordinate and streamline the efforts of all NGOs, private shelters, and individual volunteers in the district. During a disaster, the SPCA can direct these resources, assign operational areas, and facilitate coordinated response, ensuring a unified and efficient front..
- **Vertical Reporting and Liaison:** The District SPCA acts as the designated liaison between ground-level operations and higher authorities. It provides verified reports and data to the State Animal Welfare Board (SAWB) and the Animal Welfare Board of India (AWBI), ensuring that state and national bodies receive accurate information to guide their support and oversight functions.

3.4.9 Local authorities

The Panchayati Raj System integrates animal welfare into the core of rural governance through a coordinated three-tier structure, guided by the Village Disaster Management Plan (VDMP). Gram Panchayats are responsible for ground-level execution, including identifying first responders, managing relief centers, and ensuring safe carcass disposal. Block Panchayats facilitate logistics by conducting stock-taking of veterinary assets, arranging evacuation transport, and establishing emergency communication links. At the apex, District Panchayats handle strategy and resource mobilization, funding structural mitigation measures such as elevated cattle mounds and early warning systems, while overseeing capacity-building training to standardize response capabilities across the district.

Urban Local Bodies (ULBs) function as self-governing institutions that incorporate animal disaster risk reduction into broader economic and social frameworks. Their mandate involves integrating veterinary infrastructure into applicable Master Plans and enforcing zoning regulations to keep animals away from hazardous zones like floodplains. Ward Committees shall ensure early warnings reach animal owners.

3.4.10 State and District Wildlife Coordination Mechanisms

To ensure seamless integration of wildlife concerns into disaster management, the following three-tier structure shall be operationalized:

State-level Coordination Committee (SLCC): Chaired by the Chief Secretary with the Chief Wildlife Warden (CWLW) as Member Secretary, this body oversees the alignment of wildlife mitigation measures with State Disaster Management Plans (SDMP) and provides high-level policy recommendations for institutional capacity building.

State HWC Mitigation Forum: Chaired by the CWLW, this forum serves as the platform for broad-based stakeholder dialogue to develop and update the State HWC Strategy and Action Plans (HWC-SAP).

District-level Coordination Committee (DLCC): Functioning as the key integration unit, the DLCC is chaired by the District Collector. Since the Collector also chairs the District Disaster Management Authority (DDMA), this body ensures that wildlife mitigation and rescue protocols are integrated into district development and disaster response plans.

3.4.11 Specialized Rescue Teams

The core mandate of specialized rescue teams (NDRF, SDRF, VERU, etc.) is the extension of humanitarian service to all sentient beings, operating with a paramount focus on "Rescuer Safety First." Their actions are guided by principles of technical proficiency, discipline, and inter-agency collaboration under a unified command structure like the Incident Response System (IRS). They are the government's primary tool for executing complex and high-risk animal rescues, providing both technical skill and public reassurance during a crisis. It is encouraged for ex-servicemen from Veterinary Corps to register themselves with District Disaster Management Authorities to be a force multiplier.

To guarantee preparedness for operations, the NDRF and SDRF must be outfitted with specialized animal rescue equipment, including lifting harnesses and transport cages. The comprehensive outfitting should include heavy-lifting systems to mitigate the risk of crush injuries during large-animal extractions, advanced apparatus for the safe handling of distressed animals, and specialized equipment tailored for aquatic operations. Furthermore, under the State Disaster Response Fund (SDRF) norms, specific allocations shall be earmarked for the rescue and rehabilitation of wildlife populations in zoos and sanctuaries situated within vulnerable zones in conjunction with Forest Department officials.

- **Before Disaster:** Organize specialized, species-specific animal rescue training for staff. Ensure all rescue teams follow pre-vaccination schedules for their own safety.
- **During Disaster:** All animal rescues should follow humane rescue and safe handling techniques to save lives and not to create any further harm or injury.
- **After Disaster:** Document the total number of species rescued and report to government authorities for reuniting with owners.

3.4.12 Animal Owners and Local Communities

The community's role is founded on the principle of being the absolute first responder. As custodians of invaluable local and indigenous knowledge, they form the bedrock of

grassroots resilience. Their mandate is to take proactive responsibility for their own animals and to organize collective action that protects all animals within their community (owned, community, and stray), thereby reducing the burden on official response agencies.

- **Before Disaster:** Ensure clear identification marking of all animals with corresponding records as per species. Maintain a first aid kit for the family, including animals, with important documents.
- **During Disaster:** Evacuate along with animals to safe shelters as per instructions. Support fellow community members and animal owners in evacuation and transportation.
- **After Disaster:** Coordinate with local authorities to share information on disaster loss and asset damages to avail necessary relief assistance.

3.4.13 Collaboration with Non-Governmental Stakeholders

An effective response requires the active participation of non-governmental actors, including NGOs, community groups, and the private sector.

To formalize this collaboration, disaster management authorities at all levels should prioritize partnerships with Animal Welfare Organisations (AWOs) that are formally recognized by the Animal Welfare Board of India (AWBI), as per its established procedures.

Non-Governmental and Animal Protection Organizations: Specialized animal welfare NGOs possess technical expertise and resources that are invaluable during a response. These organizations should be integrated into the formal response structure to assist with animal rescue, sheltering, veterinary care, and conducting needs assessments.

Animal Welfare Organisations (AWOs) are legally recognized under the Prevention of Cruelty to Animals Act, 1960, and the Animal Birth Control Rules, 2023, as key implementing partners. To leverage their specialized expertise and resources during a crisis, all District Disaster Management Authorities (DDMAs) are encouraged to develop collaborations with AWOs registered with the Animal Welfare Board of India. These collaborations will formalize the role of AWOs within the Incident Response System (IRS) for specific response activities such as technical rescue, emergency sheltering, and management of community animals, thereby ensuring a coordinated and accountable partnership.

Community Groups: Local communities and animal owners are always the first responders in a disaster. Their participation in preparedness planning and response implementation is essential. Community-based organizations and trained volunteer groups, such as Community Disaster Response Forces, should be empowered to assist with local-level rescue, care, and information dissemination.

Private Sector and Corporate Bodies: The corporate sector plays a major role not only in post-disaster relief but in the prevention and mitigation planning phases. In line with the National Disaster Management Framework, the corporate sector is recommended to be involved in awareness generation, disaster preparedness, and mitigation planning.

These bodies shall be engaged to:

- Provide immediate assistance for ameliorating the suffering of the affected populace and livestock.
- Integrate disaster risk reduction into corporate social responsibility (CSR) initiatives.
- Participate in the planning process and response mechanisms through sensitization and training programs coordinated by the NDMA, SDMA, and DDMA.

3.5 Budgetary Allocations and Contingency Funds

Dedicated financial resources are integral for implementing preparedness measures and mounting an effective response.

Current Funding Mechanisms: A mechanism known as "Flexi Funds" exists within the National Disaster Management Plan of the Department of Animal Husbandry and Dairying (DAHD). This provision in the Ministry of Finance guidelines allows for up to 10% of the funds from centrally sponsored schemes to be utilized for emergency activities with the approval of the competent authority. At the district level, the District Collector is granted financial powers to draw money for disaster relief and rehabilitation under the provisions of the General Financial Rules and Treasury Codes.

State Disaster Response Fund (SDRF): In cases where a disease outbreak in animals is declared an epidemic or calamity by the state, financial support for relief to farmers may be claimed under SDRF/NDRF norms. For this to be applicable, the State must have a provision for such compensation in its State Disaster Management Plan and notify the disease for relief purposes.

Mitigation Funds (NDMF/SDMF): For proactive risk reduction, the National Disaster Mitigation Fund (NDMF) and the State Disaster Mitigation Fund (SDMF) can be availed. The NDMF integrates Disaster Risk Reduction (DRR) through a bottom-up approach, extending mitigation initiatives directly to the Panchayati Raj Institution (PRI) level. These funds support institutional strengthening, policy integration in DRR development planning by PRIs, and foster collaboration for effective local disaster mitigation across disaster-prone districts.

Preparedness and Capacity Building (PCB) Window: As recommended by the XV Finance Commission, a dedicated funding window comprising 12.5 percent of both the NDRF and SDRF corpus is allocated for Preparedness and Capacity-Building.

At the state level, this window shall be exclusively utilized for the capacity building of State Disaster Management Authorities (SDMAs), training activities, and the purchase of emergency equipment and response facilities. It supports projects that strengthen early warning systems, promote disaster awareness, and enhance the capacity of response forces.

Animal Welfare Relief Funds: A primary source of funding is the Animal Welfare Board of India's 'Scheme for Relief to Animals during Natural Calamities', which is designed to provide funds for fodder, shelter, and medical attention for affected animals through

recognized AWOs. DDMAs must establish protocols to facilitate and expedite applications to this scheme during a disaster.

To ensure rapid and accountable disbursal of funds at the state level, a dedicated 'State Animal Disaster Response Fund' could be established. This fund can be administered under the oversight of the State Animal Welfare Board (SAWB), which can assume responsibility for allocating resources to District SPCAs and recognized AWOs based on verified needs assessments during a declared disaster.

State and municipal budgets could include specific financial allocations for the management of community animals during disasters, covering costs for their capture, sheltering, veterinary treatment, and humane population control measures.

3.6 Insurance Schemes and Liability Provisions

Financial risk transfer mechanisms, such as insurance, are important tools for helping animal owners recover from the economic impact of a disaster.

Livestock Insurance Schemes: Special insurance for cattle and crops in disaster-prone areas is a recognized mitigation strategy. These schemes provide a financial safety net by compensating farmers for the loss of their livestock, which are often their most valuable assets. Government-supported programs, such as the Component for Attention of Natural Disasters (CADENA) in Mexico, can help make insurance more accessible by covering a portion of the premium for low-income producers.

Linking Insurance to Risk Reduction: Insurance, an important instrument for managing risk, possesses the potential for moral hazard if structured inappropriately. There are reported instances wherein farmers neglected their animals, with the expectation they will be compensated for the loss without verification. This ignores the wider economic impact of lost productivity. Hence, for insurance to be a truly potent mitigation tool, it must be linked to on-farm preparedness and risk reduction measures. Insurance policies are recommended to include clauses that insist on simple risk reduction and preparedness measures at the farm level as a prerequisite for pay-outs, which require animal owners to take reasonable steps to protect their animals, such as having an evacuation plan or a resilient shelter, to be eligible for a payout. This approach incentivizes proactive behaviour and ensures that insurance schemes contribute to improving animal welfare and resilience, rather than simply compensating for preventable losses. This overall reduces losses for farmers and lowers compensation costs for insurers.

04 Risk Assessment and Hazard Analysis

A systematic disaster risk assessment is the cornerstone for developing effective mitigation and preparedness strategies. This process entails a detailed assessment of potential hazards alongside an examination of the vulnerabilities of animal populations and the infrastructure that supports them.

To ensure full alignment with the national legal framework, all risk assessment and hazard analysis activities conducted under these guidelines shall adopt the formal definitions provided in the Disaster Management (Amendment) Act, 2025, for key terminologies, including 'disaster risk', 'hazard', 'exposure', and 'vulnerability'.

The objective is to understand the nature and extent of risks, thereby avoiding or limiting the adverse impacts of hazards on animals and their related communities. To better understand these impacts, it is imperative to adopt the vulnerability paradigm. This approach argues that disasters are "human-induced, socially constructed events". The hazard itself– the cyclone, the flood does not solely cause the disaster. Rather, the disaster results from the combination of the hazard with pre-existing social, economic, and physical vulnerabilities. Risk can be understood as a function of these components, often represented by the formula :

Disaster Risk = Hazard x Vulnerability / Capacity.

This framework shifts the focus from the hazard itself to the social and economic factors that make people and their animals unsafe in the first place, underlining that risk can be reduced by decreasing vulnerability and increasing coping capacity.

4.1 Identification of Animal-Related Hazards

4.1.1 The Systematic Classification of Disasters

An effective disaster risk reduction plan begins with the identification and classification of hazards. For standardized national planning, disasters are officially grouped into five broad categories:

1. Water and Climate-Related Disasters: Drought, flood, cyclone, heavy rains, cloudburst, hailstorm, tsunami, heat wave, cold wave.
2. Geological Disasters: Earthquakes, volcanoes, landslides.
3. Chemical, Industrial, and Nuclear Disasters.
4. Accident-Related Disasters: Air crashes, rail collisions, etc..
5. Biological Disasters: Epidemics and pandemics affecting animal and human health.

Disasters can also be classified based on the onset of events, as either rapid onset (like an earthquake, a cloudburst) or slow onset (drought). An effective disaster risk reduction plan

begins with the identification of these hazards, which can be broadly categorized based on their origin and onset.

4.1.2 Multi-Hazard Threats and Their Impact on India's Animal Populations

India's unique geo-climatic profile makes it prone to multiple natural and anthropogenic hazards, placing substantial risk on its large animal populations. The impact of these hazards is staggering. According to Central Water Commission data spanning 1953 to 2011, as reported in the TANUVAS Technical Reporter, an average of 97,000 cattle were lost due to floods and heavy rains alone every year in India. As outlined in the 2020 report 'Protecting India's Animals To Safeguard People's Futures', an analysis of population distribution in hazard-prone areas reveals that 55% of India's buffaloes, 47% of its pigs, 41% of its goats, and 38% of its cattle, 65% of camels, 61% of sheep, and 35% of goats are most vulnerable to floods.

The potential threats and key elements at risk during common disasters must be clearly understood for effective planning:

Hydrological and Meteorological Hazards: Floods, whether slow-onset or flash floods, lead to the drowning of animals, the destruction of habitat and pasture, an increased incidence of diseases, and the contamination of water sources with sudden organic loads that cause oxygen depletion and mass fish kills. The onset of drought gives rise to systemic vulnerabilities, ranging from malnutrition and distress selling in livestock due to feed scarcity, to the deterioration of inland water quality through rising salinity and pollutants. Cyclones and storm surges inflict direct trauma on animals through flying debris. Critical assets, including animal shelters and aquaculture facilities, are also destroyed. This leads to infrastructure disruption and potential biodiversity risks due to the escape of farmed stock.

Geophysical Hazards: Earthquakes cause mortality and injury to animals through the collapse of shelters and other structures. Landslides and mudflows, often triggered by heavy rains or seismic activity, threaten anything located on or at the base of steep slopes that can bury animals and destroy grazing lands.

Climatological Hazards: Wildfires and forest fires cause burn injuries, smoke inhalation, and death, while also destroying grazing areas and natural habitats. Extreme temperatures, including heat waves and cold waves, lead to heat stress or hypothermia, which severely impact animal health, productivity, and survival.

Biological Hazards: Disease outbreaks are a significant hazard, often exacerbated by disaster conditions. Stress reduces immunity, while displacement and overcrowding in temporary shelters facilitate the spread of infectious and zoonotic diseases.

Underpinning these threats is climate change, which acts as a severe threat multiplier. It exacerbates vulnerability through prolonged heat stress, which suppresses immunity, and intensifying droughts that compromise fodder and water security, leading to livestock malnutrition. For wildlife, climate-induced ecosystem disruptions - such as habitat loss and forest fires-force unnatural migrations, directly escalating human-wildlife conflict.

Additionally, these environmental shifts alter disease vectors, increasing the risk of zoonotic spillover. To remain effective, all hazard analyses and mitigation strategies must actively integrate Climate Change Adaptation (CCA).

4.1.3 Catalysts of Zoonotic Spillover

Disaster events can expedite spillover events, the cross-species transmission of pathogens from natural reservoirs to new hosts. Risk assessment must account for the following drivers:

- **Ecological Disruption:** Deforestation, flood-induced displacement, and forest encroachment that blur boundaries between human and animal populations.
- **Behavioral Factors:** Encroachment into natural habitats.
- **Climate Factors:** Environmental changes leading to increased vector populations and altered migration patterns of reservoir hosts.

4.2 Vulnerability Assessment

Vulnerability refers to the characteristics and circumstances of a community or asset that make it susceptible to the damaging effects of a hazard. Assessing the specific vulnerabilities of different animal populations has a bearing on developing targeted risk reduction strategies.

4.2.1 Vulnerability of Livestock Holdings

The means of sustenance for the majority of India's rural population are innately associated with livestock, making these holdings highly vulnerable. Intensive farming systems, or Concentrated Animal Feeding Operations (CAFOs), are, by and large, vulnerable. In certain intensive animal farming units, animals such as pigs and poultry birds are housed in cages and crates with restricted access to food, water, and ventilation. Additionally, cattle are also subject to permanent tethering in intensive dairy units. Similar to intensive terrestrial farming, aquaculture holdings are highly vulnerable due to their immobility. Fish in ponds, tanks, or cages are essentially "tethered" by their aquatic environment and cannot escape structural failures or deteriorating water quality during floods or power outages. These systems are placed at great risk during power outages, and the extreme confinement gives the animals no chance for escape from floods, fires, or structural collapse. The public health ramifications arising from the concentration of animals and their waste also create a severe risk for environmental contamination due to disasters.

Loss of livestock can push marginalized farming communities into poverty. Vulnerability is aggravated by the absence of disaster-resilient shelters, poor feed and fodder storage, and limited access to emergency veterinary services. Intensive farming systems such as poultry and dairy farms are also at risk due to over-reliance on power supply, ventilation, feed, and supply chains. Women, with a decisive role in livestock care, are vulnerable in particular, as the death of animals disproportionately affects household income and food security.

