National Plan for Conservation of Aquatic Ecosystems (NPCA)

Guidelines




सहभागिता से समृद्धि




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

February 2024

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सत्यमेव जयते

Guidelines
for
National Plan for Conservation of Aquatic Ecosystems (NPCA)

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Wetlands Division
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मंत्री
पर्यावरण, वन एवं जलवायु परिवर्तन
और
श्रम एवं रोजगार
भारत सरकार

सत्यमेव जयते

MINISTER
ENVIRONMENT, FOREST AND CLIMATE CHANGE
AND
LABOUR & EMPLOYMENT
GOVERNMENT OF INDIA

एक कदम स्वच्छता की ओर

आज़ादी का अमृत महोत्सव

भूपेन्द्र यादव
BHUPENDER YADAV
MESSAGE

Wetlands are one of the most productive ecosystems representing prominent features of landscapes that fulfil crucial functions. Wetlands possess unique attributes as part of humanity's cultural heritage and stand as important elements of our natural wealth, serving as valuable "liquid assets" for development. This emphasizes the significance of preserving and utilizing wetlands for sustainable growth and prosperity.

India has demonstrated commendable leadership by significantly enhancing the network of Ramsar Sites, designating 80 wetlands, with an impressive addition of 54 sites in the past 10 years. These sites play a crucial role in conserving global biological diversity and providing essential habitats for migratory species along the Central Asian Flyway. This underscores India's commitment to environmental preservation and underscores the nation's contribution to global conservation efforts.

Deeply rooted in India's conservation ethos and cultural heritage, wetland conservation holds significant importance. Recognizing the value of preserving Ramsar Sites and promoting their unique conservation attributes, the Government of India has introduced the 'Amrit Dharohar' initiative in 2023.

The implementation of Amrit Dharohar signifies a shift in the conservation focus of Ramsar Sites, moving beyond biodiversity-driven agendas to integration with sectoral development initiatives. This approach allows the seamless incorporation of conservation and management of Ramsar Sites into development plans, programs, and investments related to tourism, fisheries, disaster management, water resources, and more.

I am delighted to introduce the revised "Guidelines for the National Plan for Conservation of Aquatic Ecosystems." These guidelines reflect the knowledge and experience gained since the last set of guidelines released in 2019.

The revised guidelines mandate several preparatory stages before implementing a plan for wetland conservation and represent a significant advancement, urging a more pragmatic strategy in formulating conservation plans. These guidelines emphasize the importance of state governments taking ownership and stewardship for wetland management, while the Central Government assumes a facilitating role. The guidelines also delineate the specific procedures to be followed in preparing and submitting proposals and underscore the utilization of diverse schemes from both the Central and State Governments to bolster the execution of wetland projects.

These revised guidelines are designed to evolve dynamically, aligning with the insights and experiences to be gained in the future. This marks a promising commencement of a new era in wetland and aquatic ecosystem conservation.

I congratulate the team that has put together these guidelines and look forward to the implementation of these guidelines.

Date: 31 .01.2024

(Bhupender Yadav)

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आज़ादी का अमृत महोत्सव

अश्विनी कुमार चौबे
Ashwini Kumar Choubey

सत्यमेव जयते

आहारशुद्धौ सत्त्वशुद्धिः
स्वच्छ भारत
एक कदम स्वच्छता की ओर

राज्य मंत्री
पर्यावरण, वन एवं जलवायु परिवर्तन
उपभोक्ता मामले, खाद्य और सार्वजनिक वितरण
भारत सरकार
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ENVIRONMENT, FOREST AND CLIMATE CHANGE
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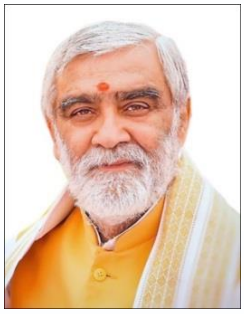

संदेश

आर्द्रभूमि दुनिया की सबसे अधिक जैव विविधतापूर्ण और पारिस्थितिक रूप से संवेदनशील पारिस्थितिक तंत्रों में से एक है। वे पौधों और जानवरों की प्रजातियों की एक विस्तृत श्रृंखला के लिए महत्वपूर्ण आवास प्रदान करते हैं, प्रवासी पक्षियों, मछली नर्सरी, बाढ़ और अन्य प्राकृतिक आपदाओं के खिलाफ, प्राकृतिक बफर के रूप में कार्य करते हैं। वे पानी की गुणवत्ता बनाए रखने और हमारी जलवायु को विनियमित करने में भी महत्वपूर्ण भूमिका निभाते हैं। इस प्रकार, आर्द्रभूमियाँ अनिवार्य रूप से 'धरा के किडनियों' के रूप में कार्य करती हैं।