4.2.2 Vulnerability of Companion Animal Populations

Companion animals are entirely reliant on their owners, making them vulnerable during disasters. A strong human-animal bond at times leads owners to refuse evacuation or re-enter hazardous areas if provisions are not made for pets, risking both people and responders. The lack of pet-friendly emergency shelters complicates evacuations. Animals left behind are exposed to starvation, dehydration, debris injuries, and conflicts with stray animals. Moreover, the absence of permanent identification, such as microchips or tags, hampers reunification with owners.

4.2.3 Vulnerability of Wildlife and Their Corridors

Wildlife populations face high vulnerability due to direct deaths and habitat destruction. Disasters like floods and wildfires force animals to leave their natural habitats, usually pushing them into human settlements, leading to conflicts. Damaged wildlife corridors contribute to population fragmentation and loss of genetic diversity. Zoo animals are especially vulnerable because of confinement and specific diet, and environmental needs, which may not be met under disaster conditions.

4.2.4 Vulnerability of Community Animal Populations

Community animals, are plagued with frailties as they lack the direct care and protection afforded to owned animals. Their welfare is poor even before a disaster, making them less resilient to its impacts. These populations are highly vulnerable to injury from debris, starvation when informal food sources disappear, and exposure to the elements without access to adequate shelter. Also, they can become major public health hazards, acting as vectors for zoonotic diseases, especially when their populations concentrate in new areas or come into increased contact with displaced humans.

4.2.5 Socially Situated Vulnerabilities

Animals experience socially situated vulnerabilities, which relate to how human communities assess and value their moral standing and function. The various kinds of animals covered under the Guidelines are-

Companion Animals: Close relationships with animals like dogs and cats have propelled these "near-person" companion animals into the victims' arena, often receiving prioritized support.

Livestock Animals: These animals tend to be more vulnerable than companion animals due to their position on the sociozoologic scale. They often suffer disproportionately, experiencing more injuries, disease, and loss of life, especially if no disaster management plan is in effect.

Aquatic Species: Due to the logistical infeasibility of evacuation, aquatic species suffer systematic exclusion from welfare-centric disaster planning, despite their immense economic value to coastal and inland communities.

4.2.6 Veterinary Epidemiological Risk Assessment

An important component of vulnerability assessment is the specific analysis of disease risk. A Veterinary Epidemiological Risk Assessment must be conducted by qualified veterinary professionals as part of the initial Disaster Assessment and Needs Analysis (DANA). This assessment evaluates the potential for infectious disease outbreaks by analyzing key risk factors, including:

Pre-existing Conditions: The prevalence of endemic diseases in the affected region.

Population Density: The concentration of animals in temporary shelters or on limited high ground, which facilitates disease transmission.

Vector Proliferation: Environmental conditions (e.g., stagnant water after floods) that favor an increase in disease vectors like mosquitoes and ticks.

Contamination: The risk of water and feed source contamination from carcasses, sewage, and chemical spills.

Host Immunity: The general health and stress level of the animal population, which impacts their disease susceptibility.

This assessment is necessary for prioritizing prophylactic interventions like vaccination campaigns and implementing targeted biosecurity measures.

4.3 Mapping of Critical Infrastructure and Resources

The Disaster Management (Amendment) Act, 2025, mandates the National Disaster Management Authority (NDMA) to periodically 'take stock of the entire range of disaster risks in the country' and 'create a national disaster database'. To this end, State Authorities are encouraged to collate data from risk assessments, explicitly including animal populations and related critical infrastructure. State/District Animal Husbandry and Fisheries Departments, in coordination with the DDMAs/UDMAs, must conduct a comprehensive mapping of all veterinary facilities, animal shelters, fodder banks, safe evacuation routes, and pre-identified carcass disposal sites. An important component of preparedness is mapping critical infrastructure and resources needed for animal safety and welfare. This process involves identifying and geo-locating assets to enable a rapid and coordinated response during an emergency.

Preparedness requires the mapping of critical infrastructure and resources needed for animal safety. In addition to physical infrastructure, this mapping exercise must include an inventory of skilled human capital available within the district. The District Disaster Management Authority (DDMA), in coordination with the district AHD, shall map the number and location of all personnel trained under the AHD Skill Development Framework. This includes A-HELP agents and other professionals certified under relevant ASCI Qualification Packs. This human resource data is critical for accurately assessing the district's operational capacity and identifying gaps in trained personnel that need to be addressed during the preparedness phase.

To prevent information silos, State Disaster Management Authorities (SDMAs) shall mandate the integration of existing baseline animal data held by Animal Husbandry Departments (AHDs) into the disaster management database. Integration with the National Digital Livestock Mission (NDLM) can be leveraged to enhance real-time animal identification, traceability, and health monitoring during emergencies. DDMAs and UDMAs shall ensure they have direct access to regional AHD animal population and health related data to facilitate rapid vulnerability analysis. Each District Disaster Management Authority (DDMA), in close collaboration with the District Animal Husbandry Department, District Fisheries Department and the SPCA, is encouraged to conduct and update a comprehensive Animal-Inclusive Hazard, Vulnerability, and Capacity Assessment (A-HVCA) for its jurisdiction, preferably every three years. The A-HVCA must utilize a standardized GIS platform to ensure data interoperability which could be integrated into the district and state disaster databases.

To thoroughly implement this, the integration of climatic and environmental variables with human and animal disease surveillance data, including the geo-location of animals at risk and the incorporation of animal vulnerability data into pre-existing human risk maps, should be considered to support comprehensive vulnerability mapping, predictive modelling, and hotspot identification under a 'One Health' framework. In addition, district disaster management authorities should map the capacities and resources in both human and animal health sectors, including laboratory strengths, ongoing projects, and existing disease standard operating procedures (SOPs), to effectively target interventions.

All state and district authorities must conduct the A-HVCA mapping exercise and should refer to the official Earthquake, Wind, Flood, and Landslide Hazard Maps of India, as provided by the National Disaster Management Authority (NDMA). Key infrastructure to be mapped includes:

Veterinary Facilities: Locations and capacities of clinics, hospitals, and mobile veterinary units should be documented, including staff, medical stock, and diagnostic capacities.

Animal Shelters and Evacuation Sites: Pre-designated and assessed shelters must be mapped for suitability, resource availability, and accessibility.

Watering Points and Feed/Fodder Banks: Reliable water sources and emergency feed storage facilities should be mapped to ensure basic needs during crises.

Transportation and Evacuation Routes: Safe animal evacuation routes must be identified, along with available vehicles and handling equipment.

Carcass Disposal Sites: Pre-identified safe disposal points prevent disease spread and protect public health following animal mass casualties.

Wildlife Habitats and Corridors: Forest Departments must map critical infrastructure within Protected Areas and also cover all zones of wildlife movement, including migratory routes and the human-wildlife interface, prone to disasters.

4.4 Practical Assessment Tools

4.4.1 The Disaster Assessment Process

A systematic process is required to collect, record, analyse, and interpret information to address identified needs. The steps in disaster assessments constitute the following process:

- Identification of information needs/gaps and sources
- Data collection
- Data analysis and interpretation
- Reporting and information sharing
- Re-designing or modifying the response based on local need

4.4.2 Types of Disaster Assessments

Rapid Assessments: Conducted within a week following a disaster to get a broad overview of the situation for immediate decision-making.

Joint Rapid Assessments: Conducted by two or more organizations to plan joint interventions and resource mobilization.

In-Depth Assessments: Conducted ideally within the first month following a disaster for thematic sectors that require technical expertise and time for planning long-term recovery measures, such as droughts or epidemic outbreaks.

Continual Assessments: Used to continuously monitor the progress of interventions and take timely actions to meet planned deadlines.

Impact Assessments: Conducted at the end of any intervention to assess and measure the impact created to bring about a positive change in the disaster-affected areas.

Post-Disaster Needs Assessment (PDNA) for Animals: To formulate an effective and comprehensive recovery strategy, Disaster Management Authorities must shift their focus from conventional "damage assessments" to formalized Post-Disaster Needs Assessments (PDNA). Traditional damage assessments historically count deceased animals, which only serve to identify absolute loss. To prevent continued mortality and reduce the long-term financial burden of restocking programs, the PDNA must prioritize evaluating the urgent, ongoing requirements of the surviving animal populations.

- **Framework for Animal Needs Assessment:** The internationally recognized "Five Domains" (as listed in 2.3.1) of animal welfare shall serve as the baseline criteria for underpinning the PDNA and documenting the impacts of the disaster on affected populations. Any needs analysis conducted during the post-disaster phase must systematically evaluate the following parameters:
- **Type of Impact:** Identifying the specific hazard effects on the animal population

and their immediate environment.

- **Priority of Need:** Ranking interventions based on the most critical threats to life, health, and welfare.
- **Likely Duration of Suffering:** Estimating how long the compromised welfare conditions will persist without immediate intervention.
- **Likely Duration of Required Support:** Calculating the timeframe for which state or humanitarian support (e.g., emergency fodder, veterinary care) will be necessary before normal feeding and sheltering can resume.
- **Required Action:** Formulating targeted, evidence-based interventions to fulfill the identified needs, stabilize surviving herds, and secure community livelihoods.

4.4.3 The LEGS Framework for Livestock Assessment

To ensure a standardized and comprehensive approach, all responding agencies must utilize the Livestock Emergency Guidelines and Standards (LEGS) Assessment Checklist. This framework provides a structured methodology for gathering and analyzing strategic information across three core domains:

Role of livestock in livelihoods: This part ascertains the importance of livestock by examining their key uses (food, income, social, draught power), the percentage of household income derived from them, gender-differentiated roles in their management, and community coping strategies.

Nature and impact of the emergency: This section determines the direct impact on livestock and their management. It includes veterinary-specific assessments of changes in livestock condition, productivity, morbidity, and mortality rates, as well as the impact on access to grazing, water, markets, and veterinary services.

Situation analysis: This section analyses the operational environment, identifying key actors, available resources, and potential constraints such as security, infrastructure, and relevant policies or legal frameworks.

The conclusions from this structured assessment form the evidence base for selecting the most appropriate and effective technical interventions.

4.4.4 Management Effectiveness Evaluation (MEE) for Wildlife

The 'Management Effectiveness Evaluation (MEE)' framework can be utilised to assess the resilience of Protected Areas against pressures including climate change and disasters. State Disaster Management Authorities (SDMAs) and Forest Departments must align their review processes with the Ministry of Environment, Forest and Climate Change's MEE framework.

Authorities must actively mainstream Animal-inclusive Disaster Risk Reduction (AiDRR) indicators into the periodic MEE cycles conducted by WII and NTCA across all Protected Areas (including wetlands and coastal ecosystems) to specifically evaluate:

- **Emergency Readiness:** The adequacy of protective infrastructure, field staff,

and financial resources during a crisis.

- **Community Risk:** The socio-economic vulnerabilities of local fringe communities to disaster threats.
- **Post-Disaster Recovery:** The efficacy of habitat restoration and species preservation following extreme weather or structural hazards.

4.4.5 Practical Data Collection Tools

Data collection is the systematic process of gathering and measuring information to address research questions and evaluate outcomes. The primary tools for this purpose include interviews, which can be either structured with a fixed set of questions or semi-structured to allow for flexibility; Focus Group Discussions (FGDs), which generate synergistic insights from small, expert groups; and questionnaires, used to gather information from many respondents. Other main methods are observation, which provides direct, real-world data through either checklists or participatory engagement; case studies and stories of change, which present in-depth longitudinal examinations of specific instances or project impacts; and participatory methods like PRA and RRA, which use techniques such as mapping, trend analysis, and ranking exercises to understand situations from a local perspective.

4.5 Formal Framework for Animal Risk Analysis

According to Sawyer and Huertas in their 2018 book 'Animal Management and Welfare in Natural Disasters', a systematic analysis of animal risk (AR):

AR = Hazard + Animal Vulnerability/ Animal Preparedness

Where:

- AR: Animal Risk
- H: Probability of Hazard occurrence
- AV: Animal Vulnerability
- AP: Animal Preparedness

This framework allows planners to move from a descriptive list of threats to a quantitative assessment that can inform prioritization and resource allocation.

05 Mitigation Measures

Mitigation and prevention are the core pillars of a proactive disaster management strategy, involving all actions taken before an event to eliminate or reduce its long-term risks to animal life and welfare. Effective mitigation requires a synthesis of structural and non-structural interventions, complemented by financial mechanisms to transfer residual risk. The primary objectives of mitigation are: to identify, delineate, and assess existing and potential risks to reduce potential casualties and damage; to substantially increase public awareness of disaster risk to ensure a safer environment; and to reduce the risks of loss of life, infrastructure, economic costs, and destruction that result from disasters. These measures represent a substantive investment in resilience, aiming to lessen the vulnerability of animals and the communities that depend on them, thereby reducing the need for costly response and recovery efforts.

5.1. Structural Mitigation Measures

Structural measures involve the physical construction or modification of facilities to withstand the impact of hazards, providing a direct physical barrier between the animal and the threat. Considering the varied nature of animal housing systems across India, these guidelines shall extend to all forms of livestock establishments, such as dairy farms, poultry sheds, piggery units, small ruminant enclosures and aquaculture units.

All new construction of veterinary facilities and animal shelters by government agencies and animal welfare organizations must undertake a risk study and promote disaster-resilient infrastructure. Shelter planning should account for species-specific minimum space requirements. Moreover, siting and construction should be hazard-specific.

5.1.1 Flood-Resilient Enclosures and Shelters

In flood-prone regions, animal shelters and livestock units must be designed to minimize the impact of inundation. A primary structural measure is the construction of animal shelters on raised platforms, such as compacted earth mounds (known as killas) or concrete plinths, to keep animals above anticipated flood levels. The use of water-resistant building materials and the incorporation of effective drainage channels around the farm premises are also needful for preventing waterlogging and structural damage. The construction of two-storey community shelters, where the ground floor can safely house animals during floods while the upper floor stores feed and fodder, is an innovative mitigation strategy. These flood-resilience principles and elevation standards are equally applicable to the design of poultry sheds, pig housing, and similar production facilities to ensure animal safety during inundation events.

Community Fodder Banks and Shelters during Cyclone Phailin, Odisha (2013)

Structural mitigation at the community level is a highly result-oriented strategy for disaster resilience. In 2011, local communities in Subola village, Kendrapada district (a region highly vulnerable to recurring floods and cyclones), collaborated with animal welfare organisations to construct a two-storey community fodder bank and animal shelter. This facility was strategically located adjacent to the existing human cyclone shelter. The intervention encompassed the provision of paddy straws, veterinary treatments, and the integration of a village disaster management plan, directly benefiting 600 households and 2,503 animals. When the severe Cyclone Phailin struck in 2013, the pre-established structural mitigation allowed the agrarian community of Subola to safely house their livestock and maintain fodder security, successfully surviving the emergency with minimal loss to their productive assets.

For aquaculture sites, overflow structures and drainage channels are essential to safely regulate excess water and prevent dyke breaches. Pond depth of 6-9 ft is recommended to provide thermal refuges during critical seasonal periods. Perimeter netting, fencing and screened sluice gates should be installed to prevent fish escape, ingress of debris, and predation.

5.1.2 Seismic-Resilient Stables and Structures

In earthquake-prone zones, structural integrity is the most important factor in preventing animal death and injury from building collapse. Animal shelters should be constructed in accordance with earthquake-resistant building codes, avoiding the use of heavy roofing materials that can be deadly if they fall. Reinforcing existing structures and ensuring that gates and fences are designed to withstand ground shaking can prevent both entrapment and the escape of panicked animals into hazardous environments. Sites for livestock shelters should be on stable ground and away from areas at risk of landslides. Structures should be built in accordance with earthquake-resistant construction techniques, avoiding heavy roofing materials. This requirement for seismic resilience and retrofitting extends to all animal housing infrastructures, including poultry units, dairy cattle sheds, piggery units, to prevent structural failure.

5.1.3 Cyclone and Wind-Resistant Construction

To mitigate the impact of high-velocity winds, animal shelters must be structurally reinforced. Structures should be located away from the immediate coastline. Construction should ensure that roofs are adequately tied and secured to the structure to withstand high-velocity winds. This includes securely anchoring roofs to the ground and building walls that can withstand wind pressure. Planting rows of trees to act as natural windbreaks around farms and shelters is a cost-effective measure to reduce wind speed and protect both animals and infrastructure. Such wind-resistant construction standards are critical for all farm types, particularly high-walled poultry sheds and open-sided dairy units that are vulnerable to structural failure during cyclones.

5.2. Non-Structural Mitigation Measures

Non-structural measures refer to policies, knowledge development, public awareness programs, and operational practices that reduce risk and impact without covering physical construction.

5.2.1 Hazard-Specific Mitigation Strategies

To protect confined livestock, free-roaming community animals, and associated human livelihoods, DDMAs, UDMAs and Panchayati Raj Institutions should implement targeted localised mitigation strategies tailored to the specific geo-climatic hazards prevalent in their jurisdictions. In addition to general measures, specific mitigation strategies must be adopted for the following prevalent hazards:

Drought Mitigation:

- **Water Conservation and Harvesting:** In drought-prone zones, authorities are encouraged to prioritise the revival of traditional water tank systems and promote rainwater harvesting through the construction of community ponds. Furthermore, urban and rural local bodies are recommended to initiate the placement and regular refilling of accessible water troughs in public spaces for community animals. Groundwater levels must be continuously monitored to forecast water scarcity.
- **Fodder and Feed Security:** To strengthen the green cover and ensure long-term feed availability, farmers must be incentivized to cultivate drought-resistant varieties of fodder crops and trees. In parallel, local authorities should support community-driven feeding initiatives to prevent starvation among street animals.

Heat Wave Mitigation:

- **Microenvironment Modification:** To protect animals from intense solar radiation, adequate shading must be established at holding pens, resting areas, and pastures. This can be achieved cost-effectively by planting broad-leaved trees or constructing bamboo shelters. Urban local bodies are encouraged to identify and designate public shaded refuges to protect community animals from fatal heatstroke.
- **Shelter Design and Cooling:** Artificial livestock shelters must feature high roofs with reflective upper coatings to minimize heat absorption. Where feasible, the installation of water sprinklers combined with fans should be promoted to facilitate evaporative cooling.
- **Nutritional Management:** Livestock feeding and grazing schedules should be shifted to the cooler, later parts of the day to prevent the dangerous coincidence of peak metabolic heat production with peak environmental temperatures. Ready access to clean drinking water should be provisioned in farm enclosures and also encouraged in community animal feeding spots.

Cold Wave and Frost Mitigation:

- **Shelter and Windbreaks:** To mitigate the severe chilling effect of winter winds, livestock enclosures must be equipped with physical windbreaks and rain shelters. Maintaining dry floor surfaces is critical, as wet coats severely deplete natural insulation. The local authorities, in collaboration with registered Animal Welfare Organisations, could provide temporary wind-proof shelters and warm bedding for highly vulnerable community animals.
- **Metabolic Support:** During extreme cold, the metabolic energy demands of animals notably increase. State Animal Husbandry authorities should advise farmers to offer additional feed, supplemented with fat and salt, to help elevate core body temperatures. A continuous supply of warm, potable water should be ensured across all animal habitats during extreme winter conditions to prevent cold stress and dehydration.

Forest and Farm Fire Mitigation:

- **Structural Safety:** All large-scale livestock shelters, gaushalas, and commercial farms should be equipped with functional fire extinguishers.
- **Hazard Isolation and Evacuation:** In fire-prone zones, farm management protocols should be enforced to ensure that highly combustible materials (dry fodder, wheat straw, hay) are stored in isolated facilities safely distanced from primary animal housing. Fire mitigation and evacuation planning for forest fringes must account for the safe displacement of both confined livestock and the community animals inhabiting the peripheries.

5.2.2 Biosecurity Protocols and Disease Prevention

Reliable and firmly established biosecurity measures are a critical non-structural tool for preventing disease outbreaks, which are a common secondary disaster. Mitigation strategies must prioritize the top designated zoonotic diseases identified at regional and local levels for for targeted interventions. This involves establishing strict protocols for quarantine, routine disinfection of premises, and control of vectors like ticks and flies. Implementing a functional biosecurity plan reduces the risk of introduction and spread of infectious agents, which is particularly important when animals from different areas are congregated in emergency shelters. For aquaculture systems, biosecurity should also include proper pond preparation and water management practices in line with national/ state protocols.

5.2.3 Prophylactic Health Campaigns

Strengthening the baseline health of animals through pre-disaster health campaigns is a paramount preventive measure. Regular and widespread vaccination programs against endemic diseases like Foot and Mouth Disease (FMD), Haemorrhagic Septicaemia (HS), and Peste des Petits Ruminants (PPR) noticeably increase herd immunity. Similarly, strategic deworming of livestock helps to improve their overall condition, making them

more resilient to the stresses of a disaster.

The pre-disaster health campaigns should include: mass vaccination and deworming of animals for economically important diseases prior to the monsoon or high-risk season; proper documentation to identify vaccinated animals and avoid duplication.

These campaigns must be planned and executed under the supervision of the District Animal Husbandry Department to ensure proper veterinary standards, cold chain management, and record-keeping. Key components include:

- **Strategic Vaccination:** Widespread vaccination programs against endemic and economically important diseases must be conducted prior to high-risk seasons (e.g., monsoon) to increase herd immunity. The choice of vaccines must be based on local disease risk analysis.
- **Strategic Deworming:** Implementing a scheduled deworming program for livestock with a "suitable broad-spectrum anthelmintic" helps to improve their overall condition, making them more resilient to the stresses of a disaster.

These prophylactic health campaigns for livestock are not merely advisory but represent a critical implementation of the disease prevention and control mechanisms established under the Prevention and Control of Infectious and Contagious Diseases in Animals Act, 2009. Similarly, the management of community animals through sterilization and vaccination, as outlined in the Animal Birth Control Rules, 2023, is a foundational mitigation activity for reducing public health risks and enhancing community resilience.

5.2.3.1 Community Animal Population Management

A primary mitigation measure for reducing risks associated with community animals is the implementation of long-term, humane animal birth control and vaccination programs. Systematic sterilization and vaccination campaigns in the pre-disaster phase reduce the number of vulnerable animals and create herd immunity, thereby mainly lowering the risk of zoonotic disease outbreaks post-disaster. Establishing community-level awareness about co-existence and responsible care for community animals also mitigates potential human-animal conflict during a crisis. In disaster scenarios, the disintegration of waste management systems in slums and informal settlements leads to conflict amongst community dogs in close quarters. Mitigation must focus on waste management as a tool for population and conflict control.

5.2.4 Land-Use Planning and Hazard-Zone Avoidance

Wise management of land and the environment is a fundamental principle of disaster risk reduction. Land-use planning policies should discourage or prohibit the construction of large-scale animal farms and essential veterinary infrastructure in high-risk zones such as floodplains, coastal storm surge areas, and landslide-prone slopes. Protecting natural ecosystems, such as mangroves and forests, functions as a natural buffer against hazards and helps to preserve wildlife habitats and corridors.

Land-use policies must be informed by Central Pollution Control Board (CPCB)

environmental guidelines for animal agriculture. For new establishments, this includes mandatory minimum distances from sensitive areas:

- **Poultry Farms:** Should be located at least 500 meters from residential zones, 100 meters from major water bodies, and 100 meters from national highways. These farms are prohibited in ecologically sensitive zones.
- **Dairy Farms and Gaushalas:** Should be situated at least 200 meters from residential areas and 500 meters from hospitals and schools. They must also be 500 meters from major water bodies like rivers and lakes, and should not be located in floodplains.

Corridor Management: Secure wildlife corridors and draw appropriate plans for their management to prevent ecologically unsustainable land-use changes that could exacerbate disaster impacts on migratory species.

5.2.5 Fodder and Water Security

To mitigate the impacts of drought and flood, measures to ensure the availability of feed and water are essential. The establishment of community-managed fodder banks or government-supported fodder banks for the safe storage of hay and dry fodder is a proven mitigation strategy. State governments shall map all recognized Gaushalas and Pinjarpoles within the district. These institutions shall be strengthened to serve as pre-designated 'Community Animal Shelters' during disasters. To ensure their readiness, state governments are encouraged to provide support for establishing fodder banks and feed storage facilities within these premises as a proactive mitigation measure. To that end, promoting the cultivation of drought-resistant and flood-tolerant fodder varieties helps to ensure a more stable feed supply. Water security can be enhanced through rainwater harvesting and the revival of traditional water bodies.

5.3. Financial Risk-Transfer Mechanisms

Financial mitigation tools are designed to transfer the economic risk of animal loss from the individual owner to a larger entity, thereby providing a financial safety net that enables faster recovery.

5.3.1. Insurance and Reinsurance Schemes

Formal insurance schemes provide a mechanism for animal owners to receive compensation for the loss of their animals, which are their most valuable, productive assets. As cited in '3.6 Insurance Schemes and Liability Provisions', insurance policies are recommended to include clauses that insist on simple risk reduction and preparedness measures at the farm level as a prerequisite for pay-outs. This would ensure animal owners take reasonable steps to protect their animals, such as having an evacuation plan or a resilient shelter, to be eligible for a payout..

5.3.2. Microinsurance and Community Funds

Governments can support the establishment of dedicated emergency funds, such as a

"Veterinary Emergency Response Fund," to provide rapid financial assistance for animal welfare needs during emergencies.

5.4 Strengthening Veterinary Institutional Resilience

Mitigation goes beyond on-farm measures to include the strengthening of the veterinary infrastructure itself. A resilient veterinary sector is fundamental to any disaster response. Key mitigation strategies include:

- **Strengthen Institutional Capacities:** A primary goal must be to establish and strengthen Veterinary Emergency Response Units (VERU) in all veterinary institutes with adequate training and resources (staff, funds, equipment, etc.). This builds a nationwide network of skilled responders.
- **Business Continuity Planning:** All government veterinary hospitals, diagnostic laboratories, and academic institutions could prepare business continuity/ contingency plans for coping with emergencies to ensure the safety of the institute (staff, animals, assets). These plans should be tested through annual mock drills and simulation exercises.

06 Preparedness

Preparedness encompasses all measures taken to establish a state of readiness to systematically contain the effects of a disastrous event. It is a core component of disaster risk reduction, entailing the development of plans, the organization of response teams, the training of personnel, and the stockpiling of resources to ensure that aid can be rapidly mobilized and deployed when a disaster strikes. For animals, this means creating a robust framework that enables owners, communities, and government agencies to protect animal life and welfare during a crisis.

6.1. Detailed Preparedness Planning

The State Animal Welfare Board (SAWB) shall be responsible for overseeing the integration of these AiDRR guidelines into the State Disaster Management Plan (SDMP) and all District Disaster Management Plans (DDMPs). The SAWB will review and approve the animal management components of all DDMPs to ensure they meet the minimum standards outlined in these guidelines and are in alignment with the Prevention of Cruelty to Animals Act, 1960. Furthermore, the SAWB shall coordinate with the State Animal Husbandry Department and/or the State Fisheries Department to ensure the mapping of resources and the establishment of contingency plans for fodder and veterinary care.

Identification of Vulnerable Assets:

- Assess and create an inventory of available manpower, including veterinary doctors and para-veterinary staff.
- Review the preparedness of veterinary hospitals and mobile veterinary units.
- Ensure adequate storage of medicine, vaccines, Personal Protective Equipment (PPEs), and lifesaving equipment.
- Plan for logistical requirements such as fuel, lighting, tents, and sanitation materials.
- Assess and map all aquatic animal-related units, including but not limited to aquaculture ponds, tanks, cage culture units and hatcheries.
- As part of this mapping exercise, identify and demarcate protective buffer zones around critical aquaculture facilities, particularly prone to disasters.

Establishment of Animal Camps:

- Pre-identify sites for temporary animal camps with basic facilities for feed, fodder, water, and medicine.

Feed and Fodder Security:

- Prepare a contingency plan for the adequate supply of fodder and fodder seeds in potentially affected areas.

- Establish agreements with Regional Fodder Stations to procure seeds for growing fodder crops.
- Establish fodder banks in drought and flood-prone areas to meet emergency demand.

Carcass Disposal Preparedness:

- Pre-identify equipment, logistics, manpower, and possible sites for the safe disposal of carcasses by following zoo-sanitary measures.
- Standard Operating Procedures (SOPs): Develop detailed SOPs that include documented decision-making processes for selecting disposal methods based on the specific disaster and disease.
- Resource Management: Establish a detailed inventory of necessary resources, including personnel, PPE, transport (leak-proof trucks), heavy equipment (bulldozers, front-end loaders), fuel, and disinfectants.
- Worker Safety Protocols: Ensure workers receive training on zoonotic risks and are protected with appropriate PPE, vaccinations, and regular health checks.

Community Participation and Mobilization:

- Ensure close coordination between various government departments and programme implementation agencies.
- Involve local people and Panchayati Raj Institutions (PRIs) in the assessment, design, and implementation of the disaster management plan.
- Engage Veterinary Colleges, NGOs, media, Goshalas, and animal welfare organizations in disaster management planning.

6.1.1 Development of Contingency Plans

A contingency plan is a management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective, and appropriate responses.

The State AHD/Fisheries Department or District AHD/Fisheries unit, as applicable, should develop one or more contingency plans covering each type of event identified during the risk assessment exercises, using an all-hazards approach. These plans should cover disasters triggered by natural hazards (e.g., flooding, drought, earthquakes) and man-made or technological disasters (e.g., chemical release, transport accidents, conflict, bioterrorism). The process of developing the contingency plan is as valuable as the plan itself, as it involves organizing a team, identifying critical resources, and establishing a plan for response and recovery.

6.2 Animal Emergency Preparedness Protocols

Standard Operating Procedures (SOPs) are essential for ensuring a consistent, effective, and coordinated response. The following protocols outline key preparedness actions for animal welfare in the face of disasters. The Species specifie SOPs are to be implemented

by the SAWBs in conjucntion with the State AHDs, State Fisheries Departments and relevant stakeholders. The DAHD & DoF shall develop these species-specific SOPs in accordance with the following criteria:

6.2.1 Standard Operating Procedure (SOP) for Emergency Animal Sheltering

Step 1: Site Identification and Assessment: Identify and pre-designate suitable locations for temporary animal shelters, preferably in proximity to human evacuation shelters to allow owners to care for their animals. Assess these sites for access to water, proper drainage, security, and accessibility by transport vehicles.

Furthermore, establish protocols and designate separate, secure holding areas within or near the main shelter for unowned, stray, or feral animals to prevent disease transmission to owned animals and ensure handler safety.

Step 2: Resource and Equipment Planning: Prepare an inventory of materials required for setting up temporary shelters, including fencing, tarpaulins, ropes, water troughs, and feed mangers. Ensure that a stockpile of these materials is maintained and readily available for deployment.

Step 3: Establish Intake and Management Protocols: Develop clear protocols for animal intake, registration, and identification to ensure proper tracking and reunification with owners. Plan for the segregation of animals by species, sex, age, and health status to minimize stress, conflict, and disease transmission.

Step 4: Develop Biosecurity and Waste Management Plans: Establish strict biosecurity protocols for all emergency shelters, including designated isolation areas for sick animals and procedures for disinfection. Pre-plan for the regular removal and safe disposal of animal waste and carcasses to prevent the outbreak of disease.

6.2.2 Standard Operating Procedure (SOP) for Animal Evacuation

Step 1: Planning and Route Identification: Identify and map primary and alternative evacuation routes for animals from high-risk areas. Ensure these plans are communicated to animal owners and communities through awareness programs.

Step 2: Ensure Animal Identification: Mandate that all animals have some form of identification, such as ear tags, microchips, or collars with contact information, to facilitate tracking and post-disaster reunification.

Step 3: Training and Capacity Building: Train animal owners and community volunteers in humane handling and loading techniques to minimize stress and injury during evacuation. Ensure that specialized response teams are proficient in technical large animal rescue.

Step 4: Prepare Transport Logistics: Maintain an inventory of suitable and safe transport vehicles, such as trucks and trailers. Ensure vehicles are equipped with non-slip flooring, adequate ventilation, and partitions to safely segregate animals during transit. Service dogs must be accorded protection to ensure the continuity of their critical assistance and operational functions.

6.2.3 Standard Operating Procedure (SOP) for Feed and Water Stockpiles

Step 1: Needs Assessment: Calculate the emergency feed and water requirements based on the animal population data in various vulnerable zones.

Step 2: Establishment of Fodder Banks: Create community-managed or government-supported fodder banks in strategic locations to store hay, silage, and densified feed blocks. These initiatives shall be technically supported by the Regional Fodder Stations (RFS) located across the country's agro-climatic zones, which are recommended to assist in quality fodder seed production and extension activities.

Step 3: Develop Supply Chain Logistics: Pre-plan the logistics for transporting feed and water to affected areas, including identifying suppliers, transport vehicles, and distribution points.

Step 4: Ensure Water Quality: Stockpile water purification supplies, such as chlorine tablets or bleach, to ensure that safe drinking water can be provided to animals when regular sources are contaminated.

Step 5: Continuity of Oxygen, Power and Protecting Water Quality for Aquatic Animals: For aquatic animals, include measures to ensure uninterrupted oxygenation and effective water quality in aquaculture systems. Include the pre-positioning of aeration equipment, oxygen supply systems and backup power sources.

6.2.4 Standard Operating Procedure (SOP) for Household and Farm-Level Preparedness

Standardized Animal Disaster Box (Inventory Checklist) To ensure immediate self-sufficiency during the initial phase of a disaster, all animal owners and institutional farms must maintain a "Disaster Box" containing the following mandatory items:

Restraint Equipment: Ropes and halters appropriate for the species to facilitate control during panic.

Nutrition: Sufficient stock of concentrate feed and fodder/hay to last at least 3–5 days.

Medical Supplies: Basic medicines, supplements, and a livestock first aid kit.

Documentation: Important records and ownership identification documents.

Logistics: Buckets for water/feed, a flashlight or torch with spare batteries, and blankets for warmth or shock management.

6.3 Livestock Protection Infrastructure and Relief Systems

Preparedness for livestock includes specific procedures that account for the large scale of herds and their importance to livelihoods. Clear plans for herd movement and securing supply chains must be established well in advance of a disaster. Herd movement plans should be developed in consultation with pastoralists and herding communities, identifying safe migratory routes and temporary grazing areas away from known hazards. Feed and fodder supply chain protocols must be established to manage shortages during a crisis.