भारत के पास एशिया के सबसे अधिक 80 रामसर स्थल है। जब आर्द्रभूमियों को रामसर स्थलों के रूप में नामित किया जाता है, तो इसमें उनका 'विवेकपूर्ण उपयोग' के प्रति समर्पण शामिल होता है। इसे संधारणीय विकास के ढांचे के भीतर पारिस्थितिकी तंत्र दृष्टिकोण के अनुप्रयोग के माध्यम से पूरा किया जाता है। माननीय प्रधानमंत्री जी के कुशल नेतृत्व में रामसर स्थलों के अद्वितीय संरक्षण मूल्यों को बढ़ावा देने के लक्ष्य के साथ 'अमृत धरोहर' पहल की शुरुआत की गयी। इनके सरंक्षण और प्रबंधन में आमजनों और हितधारकों की भागीदारी सुनिश्चित करने के लिए 'सहभागिता मिशन' एवं व्यापक जागरुकता फैलाने के प्रयोजन से 'वेटलैंड बचाओं अभियान' शुरु किया गया।

विभिन्न स्तरों पर संरक्षण कार्यनीतियों को और सुगम बनाने हेतु, राष्ट्रीय जलीय पारिस्थितिकी संरंक्षण योजना के मौजूदा दिशानिर्देशों को संशोधित किया गया है, जिसमें एक व्यापक प्रबंधन योजना भी शामिल है।

मैं, इन संशोधित दिशानिर्देशों के लिए मंत्रालय के आर्द्रभूमि प्रभाग और सभी संबंधित भागीदारों को बधाई देता हूं। मुझे उम्मीद है कि ये संशोधित दिशानिर्देश देश भर में आर्द्रभूमियों के और अधिक प्रभावी संरक्षण एवं विवेकपूर्ण उपयोग के मार्ग को प्रशस्त करेंगे।

(**अश्विनी कुमार चौबे**)

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& CLIMATE CHANGE

Foreword

The preservation and sustainable management of wetlands in the country has been accorded utmost priority by the Ministry of Environment, Forest and Climate Change. The National Wetlands Programme, currently known as the National Plan for Conservation of Aquatic Ecosystems, provides a comprehensive range of activities in this regard.

India has shown exemplary leadership by expanding its network of Ramsar Sites to 80 and committing to the goal of wise use of these sites, as also of other wetlands. To promote the unique conservation values of Ramsar Sites, the Amrit Dharohar initiative has been launched. It comprises four key areas namely Species and Habitat Conservation, Wetlands Livelihoods, Nature Tourism and Wetland Carbon assessments, the objective being creation of demonstrable models of sustainable wetlands management.

The NPCA guidelines released in 2019 aim to provide an integrated and scientific framework for wetlands. The guidelines have since been revised and include a graded two-stage approach for Integrated Management Plan preparation.

I congratulate the wetlands division of MoEFCC and its knowledge partners for preparing these revised guidelines and finalising them after incorporating the suggestions from stakeholders as also inputs based on practical experience. I am confident these guidelines will simplify the management planning process and empower as well as support State Governments in enhancing the effective management of their respective wetlands.

(Leena Nandan)

Place: New Delhi
Date: 30.01.2024

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AND CLIMATE CHANGE

Preface

India's approach to wetlands conservation centres around rapidly expanding conservation efforts, engaging stakeholders through Mission Sahbhagita, and integrating wetlands into development planning. These initiatives align with the 'whole-of-society' and 'whole-of-government' approach for wetlands conservation.

The Government of India's Amrit Dharohar initiative is a significant stride towards maintaining a robust network of Ramsar Sites. The implementation strategy of Amrit Dharohar, centered on the principle of conservation through community participation and the promotion of prosperity via conservation, marks a significant departure from the traditional approach that primarily focuses on biodiversity conservation. Instead, it emphasizes integration into sectoral development agendas.

Through the various regional consultations held under the Mission Sahbhagita, the challenges faced by the State/UT Wetland Authorities in the formulation of the Integrated Management Plans were discussed. Majority of the sites including those designated as Wetlands of International Importance under the Ramsar Convention, do not have Integrated Management Plan in place given the extensive data requirement and need for specific skills and capacities. The lack of an Integrated Management Plan leads to inefficient and inadequate addressal of the adverse drivers of wetland degradation. The site management, thus, is insufficient to secure the full range of wetland ecosystem services and biodiversity values. A need to revise the existing NPCA guidelines was strongly felt.