This includes identifying states or regions with fodder surpluses and creating agreements for the rapid transport of these resources to deficit areas, potentially utilizing national resources like the railways for transportation. Water resource management strategies should focus on both the rehabilitation of existing water sources, like ponds and wells, and the capacity for emergency water trucking to deliver potable water to stranded livestock populations.

Due to the role of cattle for rural livelihoods and the recurring challenges observed during disasters, a consolidated approach to infrastructure and systemic relief is integral. By transitioning from reactive relief measures to proactive infrastructure development for livestock, local administrations can mitigate economic losses within the agrarian sector. Furthermore, these structural investments empower vulnerable communities to safeguard their animals long before a crisis manifests. States with high exposure to floods, droughts, and cyclones must prioritize the following systemic frameworks within their District Disaster Management Plans (DDMPs):

Raised Platforms and Elevated Shelters: In flood-prone regions, the design and promotion of raised structures for livestock is a critical lifesaving intervention. Authorities must proactively construct and incentivize farmers to build animal shelters on elevated platforms, such as compacted earth mounds (*killas*) or concrete plinths. To prevent waterlogging, which severely compromises dairy cattle's health and hoof integrity during prolonged inundation, these structural designs must incorporate effective drainage channels around the farm premises.

India's First Permanent Animal Evacuation Hub, Wayanad, Kerala (2025)

The transition to permanent, purpose-built animal shelters is an essential step towards more effective disaster response. In Wayanad District, Kerala, the flood-prone district with high susceptibility to recurring floods and high-intensity landslides, authorities have undertaken the construction of India's first permanent animal evacuation shelter. This is to address the situation where rural populations are unwilling to relocate without their livestock. This is also an important landmark in the partnership between State Governments and animal welfare organizations. The facility is to provide safe shelter to different types of animals in separate, specially designed buildings. The facility also includes drainage systems, an integrated veterinary clinic, and a quarantine zone. This is an important aspect of the architecture of the facility, where immunocompromised and injured animals are immediately treated to prevent the outbreak of secondary infections that could harm the remaining animal population.

Cattle Camps / Animal Relief Camps: To manage mass displacement during floods and prolonged droughts, District Disaster Management Authorities (DDMAs) and District Society for Prevention of Cruelty to Animals(SPCA), constituted under chairmanship of the jurisdictional District Magistrates, can ensure the development and operationalisation of these camps and the pre-identification and planning of large-scale cattle and animal relief camps have to be executed. For cattle, sheep, goats, equines, and pigs, pre-identification shall employ the usage of Information Network for Animal Productivity and Health tags

with entry of data on the Bharat Pashudhan Portal. These camps must adhere to strict operational standards, ensuring sufficient space for animals to lie down, stand, and turn comfortably, alongside proper ventilation to prevent the buildup of heat and ammonia. Furthermore, strict biosecurity protocols must be enforced, including the installation of footbaths at entrances and the immediate segregation of sick animals into designated isolation areas to prevent disease transmission within concentrated herds.

Fodder Depots and Fodder Banks: To counteract the severe feed scarcity triggered by natural calamities, State Animal Husbandry Departments could establish decentralized fodder storage systems and community-managed fodder banks. This includes mapping contingency supply chains and establishing formal linkages with the eight Regional Fodder Stations (RFS) across different states' agro-climatic zones to assist in quality fodder seed production. Storage facilities must be equipped for the rapid deployment of hay, silage, and emergency nutritional supplements like urea-molasses mineral blocks (UMMB).

Water Supply and Logistics Arrangements: Securing water availability is a critical logistical requirement during both sudden-onset disasters and slow-onset droughts. Preparedness plans at the State and District levels must detail the logistics for emergency water trucking and the deployment of mobile water troughs. To protect the health of livestock, water quality protocols must include stockpiling purification supplies, such as chlorine tablets in dosage prescribed by officials of the Animal Husbandry Department, ensuring that safe drinking water can be provided even when regular sources are severely contaminated.

Convergence with Existing Schemes and Funds: To ensure the financial sustainability and rapid implementation of these infrastructure and relief systems, interventions must be structurally linked with existing financial frameworks. This includes leveraging provisions under the State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF), alongside integration with the State Disaster Mitigation Fund (SDMF) and relevant sectoral schemes administered by the State-level Department of Animal Husbandry and Dairying.

6.4 Wildlife Disaster Management

This encompasses wildlife protection, integrating in-situ resilience, ex-situ safety, and conflict mitigation. In-situ measures prioritize habitat integrity by utilizing Eco-Sensitive Zones as buffers and securing migration corridors, supported by technology-driven fire management (National Action Plan on Forest Fire - NAPFF) and species monitoring systems. Ex-situ protocols require full compliance with the Central Zoo Authority's standards, underscoring the need for strong quarantine facilities and continuous veterinary oversight to safeguard containment and animal welfare. Simultaneously, Human-Wildlife Conflict management can address displacement risks through hotspot mapping, linear infrastructure safeguards, and the deployment of specialized rapid response teams to prevent casualties and poaching. In the event of large-scale habitat disruption, such as floods, wildfires, or severe cyclones, the State Forest Departments shall facilitate the natural movement of animals away from hazardous zones to secure areas. The State

Forest Department creates 'Safe Refugia' and 'Safe Passage Corridors' in coordination with the SDMA/DDMA. Integrated monitoring using drone surveillance and satellite mapping must be deployed to track animal movement in real-time, ensuring that Rapid Response Teams (RRTs) are pre-positioned at known conflict hotspots where forest boundaries intersect with human habitations. These protocols shall include the pre-emptive closure or strict regulation of transport arterial roads cutting through affected forest zones to prevent vehicular-wildlife accidental mortality during mass migration or panic-driven displacement.

Addressing Wildlife Crime Risks During Disasters: Disasters routinely create severe enforcement and patrolling gaps within protected areas and wildlife corridors. The resulting chaos and displacement can be actively exploited by opportunistic networks to facilitate hunting, poaching, and the illegal wildlife trade. To mitigate these secondary disaster risks, it is imperative to establish robust, pre-emptive coordination mechanisms with enforcement agencies. State Forest Departments must operate in close tandem with the Wildlife Crime Control Bureau (WCCB), local police forces, and border security agencies where applicable. Preparedness plans must explicitly include protocols for intensifying anti-poaching vigilance, deploying specialized rapid response teams to secure vulnerable peripheries, and monitoring known illegal trade routes during and immediately following a disaster event.

6.5 Veterinary Emergency Response Systems

A functional veterinary emergency response system is essential for delivering timely medical care and reducing animal mortality and suffering. This system should be built around trained and equipped rapid response teams, often known as Veterinary Emergency Response Units (VERUs). These units, ideally established within veterinary universities and state animal husbandry departments, form the core of the professional response and must be trained in both clinical field medicine and disaster management protocols. A functional veterinary emergency response system is essential for delivering timely medical care. All Veterinary Universities and Colleges shall explore the possibilities of creating a VERU by involving final year/internship students and faculty. This creates a pool of trained professionals who can be deployed as surge capacity during a major disaster.

District-level Veterinary Emergency & Rescue Centre (VERC): State AHDs should take steps to create a VERC in each District Veterinary hospital. The VERC should be equipped with veterinary first aid kits, rescue equipment, and a round-the-clock active helpline. It should have an effective liaison with the SDRF and other district agencies at all times.

The operational capacity of these teams is developed by the availability of mobile veterinary clinics, which allow for the delivery of on-site treatment in remote or inaccessible areas. Preparedness also demands the strategic inventory of essential medicines, vaccines, and veterinary equipment in secure locations that can be swiftly accessed and deployed during an emergency. Stockpiles of medicines and equipment must include supplies for the humane capture, containment, and care of community animals, including nets, and provisions for disease control and euthanasia.

6.6 Veterinary Medical Preparedness

Effective veterinary response depends on meticulous medical readiness. All VERUs and District AHDs must prepare and maintain the following:

1. **Emergency Kits:**

   Maintain pre-packed 'Go Bags' containing essential supplies for airway management, venous access, emergency drugs (with dosage charts), respiratory support, and IV fluids.

2. **Pharmaceutical Stockpiles:** Maintain a strategic stockpile of essential veterinary medicines. This must include:

   - **Emergency Drugs:** Sedatives (e.g., Xylazine HCl), analgesics, cardiac drugs (e.g., Epinephrine, Atropine), diuretics, and anti-arrhythmics.
   - **General Medications:** Broad-spectrum antibiotics, corticosteroids, anthelmintics, acaricides, anti-hemoprotozoan drugs, and topical wound treatments (e.g., fly repellent ointments, povidone-iodine).
   - **Supportive Fluids & Supplements:** Intravenous fluids (crystalloids), oral rehydration solutions, and parenteral multivitamin and mineral supplements.

3. **Vaccine and Cold Chain Management:** Procure and stockpile necessary vaccines based on risk analysis. A resilient cold chain infrastructure must be established and maintained to ensure vaccine efficacy from storage to administration in the field.

The management, stockpiling, and dispensing of all veterinary pharmaceuticals must adhere to the professional standards outlined in the VCI Code of Ethics Regulations, 1992. All emergency drug protocols must ensure that medicines are handled and dispensed only by or under the direct supervision of registered veterinary practitioners to prevent misuse and maintain professional accountability.

07 Response

The response phase encompasses the actions taken immediately during and after a disaster to save lives, meet basic needs, and prevent further loss and suffering. For animals, this phase is crucial and demands the rapid, coordinated, and effective implementation of pre-established plans to address their immediate welfare needs. The primary objective is to provide life-saving assistance through organized rescue, sheltering, and emergency veterinary care.

7.1 Activation of Emergency Response Systems

The activation of veterinary emergency response systems is triggered by an early warning or the immediate impact of a disaster. The process begins with ongoing disaster monitoring, where designated AHD authorities track potential threats. Upon confirmation of an event, a remote assessment should be conducted using secondary sources like media and government reports to gauge the potential impact on animals. This should be immediately followed by the deployment of a specialized team to conduct an on-site Disaster Assessment and Needs Analysis (DANA) to gather first-hand information on the situation. Based on the findings of the DANA, a formal activation of the pre-designated Disaster Assessment and Response Teams (DARTs) and Veterinary Emergency Response Units (VERUs) should be initiated by the competent State and District Disaster Management Authorities. These specialized teams are then deployed to the affected areas to commence rescue and relief operations.

Typhoon Haiyan, Philippines (2013)

Rapid-onset disasters can instantly decimate agrarian economies, making immediate veterinary intervention critical. When Typhoon Haiyan struck the Philippines in 2013, the agricultural sector, heavily dependent on livestock and fisheries, suffered massive losses. An estimated 6 million farmers engaged in livestock and fisheries lost their primary source of income. To prevent a complete secondary economic collapse, international animal welfare organizations and local veterinary authorities deployed rapidly to provide emergency veterinary care, vitamin supplementation, and critical vaccinations to surviving cattle, water buffalo, pigs, and poultry. This early intervention prevented the outbreak of secondary diseases in immunocompromised animals, successfully safeguarding the remaining productive assets and livelihoods of the affected farmers.

On-site operations should be managed using the Incident Response System (IRS) to provide a common hierarchy for responders from multiple agencies. All animal-related activities must be coordinated with the DDMA and UDMA, which has the overall responsibility for managing the response.

Rescue Operations:

- The State Animal Husbandry Department (AHD) will constitute Animal Rescue

Teams and provide training.

- SDRF, NDRF, Veterinary Wing of Central Para Military Forces (CPMF), and Remount & Veterinary Corps (RVC) shall assist State AHDs and State Fisheries Department in rescue of livestock and other animal species.
- Animal camps should be organized near human relief camps so that owners can take care of their animals.

Emergency Veterinary Care:

- Arrange for treatment of injured/sick animals, including fluid therapy and preventive vaccinations against prevailing diseases.
- Post-disaster, animals like cattle, buffalo, sheep, goat, pigs, dogs, and poultry need to be dewormed with a suitable broad-spectrum anthelmintic.
- Arrange for interventions within aquaculture systems, including aeration, emergency oxygenation measures and restoration of key water quality parameters.

Emergency Feed and Fodder Supply:

- Coordinate with the Railway Authorities for the transportation of animal feed and fodder from surplus to deficit areas.
- Enrich straw using urea-molasses treatment to meet protein and energy requirements.

Management of Epidemics:

- Be prepared to manage common post-disaster diseases such as Foot and Mouth Disease, Hemorrhagic Septicemia, Black Quarter, Anthrax, and Enterotoxemia.
- Implement control measures, including vaccination, deworming, and disinfection of animal sheds with insecticides.

7.2 Coordination Mechanisms

A practical response is impossible without robust coordination among all stakeholders. On-site operations should be managed using a standardized framework like the Incident Response System (IRS), which provides a common hierarchy for responders from multiple agencies to work effectively together.

To prevent operational silos and facilitate seamless coordination during an emergency, all animal-centric response activities must be explicitly mapped to the standard functional sections of the Incident Response System (IRS):

Operations Section: Responsible for executing all tactical field activities. This includes deploying specialized teams for animal rescue and evacuation, conducting on-site emergency veterinary triage, administering medical treatment, managing temporary animal shelters, and overseeing the safe containment or capture of displaced community and wild animals.

Logistics Section: Tasked with securing, managing, and distributing critical resources and services. This involves establishing emergency supply chains for animal feed, fodder, and potable water, as well as procuring veterinary pharmaceuticals, specialized rescue equipment, and appropriate transport vehicles for livestock.

Planning Section: Responsible for gathering and analyzing situational intelligence. This includes tracking animal population displacements, mapping surviving veterinary infrastructure, forecasting disease outbreak risks based on DANA reports, and integrating specific animal welfare objectives into the daily Incident Action Plan (IAP).

Finance/Administration Section: Oversees all financial and administrative aspects of the animal response. This includes tracking costs associated with emergency fodder procurement and private veterinary contracting, administering rapid disaster relief funds to recognized Animal Welfare Organizations (AWOs).

For any response to be considered feasible, it must be underpinned by comprehensive and proactive collaboration across the entire stakeholder landscape. To ensure operational clarity and alignment with National Disaster Management Authority (NDMA) guidelines, all animal-centric response activities shall be executed within the standardized Incident Response System (IRS) framework. This ensures a unified hierarchy, prevents operational silos, and clearly delineates responsibilities at the State, District, and Local levels:

- **State Level (Strategic Command):** The State Animal Husbandry Department (AHD), State Fisheries Department and the State Animal Welfare Board (SAWB) shall integrate with the State Emergency Operation Centre to coordinate and manage animal-related emergency response activities during disasters. Their joint primary actionable mandate is resource mobilization: the AHD focuses on deploying Veterinary Emergency Response Units (VERUs) across districts and securing emergency procurement funds, while the SAWB coordinates the deployment of recognized Animal Welfare Organizations (AWOs) and oversees statutory welfare compliance. Together, they liaise directly with the SDMA and the Animal Welfare Board of India (AWBI) for national-level support. In this capacity, the SAWB will be responsible for: (a) Consolidating situation reports from all District SPCAs; (b) Coordinating the deployment of resources, including Veterinary Emergency Response Units (VERUs), recognized Animal Welfare Organizations (AWOs), and mutual aid between districts; (c) Liaising directly with the SDMA for logistical and financial support; and (d) Serving as the single point of contact for the Animal Welfare Board of India (AWBI) and national-level resources. Concurrently, the AHD focuses on securing emergency procurement funds and overseeing broad statutory welfare compliance.
- **District Level (Operational Command):** Coordinated by the DDMA, the District SPCA and District AHD along with District Fisheries Department serve as the operational core. The senior-most AHD officer shall act as the Incident Commander for animal operations, directly managing the deployment of field teams, establishing animal relief camps, and ensuring fodder supply chains are activated.

- **Local Level (Tactical Execution):** Ward Committees, Panchayati Raj Institutions (PRIs), and Community Animal Health Workers (CAHWs) are the tactical first responders. Their immediate actionable responsibilities include early warning dissemination, rapid field-level needs assessment, and executing "last-mile" rescue and primary first aid.

An outcome-driven and on-ground coordination can be achieved through a tiered "triad model" that leverages the unique skills of the entire veterinary workforce:

- **The Government Veterinarian:** Focuses on treating critically sick animals at veterinary hospitals and in the field, while leading mass vaccination campaigns.
- **The Veterinary Paraprofessional (VPP):** Acts as a vital link, providing field support, training CAHWs in animal husbandry and biosecurity, and connecting them to veterinary hospitals. VPPs also treat sick animals in villages (under supervision and direction of a registered veterinarian) and monitor community-level projects.
- **The Community Animal Health Worker (CAHW):** Serves as the "last mile" service provider. They focus on preventive care like deworming and vaccination for smaller animals (e.g., goats), and provide vital support to veterinarians during large-scale vaccination drives.

7.3 Immediate Animal Rescue

Animal rescue and evacuation must be implemented swiftly by trained personnel. Rescue teams must use humane handling techniques to minimize stress and prevent injury to both animals and handlers. The transport of animals must adhere to welfare standards, ensuring that vehicles are not overcrowded and have adequate ventilation and non-slip flooring. Emergency shelters for animals should be located in proximity to human relief camps to allow owners to continue caring for their animals.

7.3.1 Priorities of Rescue

Regardless of urgency, the priority for any rescue operation must follow a strict safety hierarchy to prevent more casualties. The hierarchy is:

I. Rescue of oneself

II. Rescue of the team

III. The safety of bystanders

IV. Rescue of the victim (without securing the first three, rescue of the individual animal is impossible and can lead to further human and animal casualties).

7.3.2 The L.A.S.T. Framework for Rescue Operations

A common acronym for the steps to follow in a technical rescue is L.A.S.T. (Locate, Access, Secure & Transport) :

- **Locate:** Once the animal is located, assess the scene for hazards.
- **Access:** This is the most dangerous part. Plan the access route and a retreat route.

- **Secure:** Secure the animal for the safety of all. In most cases, covering the eyes and ears with a towel is effective. The veterinarian must assess the animal's breathing and pulse and decide if treatment is needed.
- **Transport (Extrication):** Once all safety checks are complete, the extrication takes place. A second team may be needed to handle the victim once freed, as the first team will be busy with equipment.

7.3.3 Species-Specific Handling and Safety Protocols

A successful and safe rescue operation depends on applying species-specific handling techniques and equipment. All response teams must be trained in the following protocols. The focus should always be on saving life and not creating any further injury or damage. Thus, integrating the detailed, species-specific rescue and handling techniques into the protocols is imperative.

Under disaster conditions, animals will be under extreme stress and will not recognize that a rescue person is trying to help. Their survival instinct may cause them to act distressed, leading to injuries for both the animal and the handler. Therefore, all personnel must adhere to the following safety and handling principles.

7.4 Implementation of Evacuation and Sheltering

The implementation of evacuation plans requires the immediate mobilization of trained personnel and transport resources to move animals from high-risk areas to safer locations. Rescue teams must use humane handling techniques to minimize stress and prevent injury to both animals and handlers. Response teams shall be deployed to humanely capture and contain displaced or injured community animals, which can pose a public health risk and become a hazard to rescue operations. These animals should be transported to the designated temporary holding facilities for assessment and care.

The transport of animals must adhere to welfare standards, ensuring vehicles are not overcrowded and have adequate ventilation and non-slip flooring. Upon arrival at pre-designated safe locations, temporary animal shelters must be established swiftly. These emergency shelters must provide protection from the elements, access to clean water and feed, and adequate space for each animal. Within these shelters, animals must be segregated by species, age, and health status to maintain biosecurity and reduce social stress. Emergency shelters for animals should be located in proximity to human relief camps to allow owners to continue caring for their animals, which is crucial for both animal welfare and human psychological well-being.

In-Situ Sheltering and Flood Resilience in Dhemaji, Assam (2015):

Providing vulnerable households with the capacity to offer safe in-situ shelter for their animals greatly reduces the operational demands of large-scale evacuations. In 2012, disaster risk reduction strategies were implemented in Seujia Pathar village, Dhemaji District, Assam, an area chronically affected by unpredictable flooding from the Brahmaputra River. The multi-stakeholder intervention included veterinary health camps, community awareness training, the provision of emergency feed for cattle and pigs, and the construction of disaster-resilient, elevated household animal shelters combined with fodder storage. These structural designs successfully enhanced the community's capacity to protect animals for extended periods. During the severe statewide floods of 2015, these preparedness efforts enabled the local community to safely shelter their livestock in-situ, eliminating the traditional, high-risk necessity of evacuating animals to nearby schools, raised arterial roads, or river embankments.

7.5 On-Site Emergency Veterinary Services

The provision of on-site emergency veterinary services, a life-saving component of the response, is a core professional obligation grounded in the VCI Code of Ethics Regulations, 1992. This includes conducting veterinary triage to prioritize treatment, administering emergency first aid to stabilize patients, and implementing active disease surveillance to rapidly detect potential outbreaks.

The first step upon encountering affected animals is to conduct veterinary triage, a rapid sorting process to prioritize treatment for those with the most critical, life-threatening injuries who have the best chance of survival. This allows for the efficient use of limited medical resources in a mass casualty situation. Emergency first aid is then administered to stabilize patients, control bleeding, manage shock, and treat injuries such as burns, fractures, and lacerations. Simultaneously, a system of active disease surveillance must be implemented to rapidly detect any signs of potential disease outbreaks among the stressed and often co-mingled animal populations. Specific zoonosis prevention measures, such as enforcing strict hygiene at shelters, ensuring the safe disposal of carcasses, and isolating animals with suspicious symptoms, must be immediately put in place to protect the health of both the animal and human populations in the affected area.

7.5.1 Field Triage (SAVE System)

The first step upon encountering affected animals is to conduct veterinary triage, a rapid sorting process to prioritize treatment. The purpose of triage is to do the greatest good for the largest number of patients.

All veterinary teams will use the SAVE (Secondary Assessment of Victim Endpoint) Triage System, which divides animals into three categories:

- **RED (Immediate):** Animals who will benefit from immediate, austere interventions. These are critical patients with life-threatening injuries but a good chance of survival with prompt care. These are the priorities for treatment.

- **GREEN (Delayed):** Animals that will survive whether or not they receive immediate care. This category includes animals with minor injuries, such as simple lacerations or abrasions.
- **BLACK (Expectant):** Animals that will likely die regardless of the care they receive, or those for whom euthanasia is the most humane option due to catastrophic, untreatable injuries (e.g., severe burns over a large body area, severe head trauma, open pelvic fractures). [Note: The decision to euthanize an animal designated as "Expectant" is a veterinary medical decision that must also comply with legal requirements. As per the PCA Act, 1960, an order for euthanasia can be made if supported by the certification of a government veterinary officer in charge of the area.]

7.5.2 Hospital Triage

At a treatment facility or field clinic set up for animal aid, triage becomes more detailed. It involves five steps: Recognition of Life-Threatening Disease, Preparedness, Establishing a Triage Classification System, Arrival at the Clinic, and Patient Stabilization. The classification system is based on the urgency of animals:

- **Class I (Most Serious):** Requires treatment within seconds. Includes cardiopulmonary arrest, airway obstruction, and unconscious animals.
- **Class II (Critical):** Requires treatment within minutes. Includes shock, multiple injuries, severe bleeding, burns, and penetrating wounds.
- **Class III (Serious):** Requires management within a few hours. Includes superficial wounds and minor trauma with stable cardiovascular function.
- **Class IV (Less Serious):** Non-trauma-related conditions like vomiting or lameness that can wait.

7.6 Species-Specific Rescue and Handling Guidelines

Rescue operations must strictly adhere to species-specific Standard Operating Procedures (SOPs) and Implementer's Toolkits tailored to the distinct behavioural and physiological needs of livestock, companion animals, community animals, and wildlife.

The focus should always be animal-specific needs and on saving life and not creating further injury. Due care should be taken to adopt species-specific evacuation and transportation. Appropriate space, ventilation, food, water, and care shall be worked towards with safe transportation as the end goal.

7.7 Management of Epidemics and Biosecurity

Within 72 hours of a disaster declaration, the DDMA, upon the advice of the senior-most AHD officer of the district, shall activate a 'One Health Rapid Surveillance Team.' This team will consist of a field veterinarian, a public health officer from the medical department, and a member from the Regional Office of the State Pollution Control Board. The team can be accompanied by a representative from an Animal Welfare Organisation registered with AWBI. Its recommended to conduct joint surveillance for zoonotic diseases, assess

risks from contaminated water sources, and provide unified public health guidance to the Incident Response.

During a disaster, stress and overcrowding increase the risk of disease outbreaks.

- **General Biosecurity Measures to follow are:**
  - Isolate sick animals immediately from the healthy herd.
  - Intensify clinical surveillance of the disease in affected areas and surroundings.
  - Personnel dealing with infected animals must wear gloves and a face mask.
  - Disinfect premises at regular intervals with effective disinfectants.
  - Assessment to close animal markets located within a 10 km radius of the epicenter of an infection.
- **Escalation to Joint Outbreak Response:**
  - If field teams detect undiagnosed mass mortality (e.g., >10% herd/flock mortality within 48 hours), acute and highly contagious respiratory or neurological distress in multiple animals, or the simultaneous manifestation of similar symptoms in both animals and human handlers, the operations shall escalate from standard surveillance to an active Joint Outbreak Response. These trigger points include abnormal disease patterns in livestock reported by farmers or veterinarians, unexplained mass die-offs in wildlife reported by forest authorities.
  - Upon detection, the Chief Veterinary Officer of the district should immediately notify the DDMA and District Chief Medical Officer. This initiates the formation of a Unified Command under the IRS, co-led by the Chief Veterinary Officer and the Public Health Nodal Officer. Within hours of activation, a multi-disciplinary One Health Rapid Response Team (RRT) without undue delay should deploy to lock down the affected area, collect diagnostic samples, and initiate epidemiological tracing.
- **Financial Relief for Disease Outbreaks:**
  - If field teams detect undiagnosed mass mortality (e.g., >10% herd/flock mortality within 48 hours), acute and highly contagious respiratory or neurological distress in multiple animals, or the simultaneous manifestation of similar symptoms in both animals and human handlers, the operations shall escalate from standard surveillance to an active Joint Outbreak Response. These trigger points include abnormal disease patterns in livestock reported by farmers or veterinarians, unexplained mass die-offs in wildlife reported by forest authorities.
  - Upon detection, the Chief Veterinary Officer of the district should immediately notify the DDMA and District Chief Medical Officer. This initiates the formation of a Unified Command under the IRS, co-led by the Chief Veterinary Officer and

the Public Health Nodal Officer. Within hours of activation, a multi-disciplinary One Health Rapid Response Team (RRT) without undue delay should deploy to lock down the affected area, collect diagnostic samples, and initiate epidemiological tracing.

7.8 Occupational Health and Safety (OHS)

Disaster response involving animals, ranging from frightened companion animals and heavy livestock to wild species, presents distinct occupational hazards (e.g., physical trauma, crushing, bites) often overlooked in general rescue protocols. Comprehensive SOPs on Occupational Health and Safety (OHS) should be strictly enforced for all field teams. This includes the mandatory provision of species-appropriate Personal Protective Equipment (PPE), training in First Aid or Basic Life Support, and health or life insurance for all frontline staff including daily wage workers. Furthermore, protocols must address biological hazards by mandating pre-exposure vaccinations and biosecurity measures to prevent zoonotic disease transmission.

08 Animal Shelter, Care and Post-Disaster Rehabilitation

The period during and immediately after a disaster requires a focused effort on providing emergency shelter and essential care to ensure the survival and welfare of affected animals. As the immediate crisis subsides, the focus must shift to long-term rehabilitation, which involves not only the physical recovery of animals but also the restoration of livelihoods and the ecological balance.

8.1 Animal Shelter and Care During Disasters

Emergency animal shelters are an integral component of the disaster response, providing animals with protection from the elements and a secure environment to receive care. Site selection, setup standards, hygiene protocols, and veterinary management are critical for effective shelter operation.

8.1.1 Site Selection Criteria

As a primary preparedness measure, DDMAs could coordinate with the State Government and the District SPCA to pre-identify and formally designate these land parcels for use as emergency animal shelters during disasters.

The selection of an appropriate site for an emergency animal shelter is crucial for its safe and effective operation.

- **Safety and Location:** The site must be outside the immediate disaster zone and away from secondary hazards, such as floodplains or landslides. Ideally, shelters should be near human relief camps to allow owners to visit and care for their animals, reducing stress for both.
- **Accessibility:** The location must be accessible to transport vehicles for animals, feed, water, and essential supplies.
- **Resource Availability:** The site should have an adequate and clean water supply for drinking and sanitation.

Compliance for Wildlife Shelters: Any temporary facility established specific for housing rescued wild animals must be designated and operated as a satellite facility of a recognized zoo or rescue centre.

Standardized Intake and Triage Protocols

All animals entering an emergency shelter must undergo a standardized intake process to ensure traceability, biosecurity, and safety.

Registration and Identification:

- **Photographic Record:** A photograph of the animal, if with an owner, must be taken

immediately upon arrival to prove ownership and facilitate reunification.

- **Temporary Identification:** All animals shall be fitted with an identification mechanism - preferably tagging, RFID or microchipping.

Triage (Health and Behavior):

- **Medical Triage:** Rapid assessment for infectious diseases, injuries, or parasites. Animals with signs of contagious disease (e.g., coughing, diarrhea) must be diverted immediately to a designated Isolation Area.
- **Behavioral Triage:** Assessment by experienced handlers for fear or stress. Animals experiencing severe distress should be housed in reinforced, secure areas away from the general population to prevent injury to staff and other animals.

Biosecurity Zones: The shelter should be physically divided into three distinct zones:

- **General Population:** Healthy, owned animals.
- **Isolation:** Animals suffering injuries or illness.
- **Quarantine:** For animals newly admitted into the shelter for requisite observation.

8.1.2 Setup Standards and Containment

Emergency shelters must be designed to meet the basic welfare needs of different species.

- **Space Requirements:** Animals must be provided with sufficient space to lie down, stand, and turn comfortably.
- **Containment and Segregation:** Shelters must have secure fencing or pens to prevent escapes and should segregate animals based on species, sex, age, and health status.
- **Protection:** Shelters should provide cover from adverse weather using tarpaulins, shade nets, or other suitable materials.
- **Ventilation:** Proper airflow is essential to prevent the buildup of heat and ammonia, especially in enclosed spaces.

8.1.3 Hygiene and Sanitation Protocols

Maintaining high hygiene standards is critical to prevent disease outbreaks.

Waste Management: Regular safe disposal of manure and waste must be implemented immediately.

Cleaning and Disinfection: Enclosures, feeding troughs, and water containers should be cleaned daily and disinfected appropriately.

Biosecurity: Measures such as footbaths at the entrance and isolation areas for sick animals are mandatory to reduce disease risks.

8.1.4 Emergency Feeding and Watering

Adequate nutrition and hydration are life-saving essentials.

Water: Animals must have continuous access to safe, potable water, which should be purified if contaminated.

Feed: While full rations may not be possible, animals must receive maintenance or survival rations. Diet changes should be gradual to reduce digestive stress. Emergency feed can include hay, silage, urea-molasses mineral blocks (UMMB), and other safe alternatives. For aquatic animals, emergency feeding preparedness shall include the protection and management of fish feed stocks to prevent water contamination and post-disaster spoilage.

8.1.5 Behavioural Enrichment

Reducing stress is central to animal welfare in shelters.

Social Needs: Herd animals like cattle and goats should be grouped to improve their well-being.

Environmental Needs: Providing basic enrichment, like bedding or space to move improves their psychological health and allows them to express normal behaviours.

8.1.6 Veterinary Management in Emergency Shelters

The establishment of an emergency shelter requires the immediate implementation of a veterinary management plan to safeguard the health and welfare of the concentrated animal population. The on-site veterinary team, led by a qualified veterinarian, is responsible for the following core functions:

Intake Examination and Triage: All animals entering the shelter must undergo identification marking and health screening to identify injury, illness, or signs of contagious disease. Animals will be triaged and prioritized for care accordingly.

Daily Health Monitoring: Veterinary staff must conduct daily rounds to visually inspect all animals, identifying any that are sick, injured, or distressed. Early detection is critical to preventing outbreaks.

Disease Prevention and Biosecurity: The veterinary team will oversee all biosecurity protocols, including the management of isolation pens for sick animals, disinfection procedures for personnel and equipment, and vector control measures.

Treatment of Shelter-Related Conditions: Provide ongoing veterinary treatment for common conditions exacerbated by shelter environments, such as respiratory infections, diarrhea, lameness, and skin conditions.

Animal Welfare Assessment: Continuously monitor the welfare of sheltered animals using the Five Freedoms framework, ensuring they have adequate feed, water, comfort, and are free from fear and distress.

8.2 Post-Disaster Animal Rehabilitation

Rehabilitation is the long-term process of restoring animal health, rebuilding livelihoods, and strengthening community resilience. This requires a detailed and structured plan for post-disaster recovery and rehabilitation.

Disease Surveillance: Deploy Disease Surveillance Teams to disaster-affected areas for active surveillance, sample collection, and testing to prevent the spread of infection.

Animal Waste Disposal: Prepare compost or dig manure pits for animal waste disposal, in line with CPCB guidelines as applicable.

8.2.1 Veterinary Treatment and Health Monitoring

Veterinary care shifts from emergency responses to comprehensive treatment of injuries, management of disaster-related diseases, and herd health programs. Preventive measures such as vaccination and deworming are essential for restoring herd health and preventing further outbreaks.

8.2.2 Livelihood Restoration through Resilient Entrepreneurship

The recovery phase shall actively promote resilience through targeted entrepreneurship. Support shall be provided to local youth, women, and Farmer Producer Organizations to establish enterprises focused on disaster-resilient solutions, such as:

- Commercial production of hardy, drought-resistant fodder varieties.
- Manufacturing of Urea-Molasses Mineral Blocks and other emergency feed supplements.
- Design and construction of low-cost, flood- and cyclone-resilient animal shelters.

This approach transforms post-disaster recovery into an opportunity for creating sustainable, risk-informed livelihoods, directly leveraging the Department of Animal Husbandry and Dairying (AH&D) Skill Development Framework's focus on fostering entrepreneurship in the livestock sector.

8.2.3 Rehabilitation and Management of Community Animals

The long-term rehabilitation of rescued community animals requires a specific strategy focused on preventing them from returning to a state of vulnerability. This involves implementing a program of vaccination, sterilization, and identification for all medically cleared animals held in shelters. The final arrangement may include adoption programs for socialized animals or release for non-adopted animals back into their original territory once it is deemed safe and habitable, as part of a managed Trap-Neuter-Return program.

8.2.4 Wildlife Rescue and Habitat Restoration

Wildlife rehabilitation focuses on the recovery and release of rescued animals into their habitats. This involves specialized veterinary treatment and long-term habitat restoration to ensure ecosystems can support released species in effect.

Effective post-disaster recovery involves a dual focus on veterinary infrastructure and ecosystem resilience. The creation of disease surveillance hubs is recommended in Protected Areas to manage zoonotic risks and treat wildlife. Animals cleared for release should be monitored using modern technological aids and permanently injured wildlife

shall receive care in designated lifetime care facilities. Ecological strategies emphasize removing invasive species, restoring water sources, and replanting indigenous flora to rebuild corridors.

8.3 Reunification and Discharge Protocols

The key purpose of emergency sheltering is the safe reunification of displaced animals with their verified owners. To maintain a strict chain of custody and prevent theft, discharge protocols must require positive proof of ownership (e.g., pre-disaster photographs, veterinary records, microchip matches, or detailed physical descriptions verified against intake photos) prior to release. Owners or authorized agents must sign a formal Discharge Form to acknowledge receipt and release the facility from liability. The SAWB shall maintain a centralized, accessible "Lost and Found" database to facilitate matching for shelter management. Animals remaining unclaimed beyond the designated emergency holding period (recommended minimum 30 days) shall be transferred to recognized Animal Welfare Organizations (AWOs), registered Goshalas, Pinjrapoles, or local Society for the Prevention of Cruelty to Animals (SPCAs) for long-term care or adoption, in strict compliance with relevant legal provisions.

8.4 Restocking

Restocking has been a favoured recovery activity, but it often overlooks the needs of the surviving animal population, leading to a second wave of mortality. Early-stage intervention for surviving animals is often cost-effective, more sustainable, and more humane than allowing animals to succumb to their conditions and requiring herd replenishment. Therefore, a clear hierarchy of preference must be followed when considering stocking options:

- **Priority 1:** Interventions designed to safeguard surviving livestock, which entail the restoration of their health and potential for productivity.
- **Priority 2:** Restocking from outside sources, only as a last resort and with strict disease control and animal welfare protocols.

Restocking should only be done after ensuring surviving animals are stabilized. New stock must be healthy, adapted to local conditions, and screened for diseases. Training in animal husbandry is necessary for recipients to ensure sustainable livestock management.

> The risks of poorly planned restocking are significant. Following Cyclone Nargis in Myanmar in 2008, large losses of working buffalo were needed to harvest rice. A subsequent restocking program failed to properly address animal health considerations, leading to the introduction of new diseases and further mortality of the new stock, making a bad situation worse.

8.4.1 Restocking Implementation Guidelines

Beneficiary Selection: Beneficiary selection requires participation of all the stakeholders and representatives of the affected population.

Criteria to consider include: Applicable permits held for farm site and experience and skills and resources at the farmer's disposal to cater to livestock.

In the aftermath of a disaster, restocking in the affected area(s) should be carefully considered keeping in mind the propensity for the site to be affected by repeated disasters and assessment in this regard. Areas which have a high propensity for being affected by disasters shall not be selected for restocking.

Animal Selection: Animals selected for distribution need to be adapted to local conditions. It is recommended to purchase animals locally, which makes it easy to assess the quality of stock, and also, there is no need to quarantine the animals. A veterinarian should ensure that the animals are healthy and fit for distribution. On the other hand, animals purchased from an outside area need to be quarantined, during which vaccination and ecto- and endoparasite control measures should be taken. When considering restocking for aquaculture units, preference should be given to fish seed or broodstock from certified hatcheries with verified disease-free status.

Timing: Before planning restocking, the availability of feed, water, and shelter needs to be ensured.

Animal Health:

- Proper vaccination must be ensured for all new animals.
- Quarantine of new animals must be provided in makeshift facilities before introducing them to the main herd.

8.5 Carcass Disposal Methods and Animal Waste Disposal

The rapid, safe, and scientific disposal of dead animals is critical to prevent the spread of disease and protect public and environmental health. Special attention must be paid to the proximity of disposal sites to water supply systems. Improper disposal poses a grave risk of contaminating groundwater and community water sources. Therefore, site selection must be scientifically validated to ensure protection from leachate runoff into local water bodies, in adherence to the 'Guidelines for Carcass Disposal' issued by CPCB.

Carcass Management and Environmental Health Hazards, J&K Floods (2014):

The rapid and sanitary disposal of deceased animals is a primary public health imperative; however, severe logistical bottlenecks frequently cause municipal protocols to fail during catastrophic events. Post-disaster analyses of the severe 2014 floods in Jammu and Kashmir revealed critical gaps in environmental health management. Due to the overwhelming scale of the inundation and a lack of pre-identified disposal sites, nearly 43% of deceased animal carcasses were left unmanaged and were subsequently washed away by the gushing floodwaters, creating massive downstream biological contamination risks. Furthermore, formal government and municipal agencies were only able to facilitate the safe disposal of 7.5% of the remaining carcasses. This demonstrates that municipal disaster plans must pre-contract heavy transport machinery and pre-designate elevated, environmentally safe burial sites well before the monsoon season begins.

To promote coherence in the regulatory framework and environmental compliance, all carcass disposal operations shall be executed in accordance with the *Prevention and Control of Infectious and Contagious Diseases in Animals (Form of Vaccination Certificate, Manner of Post Mortem Examination and Disposal of Carcass) Rules, 2010*. The environmental standards prescribed in the CPCB's 'Guidelines for Carcass Disposal' must be adhered to simultaneously. Disposal must be done under the supervision of the State AHD and local bodies.

All personnel must wear appropriate PPE and follow strict biosecurity measures. The approved methods shall be followed, with the choice depending on the disease agent, number of carcasses, and local environmental conditions as stated in the 'Prevention and Control of Infectious and Contagious Diseases in Animals (Form of Vaccination Certificate, Manner of Post Mortem Examination and Disposal of Carcass) Rules, 2010', which provides the specific legal requirements for disposal. These methods are not discretionary and all personnel must adhere to the prescribed procedures outlined. The disposal of wild animal carcasses should be a regulated process requiring official verification and written authorization to ensure compliance with existing legal provisions.

Animal Waste Management: Improper disposal of manure can enhance pest problems. Preparation of compost or digging manure pits should be considered.

09 Animal Health and Welfare Management

9.1 Disease Surveillance and Reporting

Active disease surveillance is a critical veterinary function in any disaster response to enable early warning and rapid control of potential outbreaks. Veterinary teams could:

- Implement active surveillance systems in emergency shelters and affected communities to monitor for clinical signs of key infectious diseases.
- Investigate any unusual disease events or clusters of mortality in either animal or human populations immediately.
- Utilize and report through official national channels such as the National Animal Disease Referral Expert System (NADRES) to ensure information is shared with decision-makers at the state and national levels.

9.2 Biosecurity in Emergency Operations

Strict biosecurity is the most effective tool for preventing the spread of disease in high-risk disaster environments. The Isolation-Resistance-Sanitation (IRS) framework must be applied to all operations:

- **Isolation:** Establish and manage quarantine facilities for all new animal arrivals to shelters for a minimum of 40 days or as per parameters prescribed by the Central or State agencies. Immediately separate any animal showing signs of infectious disease.
- **Resistance:** Implement strategic vaccination programs based on epidemiological risk to strengthen herd immunity.
- **Sanitation:** Enforce strict protocols for the daily cleaning and disinfection of all shelters, enclosures, feeding and watering equipment, transport vehicles, and personnel.

Vector Management:

- Identify areas with a high risk of vector-related diseases through epidemiological studies.
- Test vectors (e.g., ticks) to confirm or rule out the presence of pathogens.
- Establish monitoring, checking, and control measures for vector populations.

Biosecurity across all animal systems, including fish and other aquatic species, is closely linked to environmental stability. Disaster events such as floods, cyclones, heatwaves, or infrastructure failure can rapidly alter housing or water conditions, increasing disease risk and the likelihood of mass mortality.

Emergency operations shall therefore include routine monitoring of critical environmental parameters relevant to the species and system. In the case of aquaculture this includes -

dissolved oxygen, pH, temperature, salinity, ammonia, and turbidity.

9.3 Zoonotic Disease Prevention and a One Health Approach

Disasters create conditions of stress, displacement, and overcrowding that precipitate outbreaks of infectious diseases. Disasters increase the risk of zoonotic diseases-infections transmissible between animals and humans. Most diseases seen are a result of existing pathogens flaring up in immunocompromised animals, rather than entirely new agents. Post-disaster medical interventions must strictly regulate antibiotic use to prevent the exacerbation of drug-resistant diseases. Upon detection of a zoonotic event, a multi-sectoral One Health Rapid Response Team (RRT) must be mobilized. Veterinary response teams must be prepared to manage the following common infectious diseases encountered during disasters:

- **Viral:** Foot and Mouth Disease (FMD), Peste des Petits Ruminants (PPR), Classical Swine Fever, and Avian Influenza.
- **Bacterial:** Anthrax (soil disturbance), Haemorrhagic Septicaemia (stress), Leptospirosis (contaminated water), and Tetanus (injuries).
- **Mycotic:** Respiratory Mycosis and Ringworm (hygiene/crowding).
- **Waterborne:** Streptococcus iniae (fish handling), Aeromonas species (stagnant water), Vibrio species (brackish/coastal water), and Mycobacterium marinum (aquaculture contact).

Thus, a One Health approach, recognizing the interconnectedness of human, animal, and environmental health, is mandatory. Veterinary professionals must:

- Collaborate directly with public health officials to conduct joint surveillance for key zoonoses like leptospirosis, and anthrax.
- Lead public awareness campaigns on preventive measures, such as reporting animal bites immediately, and ensuring water is safe for consumption.
- Oversee the management of community and stray animals, which can act as reservoirs for diseases.
- Establish structured data linkages between animal disease reporting systems and human disease surveillance platforms, utilizing enhanced syndromic surveillance to monitor disease trends and notify any upsurge of epidemic-prone communicable diseases for an early public health response.
    - This syndromic surveillance should actively incorporate observations from non-veterinary reporters (such as farmers and livestock owners) to detect abnormal patterns.
    - This optimizes resource use by launching detailed, rapid investigations only when there is clear evidence that an unusual biological event is occurring.
    - To automate and streamline this process, authorities should consider developing an Application Programming Interface (API) to integrate reporting

from IDSP/syndromic surveillance with NADRS/National Digital Livestock Mission, ensuring real-time cross-notification to the State/District Zoonoses Committees.

9.4 Field-Level Animal Welfare Assessment

To ensure a holistic evaluation of animal well-being in post-disaster environments, assessment protocols shall utilize the Five Domains Model. This framework evaluates four physical domains to determine the cumulative Mental State of the animal. This approach is universally applicable to all species, including farmed livestock and community animals, shifting the focus from mere survival to the minimization of distress and the promotion of positive experiences.

- **Nutrition:** Assess the availability of fresh water and species-appropriate nutrition, ensuring sufficient quality and quantity to maintain vigor, whether through provided feed (for livestock) or suitable resources for community animals.
- **Environment:** Evaluate physical comfort levels, ensuring protection from thermal extremes, provision of dry resting areas, and noise control, applicable to both containment shelters and open community zones.
- **Health:** Monitor for injuries, disease, and physical impairment; ensure rapid triage and medical intervention to support functional capacity and alleviate pain.
- **Behavior:** Verify the provision of sufficient space and environmental complexity to allow for the expression of natural behaviors and appropriate social interactions with conspecifics (e.g., herd or pack dynamics).
- **Mental State:** Assess the psychological outcome of the physical domains, prioritizing the reduction of negative states (e.g., fear, panic, anxiety) and the enhancement of positive experiences (e.g., safety, comfort, calmness).

9.5 Veterinary Public Health (VPH) Responsibilities

Beyond zoonotic disease control, the veterinary role in public health during a disaster includes:

- **Food Safety:** Ensuring the safety and hygiene of animal-source foods (milk, eggs) being produced and consumed in relief camps.
- **Environmental Health:** Overseeing the safe and scientific disposal of all animal carcasses and the management of animal waste to prevent the contamination of soil and water sources.

10 Animal Welfare Considerations in Disaster Planning

The successful management of animals in disasters is fundamentally guided by the principles of animal welfare. Animal welfare is defined as the physical and mental state of an animal in relation to the conditions in which it lives and dies. Integrating these principles into all phases of disaster management is not only an ethical imperative but also a practical necessity for ensuring the success of the overall response and the resilience of the affected community.

10.1 Ethical Guidelines for Humane Handling and Restraint

All interactions with animals during a disaster must prioritize both human safety and humane treatment.

Safety First: The safety of the animal handler is always the top priority in any rescue or handling scenario. Personnel must be equipped with appropriate Personal Protective Equipment (PPE) and should never attempt a rescue without a proper assessment of the risks involved.

Understand Animal Behaviour: Safe and effective handling demands a knowledge of ethology, the scientific study of animal behaviour. Responders must understand the difference between varied species of animals, as their reactions to stress and perceived threats are fundamentally different. It is critical to recognize that a disaster environment induces extreme stress, which can make even normally docile animals unpredictable and dangerous.

Approach Calmly and Patiently: Handlers should approach animals slowly and calmly, avoiding loud noises, sudden movements, and direct eye contact, which can be perceived as threatening. The objective is to use signals that animals can respond to naturally, allowing them to cooperate rather than forcing them into compliance.

Use Appropriate and Humane Equipment: The equipment used for handling and restraint, such as halters or slings, must be appropriate for the species and used only by trained personnel. The goal is always to use the least amount of force necessary to safely control the animal.

Prioritize Saving Life: The overarching goal of any handling or rescue operation is to save the animal's life without creating further injury or damage.

10.1.1 Practical Handling Techniques and Safety

Effective handling is based on understanding animal behaviour, particularly the 'flight zone' and 'point of balance'.

- **Approach:** Handlers should approach animals calmly from the side, avoiding the rear blind spot. Use slow, deliberate movements and avoid direct eye contact, which can be perceived as a threat.

- **Low-Stress Herding:** Implement recognized low-stress stockmanship techniques. For example, to move cattle forward, the handler should walk past their point of balance (the shoulder) in the opposite direction of desired movement.
- **Technical Rescue:** Train responders in specialized techniques for large animal rescue.

Practical, field-tested handling principles and specific rescue techniques are imperative on-site.

Understanding the Flight Zone and Point of Balance:

- **Flight Zone:** An animal's personal space. Entering it will cause the animal to move away. Its size decreases with frequent, calm handling.
- **Point of Balance:** Located at the animal's shoulder. To move an animal forward, the handler should cross the point of balance from front to back. To move it backward, cross from back to front.
- **Blind Spot:** An area directly behind the animal. Avoid approaching from this area to prevent startling the animal, which may cause it to kick.

Low-Stress Herding Techniques:

- Apply pressure from an angle to the side of the cattle to make it move in the desired direction.
- Stop forcing stock; instead, set up the situation so they want to move.
- Avoid yelling, crowding, and fast movements.

The scientific management of aquatic species requires a focus on minimizing stress through environmental control rather than physical restraint. To ensure animal welfare during interventions, operators must gradually reduce stocking density to prevent overcrowding and maintain continuous oxygenation within species-specific limits. Physical trauma and stress should be mitigated by using specialized, non-abrasive equipment, keeping animals submerged to limit air exposure, and scheduling operations during cooler times of the day. In cases of disease outbreaks amidst disasters, protocols must focus on rapid restoration of environmental stability, disinfection of equipment, and the prevention of water exchange to prevent pathogen spread.

10.2 Criteria for Humane Euthanasia

In disaster situations, euthanasia must be viewed strictly as a last-resort veterinary medical intervention to end intractable suffering, and never as a tool for population control or resource management. The application of humane euthanasia must adhere to the following statutory and procedural requirements:

Existing Legal Framework: Under Section 13 of the Act, destruction of an animal is permissible only where it would be "cruel to keep it alive." Any such decision must be supported by written certification from a registered government veterinary officer.

Further, as per Rule 8 of the Prevention of Cruelty to Animals (Animal Husbandry Practices

and Procedures) Rules, 2023, euthanasia is permissible where an animal is diseased and poses a documented risk of disease transmission, or where a registered veterinary practitioner certifies that the animal is mortally injured, severely incapacitated, or in a condition where continued survival would result in undue suffering.

Operational Norms:

- Sedation must be administered where the animal is distressed, fearful, or poses safety risks. Euthanasia must not be carried out in the presence of other live animals.
- The procedure must involve the administration of an overdose of anaesthetic to ensure rapid unconsciousness followed by death.
- The attending veterinary practitioner must remain present until death is confirmed.

Procedural Integrity: The procedure must be carried out only by a qualified veterinarian using methods recognised by the Veterinary Council of India (VCI), ensuring rapid loss of consciousness followed by death without pain, panic, or distress.

10.2.1 Veterinary Ethical Framework for Triage and Euthanasia

The decision to euthanize an animal is a grave responsibility that must be made by a qualified veterinarian. Euthanasia should be considered for animals with catastrophic, untreatable injuries causing intractable pain, a hopeless prognosis for recovery, or those posing an unmanageable threat to public health.

The following methods, procedures, and practices are unacceptable on animal welfare grounds for euthanasia:

Chemical Methods: Use of neuromuscular blocking agents (e.g., curariform drugs, nicotine) alone, strychnine, chloral hydrate, cyanide, formalin, and household products.

Mechanical/Physical Methods: Air embolism on a conscious animal, drowning, hypothermia/rapid freezing, exsanguination of a conscious animal, and electrocution of a conscious animal without a preceding stun that renders the animal immediately unconscious. Stunning alone is not a method of euthanasia and must be followed by a method that ensures death.

10.3 Integration of One Health Principles

The "One Health" approach is a collaborative, multidisciplinary framework that recognizes the intrinsic connection between the health of people, animals, and their shared environment. This principle must be fully integrated into disaster planning, as disasters profoundly impact all three domains. Disaster response must not be siloed; it requires cooperative action between veterinary, medical, and environmental health professionals to achieve optimal outcomes. Planning should incorporate joint risk assessments and coordinated surveillance systems for issues like zoonotic diseases and contaminated water sources, which affect both human and animal populations. The protection of animal health is not a separate goal but a direct contribution to safeguarding public health and environmental safety.

10.4 Zoonotic Disease Mitigation

Disasters create conditions that can facilitate the outbreak and spread of zoonotic disease infections that are transmissible between animals and humans.

Surveillance and Early Warning: Active surveillance for known zoonotic diseases like leptospirosis, and anthrax must be a priority in disaster-affected areas. Prompt investigation of any unusual disease events in either animal or human populations is critical for early detection. Before and during deployment, veterinary teams must check available information on disease prevalence and outbreaks from established national and international sources. These sources include the World Animal Health Information System (WAHIS), ProMED-mail, EMPRES-i, and the National Animal Disease Referral Expert System (NADRES).

Biosecurity and Hygiene: Strict biosecurity measures must be enforced in emergency shelters to prevent disease transmission. This includes isolating sick animals, practicing regular handwashing, and disinfecting equipment and enclosures.

Carcass Management: The rapid, safe, and hygienic disposal of animal carcasses is essential to prevent the contamination of soil and water sources and to eliminate breeding grounds for disease vectors.

Vector Control: The disaster environment, flooding in particular, can lead to a proliferation of vectors like mosquitoes and rodents. Vector control programs are a necessary measure to mitigate the risk of diseases such as malaria, dengue, and leptospirosis.

Public Awareness: Communities must be informed about zoonotic risks and educated on preventive measures, such as boiling drinking water, avoiding contact with stray animals, and reporting any animal bites immediately.

10.5 The Role of Animal Welfare Science (AWS)

Animal Welfare Science (AWS) is regarded as the rigorous use of scientific methods to study the quality of life of animals. Born out of ethical concern for animals, AWS integrates ethological, psychological, physiological, and health measures to inform deliberations about practices involving animals. In the context of disaster management, AWS is important for:

- Developing evidence-based assessments in concert with ethical objectives to minimize harm to the smallest number of animals.
- Providing species-specific guidance on animal handling, translocation, the effectiveness of rescue procedures, and humane depopulation techniques
- Training first responders with the knowledge and skills to recognize when animals are distressed, what constitutes poor welfare, and how to take effective steps to address welfare harms.
- Informing the design of housing systems that can increase animals' chances of survival during a disaster.

11 Capacity Building and Training

Capacity building is the process through which individuals, organizations, and communities obtain, strengthen, and maintain the capabilities to suitably manage all aspects of disaster risk. A comprehensive and sustained program of training, drills, and collaborative workshops is essential to ensure that all stakeholders are prepared to protect animal life and welfare during a crisis. The goal is to create a culture of prevention and preparedness that permeates all levels of society, from national-level responders to individual animal owners.

11.1 Training Curricula

Targeted training curricula must be developed and delivered to meet the specific needs of different groups involved in disaster response in connection with animal welfare.

This initiative is legally underpinned by the Disaster Management (Amendment) Act, 2025, which empowers the National Disaster Management Authority (NDMA) to 'plan and coordinate specialised training programmes' for all levels of responders. Therefore, the NDMA shall direct the National Institute of Disaster Management (NIDM), in its capacity as the national training body to develop, validate, and institutionalize the AiDRR training curricula outlined in these guidelines. This ensures a standardized, nationally recognized approach to capacity building for animal disaster management.

To ensure alignment with national standards and facilitate professional certification, it is recommended that relevant training curricula developed under these guidelines are based on the National Occupation Standards (NOS) and Qualification Packs (QPs) designed by the Agriculture Skill Council of India (ASCI). Drawing from relevant QPs already identified by the Department of Animal Husbandry and Dairying and Department of Fisheries, this approach promotes standardized, certifiable training under the Skill India initiative that directly bolsters the national skilled workforce.

Training modules could be developed in collaboration with key national institutions such as the National Disaster Management Authority (NDMA), National Institute of Disaster Management (NIDM), and the National Disaster Response Force (NDRF). Training should target a wide range of personnel, including veterinary professionals, paravets, attendants, SDRF, and Civil Defence personnel. Regular mock exercises should be conducted based on state-specific disaster management plans in particular.

11.1.1 Curriculum for First Responders

First responders require specialized skills to safely and humanely manage animals encountered during rescue operations.

Module 1: Humane Animal Handling and Behaviour

This module will cover the principles of animal behaviour (ethology), focusing on

recognizing signs of stress, fear, and distress in different species. Trainees will learn low-stress handling techniques to minimize risk to both the animal and the rescuer.

Module 2: Technical Large Animal Emergency Rescue (TLAER)

This practical module will provide training on specialized techniques and equipment for rescuing large animals from situations like floods, mud entrapment, and collapsed structures.

Module 3: Biosecurity and Zoonotic Disease Awareness

Responders will be trained on essential biosecurity protocols, including the use of Personal Protective Equipment (PPE) and basic decontamination procedures, to prevent the spread of infectious and zoonotic diseases.

Module 4: Personal Safety in Animal-Related Emergencies

This module will focus on scene assessment, identifying animal-specific hazards, and maintaining personal and team safety in unpredictable disaster environments.

Module 5: Overcoming Cognitive Biases in Disaster Planning

This module will address the common cognitive bias known as "positive asymmetry," a tendency to focus on best-case scenarios while failing to adequately envision the worst. Trainers will use case studies to illustrate how this "failure of imagination" leads to inadequate preparedness. The training will introduce a "separate-but-equal" thinking strategy, which involves planning for the worst-case scenario independently of the best-case, to build more robust and realistic disaster plans

Module 6: Safe Carcass Handling and Decontamination

This module will train responders on the principles of safe carcass retrieval, personal biosecurity, and on-site decontamination procedures. Topics will include zoonotic risks from carcasses, correct use of PPE for disposal operations, and methods for securing and preparing a disposal site to prevent environmental contamination and disease spread.

11.1.2 Curriculum for Veterinarians and Paraprofessionals

Veterinary professionals require specialized disaster management training that transcends the standard clinical practice to prepare them for the different challenges of a crisis.

The training curricula designed under the aegis of NIDM shall be designed to build upon the foundational competencies that all veterinary graduates are required to master during their mandatory internship, as per the MSVE Regulations, 2016. These existing skills, which include emergency handling, anaesthesia, triage, fluid therapy, and disease diagnostics, form the prerequisite knowledge base for advanced disaster management training. Therefore, the specialized modules will focus on applying these core veterinary skills in the unique, resource-constrained, and high-stress context of a disaster.

Paraprofessionals (VPPs) form the skilled tier of the workforce that supports registered veterinarians. Their curriculum must be on assisting veterinarians and fisheries science

experts in field-based activities, including preventive and curative care, animal breeding, farm management, aquaculture farm management, veterinary extension, and importantly, disaster management.

Training for veterinarians and paraprofessionals shall be structured into a comprehensive, multi-day program covering the following essential modules:

Module 1: Disaster Management Principles: Introduction to the DM cycle, legal frameworks, and the Veterinary Emergency Response Unit (VERU).

Module 2: Field Operations: Principles of Disaster Assessment, Operational Planning, Deployment Responsibilities, Simulation-based training on the SAVE (Secondary Assessment of Victim Endpoint) Triage System, mass casualty stabilization, and field treatment protocols for common disaster injuries like burns, fractures, and smoke inhalation.

Module 3: Animal Handling and Sheltering: Techniques for scientific animal and fish handling, transportation, emergency shelter setup, and veterinary triage in disasters.

Module 4: Emergency Shelter Medicine: Training on managing herd health, biosecurity protocols, preventing disease outbreaks, and applying animal welfare standards in high-density temporary shelter environments.

Module 5: Community and Livelihood Support: his module will cover principles of community preparedness and introduce internationally recognized frameworks, including Management of Animals in Emergencies (MAE) and the Livestock Emergency Guidelines and Standards (LEGS).

Module 6: Disease Control, Field Epidemiology, and Biosecurity: Advanced modules on rapid epidemiological risk assessment, management of infectious diseases, emergency vaccination strategies, and scientific carcass disposal. This module must also include training for field workers to support outbreak investigation and response, and prepare veterinary hospitals to handle deliberate or natural outbreaks of pandemic potential diseases.

Module 7: Specialized Rescue: Management of wildlife in emergencies and advanced rescue scenarios.

Module 8: Supervision of Mass Carcass Disposal Operation: This advanced module will cover the command-and-control aspects of managing mass mortality events. Topics will include selecting the appropriate disposal method based on epidemiology and environmental risk assessment, coordinating with public works and environmental agencies, managing logistics for heavy equipment and supplies, and ensuring compliance with all legal and biosecurity protocols for carcass disposal and site decontamination.

Module 9: Wildlife Curricula: This will include wildlife health management, scientific capture techniques, forensic sample collection, competency in Electronic Surveillance (e-surveillance), and the operation of Unmanned Aerial Vehicles (UAVs/Drones) for rapid damage assessment and monitoring of stranded wildlife in inaccessible terrain.

11.1.3 Curriculum for Community Animal Health Workers (CAHWs)

Community Animal Health Workers (CAHWs), such as A-HELP agents and Pashu Sakhis, are the absolute first responders and form the bedrock of grassroots resilience. They are selected from within their own communities to provide basic, last-mile animal healthcare services. The training should be based on short-term, competency-based modules as below:

Module 1: Basic Animal First Aid and Preventive Care: Administer first aid for minor wounds, support deworming and vaccination drives, and provide nutritional advice.

Module 2: Disaster Preparedness and Early Warning: Understand official warnings, assist community members in creating emergency kits and evacuation plans, and conduct rapid needs assessments post-disaster.

Module 3: Disease Surveillance and Reporting: Identify signs of common diseases, report outbreaks immediately to VPPs or veterinary authorities, and assist in implementing biosecurity measures.

Module 4: Community Mobilization and Linkages: Act as a bridge between farmers and formal veterinary services, including Mobile Veterinary Units and hospitals.

11.1.4 Curriculum for Community Volunteers and Animal Owners

Animal owners and local volunteers are the first line of defence and must be empowered with the knowledge to protect their animals.

Module 1: Family and Farm Disaster Planning

This module will guide participants through the process of creating a simple, actionable disaster plan that includes provisions for their animals. This includes preparing an emergency kit with essential supplies like food, water, medications, and identification records.

Module 2: Basic Animal First Aid

Participants will learn basic first aid skills to manage common injuries like wounds and fractures, providing critical care until professional help is available.

Module 3: Safe Evacuation and Sheltering-in-Place

This module will provide practical guidance on how and when to evacuate with animals, including safe handling and transport. It will also cover how to safely shelter animals in place if evacuation is not possible. Owners must habituate animals to carriers/crates during 'peace-time' to prevent panic during rapid evacuation. Based on lessons learned from evacuations, all animal owners must be trained to maintain a 'Grab-and-Go' bag, a pre-packed emergency kit with essentials (food, water, meds, records, carrier, leash, waste bags, comfort items) for pet safety and well- being.

Module 4: Understanding Early Warnings

Community members will be trained on how to interpret official disaster warnings and

what actions to take to ensure the safety of their families and animals upon receiving an alert.

Module 5: Safe Handling of Community Animals: This module will provide practical training on recognizing the body language of stray and feral animals, using humane capture equipment like nets and traps, and applying safe handling techniques to prevent injury to both the handler and the animal during rescue and containment operations.

Standardized Job Action Sheets and Field Guides: For a coherent and professional capacity-building process involving spontaneous volunteers, it is recommended that NIDM formulate and issue standardized "Job Action Sheets" and portable field handbooks. These resources, intended for immediate distribution at staging areas as "Just-in-Time" training tools, shall encompass critical operational protocols such as the "Stop-Look-Think" safety checklist, visual references for interpreting animal body language and diagrams for essential knot tying.

11.1.5 Veterinary Emergency Response Team Training

Designated members of Veterinary Emergency Response Units (VERUs) or Disaster Assessment and Response Teams (DARTs) require specialized training. This training must cover the entire operational cycle, including team formation, pre-deployment readiness protocols (e.g. "go bags," MEDEVAC plans), on-site operational command, and post-intervention reporting. An important component of this training must be hands-on instruction in the use of all specialized animal rescue and handling equipment, including ropes, slings, catch poles, transport cages and humane restraint devices.

11.2 Community-Level Capacity Building and Mobilization

Building local capacity is a core principle of the PM's Ten-Point Agenda and is critical for an effective response.

Community Participation: Public awareness programs should be organized with the participation of villagers and Panchayati Raj Institution (PRI) members to spread awareness about managing animal resources during disasters. A local emergency management committee should be formed involving local people.

In urban areas, capacity building efforts shall focus on the development of disaster rescue and first aid teams for animals at the ward level, ensuring that trained volunteers are available in every neighbourhood to support municipal response efforts.

Training of Local Volunteers:

- State/UT AHDs, in cooperation with the State Disaster Management Authority (SDMA), should explore the use of Aapda Mitr volunteers in animal disaster management.
- Local bodies, animal owners, and rural youth should also be trained as Aapda Mitr for animal rescue operations.
- Existing community animal health workers, or Pashu Mitr, should be trained in

animal disaster management and rescue operations

- To enhance the technical capacity of local volunteer networks, the State Disaster Management Authority (SDMA) and District SPCA shall formally integrate the Honorary Animal Welfare Representatives or representatives from recognised AWOs trained and nominated by the Animal Welfare Board of India. These representatives shall be utilized as lead trainers and coordinators for community-level animal rescue teams, leveraging their specialized training in animal welfare laws and coordination with law enforcement authorities.

11.3 Drills and Simulation Exercises

Training must be reinforced through regular practical exercises to ensure that plans are viable and that response teams can function effectively under pressure.

Simulation Exercises: Regular table-top simulation exercises are essential for testing and refining emergency plans, communication protocols, and inter-agency coordination. These exercises bring together decision-makers from various agencies to work through a simulated disaster scenario, identifying gaps and weaknesses in the plan without deploying physical resources.

Field Drills: Full-scale field drills are necessary to test the operational capabilities of response teams and the functionality of equipment. These drills should be conducted annually by veterinary institutions and disaster response forces and should practice key skills such as setting up temporary shelters, emulating technical animal rescues, and operating mobile veterinary clinics. Community participation in drills is a highly effective tool for building local preparedness.

11.4 Cross-Sectoral Workshops and Collaboration

A sound disaster management requires breaking down silos and fostering collaboration across different sectors.

The State Animal Welfare Board (SAWB) shall be responsible for convening annual cross-sectoral workshops for the purpose of developing and updating the animal-inclusive components of the State Disaster Management Plan (SDMP). As a multi-stakeholder body, the SAWB is uniquely positioned to lead the joint planning process, ensuring that the roles and responsibilities of the Animal Husbandry Department, Forest Department, Public Health services, District SPCAs, and recognized AWOs are clearly delineated and integrated.

Joint Planning Workshops: Regular cross-sectoral workshops should be conducted, bringing together personnel from disaster management authorities, animal husbandry departments, public health services, forestry departments, recognised AWOs, and the private sector.

Joint One Health Training and Simulation Exercises: Develop collaborative training modules and joint simulation exercises based on the "One Health" approach. These exercises must actively integrate public health officials, veterinary professionals, environmentalists, and disaster management personnel to encourage interdisciplinary

collaboration and ensure the effective, coordinated management of public health and zoonotic threats following disasters. Furthermore, specialized bridge courses and joint orientations on preventive medicine should be formalized for both veterinary and medical practitioners to effectively cross-train them as unified One Health professionals. This training must cover Infection Prevention and Control practices for high-threat pathogens and biosafety to ensure staff safety during response efforts.

Shared Learning and Understanding: These workshops serve as a platform to enhance mutual understanding of each agency's roles, responsibilities, and capacities. This fosters trust and builds the professional relationships that are critical for smooth coordination during a real emergency.

Integrated Plan Development: Collaborative workshops should be used for the joint development, review, and updating of district, state, and national disaster management plans to ensure that animal welfare is fully and practically integrated across all relevant sectors.

11.5 Professionalisation and Mutual Development

Effective capacity building needs a dual approach to professionalisation:

For Animal Responders: Those from the 'animal' side should be encouraged to gain credibility within the disaster management profession through completion of emergency management training, qualifications, and credentials such as the Certified Emergency Manager (CEM).

For Disaster Personnel: Those in the human-focused 'disaster management' side need to better understand the importance of including animals in disaster arrangements through professional development such as World Animal Protection's PrepVet course and FEMA Independent Study courses on companion animal and livestock emergency planning.

11.6 Case Studies in Professional Training and Capacity Building

Veterinary Emergency Response Units (VERU): First piloted in Costa Rica in 2007, the VERU model establishes emergency response units within veterinary universities. Students and professionals are trained in emergency management, first aid, technical rescue, and coordination with civil authorities. The concept has since spread to Mexico, India, Kenya, and other nations, with some universities integrating the VERU modules permanently into their veterinary curriculum.

PrepVet Online Training: To address the need for scalable training, the PrepVet online course was developed for animal science professionals. Endorsed by UNDRR, it consists of rapid learning modules on topics such as Animal Risk Management, Climate Change Adaptation, Veterinary Triage, IRS, and LEGS. The goal is to create a cadre of professionals skilled in designing and implementing emergency management strategies and public policies at the community and national levels.

12 Communication, Awareness, and Community Engagement

12.1 Early Warning Dissemination

A functional early warning system is an integrated process of hazard monitoring, forecasting, prediction, and communication that enables individuals and communities to take timely action to reduce disaster risks.

Official Channels and Triggers: Early warnings for specific hazards are issued by designated national agencies such as the Indian Meteorological Department (IMD) for cyclones and the Central Water Commission (CWC) for floods. These official forecasts trigger alerts that are communicated from the national to the state and district levels.

Tailored Messaging for Animal Owners: Disaster management authorities and Animal Husbandry Departments must translate technical warnings into simple, clear, and actionable messages tailored specifically for livestock keepers and pet owners. These messages should provide specific instructions on what actions to take to protect their animals.

Multi-Channel Dissemination: To ensure maximum reach, early warnings must be disseminated through multiple channels, including mass media like radio and television, mobile phone SMS alerts, social media and community-based systems such as public address systems and volunteer networks.

This must include leveraging the established network of Community Animal Health Workers (CAHWs), who serve as a direct, trusted link to farmers' doorsteps. CAHWs shall be trained to act as community-level communicators for disseminating early warnings, sharing preparedness information, and conducting rapid initial assessments of animal-related needs post-disaster.

The use of alternate communication channels like Ham radios should also be part of the contingency plan for when primary systems fail.

12.2 Public Information and Awareness Campaigns

Sustained public information campaigns are essential for building a culture of preparedness among animal owners.

Campaign Content and Key Messages: Awareness campaigns should provide practical, life-saving information on a range of preparedness topics. Key messages must include instructions on how to prepare an animal emergency evacuation kit with essential supplies like a 3-5 days stock of feed and water, medications, vaccination records, and identification documents. Campaigns must clearly communicate the location of designated animal shelters and pre-identified safe evacuation routes. Community awareness activities on zoonotic diseases and preventive measures before, during, and following disasters can

be undertaken jointly with the health department through targeted outreach campaigns and direct community engagement. These campaigns could involve community leaders, professional associations, and registered animal welfare organizations to ensure that public health messages are culturally appropriate and accessible to marginalized populations.

Promoting Preparedness Actions: Public service announcements (PSAs) should be used to educate pet owners on the importance of having carriers and training their animals to use them calmly before an emergency. For livestock owners, campaigns should promote preparedness measures such as strengthening animal shelters and securing feed storage areas. The messaging should be simple, memorable, and delivered in local languages to be effective.

To maximize outreach and impact, all public awareness campaigns related to animal disaster preparedness shall be strategically aligned with the national animal welfare events promoted by the Animal Welfare Board of India. Key events such as Animal Welfare Fortnight (January 14-30) and World Animal Day (October 4) should be utilized as focal points for intensive, nationwide dissemination of AiDRR preparedness messages through all media channels.

Awareness campaigns should utilize existing government resources. The Pashu Palak (Animal Keeper) Calendar, issued by DAHD, provides monthly management and planning guidance for better animal health and can be used as a year-round preparedness tool.

Campaigns must also inform the public about the status of community animals, providing clear instructions on how to report injured or aggressive strays, and disseminating information about zoonotic risks from contaminated water or contact with unmanaged animals.

12.3 Community Engagement and Feedback Mechanisms

A top-down approach to disaster management is insufficient; the active participation of the community is a prerequisite for building true resilience.

Participatory Planning and Risk Assessment: Communities must be actively involved in the disaster planning process from the very beginning. Methodologies like Participatory Rural Appraisal (PRA) should be used to incorporate local knowledge and enable community members to conduct their own risk assessments and develop localized preparedness plans. The participation of local people and PRIs in the assessment, design, and implementation of the State DM Plan is crucial. This approach empowers communities, fosters ownership of the plan, and ensures that interventions are appropriate to the local context.

Reporting and Communication Channels: During a disaster response, clear channels must be established for two-way communication between the affected community and the responding agencies. This includes setting up accessible reporting mechanisms, such as hotlines or community liaison officers, for animal owners to report losses, request assistance, and share information about stranded animals.

Feedback and Accountability: To ensure accountability and improve the quality of interventions, feedback mechanisms must be an integral part of the response. This involves conducting post-distribution monitoring and holding community meetings to gather feedback on the effectiveness and appropriateness of the aid provided. The insights gained from this feedback are invaluable for adapting current operations and improving future disaster response strategies.

12.4 Practical Tools for Community Engagement

To facilitate community-led risk assessment and planning, field workers should use established PRA tools. Examples include:

Animal Resources Mapping: A visual tool created with the community to map the location of animal-related resources and dependencies, assessing what is available within the village versus outside.

Pair-Wise Problem Matrix: A tool to help communities list all animal-related disaster problems and prioritize them based on their perceived impact.

Participatory Animal Welfare Needs Analysis (PAWNA): Creative tools like "If I were a Cattle" can be used to help owners articulate their animals' needs (shelter, feed, health, behavior) from the animal's perspective during different phases of a disaster.

Health Scoring: The "Traffic Light Chart" is a simple visual tool where community members use colour codes (e.g., green, yellow, red) to score the health of their animals based on key indicators (coat, eyes, gait), providing a rapid snapshot of herd health.

12.5 Role of Veterinary Professionals in Risk Communication

Effective communication during a disaster relies on credible, trusted sources of technical information. Veterinary professionals must be formally integrated into the communication framework to leverage their expertise and public trust. Their roles include:

Technical Advisory to Authorities: Designated veterinary experts from the DAHD or VERU shall serve as the primary technical advisors to the DDMA, UDMA in the Incident Response. They will provide scientifically sound guidance on all matters related to animal health, biosecurity, and zoonotic disease.

Public Health Communication: As part of a One Health communication strategy, veterinarians and fisheries experts shall collaborate with public health officials to deliver joint Public Service Announcements (PSAs). These messages can cover risks at the human-animal-environment interface, such as disease prevention, food and water safety, and the dangers of contact with stray or wild animals.

Media Liaison: A designated veterinary spokesperson shall be responsible for communicating with the media to provide accurate updates on the status of animal rescue efforts, disease surveillance, and public health risks, thereby preventing misinformation and panic.

Community Liaison: Field veterinarians and para-veterinarians are critical liaisons. They

are responsible for communicating directly with animal owners, explaining treatment plans, providing welfare advice, and gathering information on community-level needs and concerns to report back to the command structure.

13 Monitoring, Evaluation and Continuous Improvement

Disaster management is a dynamic cycle that requires constant learning and adaptation. A commitment to monitoring, evaluation, and continuous improvement is essential to enhance the effectiveness of animal-inclusive disaster management plans, ensuring that lessons from past events are used to strengthen future preparedness and response.

13.1 Key Performance Indicators (KPIs)

To objectively measure the effectiveness of disaster response and recovery interventions, a set of Key Performance Indicators (KPIs) must be established and consistently monitored. These indicators provide the data necessary for assessing the impact of operations and ensuring accountability to affected communities and stakeholders.

To ensure standardized data collection for monitoring and relief claims, all post-disaster impact assessments must use the official "Format for details of Animals Affected by Disaster". This format captures species-wise data on animals:

- Lost or Died
- Sick or Injured
- Starving or Stranded
- Evacuated or Relocated

Response Efficiency Indicators: These indicators measure the timeliness and scale of the response. They include response times for the deployment of veterinary teams, the number of animals rescued and treated, the restoration of critical water quality parameters in aquaculture facilities and the quantity of emergency supplies, feed and water distributed.

Preparedness and Implementation Indicators: State Animal Husbandry and Fisheries Departments must track systemic progress and baseline readiness prior to a disaster. To do so, they must monitor the total number of certified and deployable veterinary emergency responders (including VERU personnel and CAHWs), the percentage of districts with formally approved and operational animal-inclusive disaster management plans, and the number of functional, strategically mapped fodder banks and emergency shelters established within the jurisdiction.

Animal Welfare and Health Indicators: These metrics track the direct impact on animal well-being. Key indicators include post-disaster animal mortality and morbidity rates, the prevalence of disease as identified through surveillance, and the average Body Condition Score (BCS) of animals in emergency shelters. It is recommended to establish baseline data and regular monitoring of different 'indicator species' to assess the health of wildlife habitats at the landscape level post-disaster.

Shelter Management Indicators: The performance of emergency shelters can be measured through KPIs such as shelter occupancy rates, adherence to minimum space requirements per animal, and the rate of successful reunification of lost pets with their owners.

Effectiveness of Community Animal Management: This will be measured by the number of community animals rescued, treated, sterilized, and vaccinated; the incidence rates of post-disaster dog bites; and the rates of zoonotic diseases in the affected area.

Zoonotic & AMR Surveillance: Number of samples tested for antibiotic resistance in post-disaster settings; frequency of joint human-animal disease surveillance reports.

Role of Zoonoses Committees in Monitoring and Evaluation: State and District Level Zoonoses Committees should be actively involved in the monitoring and evaluation mechanisms of disaster response efforts. Their involvement ensures an integrated One Health approach in assessing the effectiveness of interventions. The Monitoring and Evaluation framework should include provisions for enhanced post-disaster surveillance in affected districts to promptly detect and manage any emergence or re-emergence of zoonotic diseases. To formalize this evaluation, committees should conduct structured After Action Reviews (AAR) following public health events to identify best practices, document gaps, and implement immediate and long-term corrective actions.

13.1.1 Veterinary and Animal Health KPIs

To properly evaluate the effectiveness of the technical veterinary response and ensure accountability, the following specific performance indicators must be monitored and included in all After-Action Reviews (AARs):

I. Animal Health Outcome Indicators:

A. Mortality Rate: The percentage of animals that died post-rescue or in shelters (by species).

B. Morbidity Rate: The incidence rate (%) of new disease outbreaks (e.g., respiratory infections, diarrhea) within emergency shelters and relief camps.

C. Treatment Success Rate: The percentage of animals treated for specific critical conditions (e.g., shock, severe dehydration, major wounds) that survived and were stabilized.

D. Nutritional Status: The average Body Condition Score (BCS) of animals in shelters, tracked over time to measure the effectiveness of emergency feeding.

II. Veterinary Response Efficiency Indicators:

A. Deployment Time: The average time from the official disaster declaration to the deployment and arrival of the first VERU team in the affected area.

B. Population Coverage: The estimated percentage of the affected animal population reached with veterinary services (e.g., treatment, vaccination, feed).

13.2 After-Action Reviews and Lessons Learned

A formal process for learning from every disaster event is critical for continuous improvement. To ensure continuous improvement, State AHDs and Fisheries Departments as the nodal agencies will conduct After Action Reviews (AARs) following all emergencies requiring significant activation of the arrangements. The AAR process must ensure appropriate involvement of support agencies (e.g., recognised AWOs, Veterinary Associations) and volunteers.

Outcomes and learnings from AARs must be communicated to all relevant stakeholders to inform future training and plan updates. Copies of all AAR Reports shall be submitted to the Central DAHD and Department of Fisheries for a comprehensive record keeping.

After-Action Reviews (AARs): Immediately following the conclusion of a response operation, a formal debriefing session or AAR must be conducted with all participating agencies, volunteers, and community representatives. The purpose of the AAR is to conduct a systematic review of the operation, identifying what went well, what challenges were encountered, and what could be improved.

Lessons-Learned Workshops: The findings from AARs should be analyzed in dedicated lessons-learned workshops to identify systemic issues and best practices. These workshops provide a forum for stakeholders to collectively develop concrete recommendations for enhancing policies, procedures, and capacities.

International experience shows that After-Action Reviews (AARs) often identify recurring problems, yet the lessons are seldom implemented due to political, financial, or institutional barriers. To overcome this, the AiDRR framework must include a formal mechanism to track and ensure the implementation of AAR recommendations.

- **Recommendation Tracking:** Each recommendation from an AAR must be assigned to a specific agency or official, given a clear timeline for implementation, and entered into a publicly accessible tracking system.
- **Mandatory Reporting:** The designated agency must report annually to the NDMA/ SDMA on the implementation status of each recommendation until it is fully addressed.
- **Independent Review:** The process of conducting AARs should be followed by a commitment to Reflection, Review, and Reform, which includes actively seeking to reveal unintended biases and enriching our understanding of institutional and species inequities to strengthen future policies.

Documentation and Dissemination: All findings and recommendations must be formally documented in Post-Intervention Reports (PIRs). These reports must be shared widely among all stakeholders to ensure that institutional knowledge is retained and that lessons learned are integrated into future planning and training programs. . This includes sharing national and international experiences, such as:

National Experience: The Community Fodder Bank cum Animal Shelter in Odisha, which

helped communities survive Cyclone Phailin.

International Experience: The Forecast-Based Financing for Herders in Mongolia, which helped herders keep livestock alive through extreme climatic conditions.

Note: The process of conducting After-Action Reviews (AARs) is important, but it is compelling to recognize that the lessons identified are unfortunately seldom learned. AARs are often not shared publicly due to fear of political embarrassment or reputational harm. A comparative analysis of two disasters in New Zealand found that only 7% of applicable lessons were learned from one event to the next, with common problems in training, policy, and incident management being repeated. Therefore, a robust mechanism to track and ensure the implementation of AAR recommendations is paramount for true continuous improvement.

Beyond operational AARs, a commitment to Reflection, Review, and Reform is necessary for true continuous improvement. This deeper process involves:

- Reviewing the humaneness and effectiveness of all procedures involving animals to enhance future processes and minimize negative outcomes.
- Actively seeking to reveal unintended biases regarding outcomes to animals, people, and the environment.
- Enriching our understanding of the institutional expressions of social, moral, and species inequities that are shaped by structures of power and politics, in order to strengthen future policies and strategies.

13.2.1 The Post-Intervention Report (PIR)

A Post-Intervention Report (PIR) is a document which presents a detailed overview of the entire response intervention, necessary for follow-up, monitoring, learning lessons, and future recommendations. The following information is documented in the PIR:

- **Author(s), intervention period, and GLIDE number:** The GLIDE number consists of letters for the disaster type (e.g., EQ for earthquake), the year, a sequential number, and the country code.
- **Executive summary:** A summary of the disaster, its impact, interventions, and consequences.
- **Achievements:** Describes the impact on animals and the community, including the number of animals saved and livelihoods sustained.
- **Disaster response activities:** Lists the relief activities carried out.
- **Timeline and Budget:** Compares the planned versus the implemented timeline and budget.
- **Lessons learnt:** Describes the type, frequency, severity, and lessons learned from the emergency response.
- **Future recommendations:** Based on monitoring of implementation and

expenditure against objectives.

13.3 Periodic Plan Updates and Integration of New Technologies

The National Disaster Management Plan for Animals must be treated as a living document, subject to regular review and revision.

Scheduled Plan Updates: The designated departments of the States/UTs should accordingly revise and update their respective Disaster Management Plans based on the operational and forthcoming National Disaster Management Policy, National Disaster Management Plans, and these Guidelines. This ensures that the plan remains relevant and incorporates the most current knowledge, best practices, and lessons learned from recent experiences. The principles and operational protocols of AiDRR must be systematically mainstreamed into all hazard-specific disaster management plans at both the national and state levels. This includes, but is not limited to, national and state-level plans for floods, cyclones, droughts, earthquakes, biological and other disasters.

Integration of New Technologies: The disaster management framework must evolve to incorporate new technologies that can enhance the efficiency and effectiveness of animal-inclusive response. This includes the use of Geographic Information Systems (GIS) for vulnerability mapping and risk assessment. The use of GPS tracking for monitoring animal herds and response teams, and microchipping for permanent animal identification, should be promoted. Furthermore, the adoption of digital data management platforms is crucial for real-time information sharing, resource tracking, and improved coordination among responding agencies.

13.4 Standardized Reporting Formats

To standardize data collection and reporting, response agencies should adopt formats such as:

- **Situation Report (SITREP) on Animals Affected by Disaster:** This template should be used to quickly report the number of animals lost, sick, injured, stranded, or evacuated, broken down by species (Cattle, Buffaloes, Horses, Sheep, Goats, Poultry, etc.).
- **Unified Response Strategy (URS) Matrix:** This tool is used for resource mapping and planning, allowing organizations to report their target areas and planned technical interventions (Rescue, Evacuation, Feed, Water, Vet Care, etc.) to ensure coordination and avoid duplication of effort.

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