In the revised guidelines, a graded two-stage approach for Integrated Management Plan preparation has been adopted with the introduction of Framework Management Plan. This enables acting on the available information and, at the same time, builds an evidence base through assessments and stakeholder consultations for developing a comprehensive Integrated Management Plan for the site.

These revised NPCA guidelines aim at strengthening the specific guidance to the State/UT Wetland Authorities, Ramsar Site managers and knowledge partners on Framework Management Plan structure and steps to be followed for its preparation.

I present to you the revised NPCA guidelines that have been prepared in consultation with the experts and knowledge partners. I hope the guidelines will ensure achieving the objectives of the Amrit Dharohar initiative and contribute towards a holistic and participatory conservation of wetlands for wise use.

(Dr. Sujit Kumar Bajpayee)

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Contents

Abbreviations

a.m.s.l.	above mean sea level
BSI	Botanical Survey of India
CEPA	Communication, Education, Participation and Public Awareness
CO2	Carbon Dioxide
CPCB	Central Pollution Control Board
CSR	Corporate Social Responsibility
CWC	Central Water Commission
DC/ DM	District Collector/ District Magistrate
DPR	Detailed Project Report
DRDA	District Rural Development Agency
EAICP	Environmental Information, Awareness, Capacity Building and Livelihood Programme
EIA	Environment Impact Assessment
FMP	Framework Management Plan
GHGs	Greenhouse Gas
GoI	Government of India
ha	Hectare
IMP	Integrated Management Plan
LiFE	Lifestyle for Environment
MAP	Management Action Plan
MLA	Member of Legislative Assembly
MoEF&CC	Ministry of Environment, Forest and Climate Change
MP	Member of Parliament
NLCP	National Lake Conservation Plan
NPCA	National Plan for Conservation of Aquatic Ecosystems
NRCD	National River Conservation Directorate
NWCP	National Wetlands Conservation Programme
SWA	State Wetlands Authority (State Nodal Agency)
UT	Union Territory

Photo credits: Wetlands International South Asia

1. Background

India, owing to wide variations in rainfall, hydrology, physiography, geomorphology and climate, is bestowed with a rich diversity of wetlands, which play a significant role in providing ecological and economic security through their wide-ranging ecosystem services and biodiversity values. In these Guidelines Aquatic Ecosystems refer to wetlands including lakes.

Notwithstanding the high level of dependence, wetlands have been stressed by a range of anthropogenic and non-anthropogenic pressures, such as conversion for alternate usages, land use change, fragmentation of natural water regimes, pollution, siltation, species invasion, over harvesting of natural resources, unsustainable tourism and climate change.

India is committed to conservation of wetlands. The Indian Constitution, in its Article 51-A(g) stipulates that "it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures". The MoEFCC, at its inception in 1985, identified wetland conservation and sustainable management as one of its important programming themes. India's assent to the Ramsar Convention in September 1982 provided an important backdrop to this decision. The Ministry established the National Wetlands Conservation Programme (NWCP) in 1986 to provide the overarching policy framework and financial assistance to the State Governments for implementation of site management plans. In 2001, the National Lake Conservation Plan (NLCP) was introduced to address pollution issues in urban and semi-urban environments through interception, diversion and treatment of pollution load entering lakes. Priority sites under the two schemes were identified based on specific criteria laid under the two schemes.

In February 2013, considering the need for a common approach to the conservation and management of wetlands and urban and peri-urban lakes, the Union Cabinet decided to merge

Healthy catchment is essential for sustaining wetland ecosystem health

Photo credits: Harsh Ganapathi

the two schemes into a unified scheme entitled 'National Plan for Conservation of Aquatic Ecosystems' (NPCA) to enable the application of uniform policy and guidelines and promote an integrated and multi-disciplinary approach with a common regulatory framework.

The conservation and *wise use* of wetlands figure significantly in various policy commitments. The National Environment Policy of 2006 identifies wetlands as components of 'freshwater resources' and recommends integration in developmental planning, management based on prudent use strategies, promotion of ecotourism and implementation of a regulatory framework. Wetlands also figure significantly in 3 of the 12 National Biodiversity Targets, framed by the MoEFCC in line with the Convention on Biological Diversity's Strategic Plan 2011-2020. Wetlands have direct reference in Target 3 (*Strategies for reducing rate of degradation, fragmentation and loss of natural habitats are finalized and actions put in place by 2020*), Target 6 (*ecologically representative areas on land and in inland waters, as well as coastal and marine zones, especially those of particular importance for species, biodiversity and ecosystem services, are conserved effectively and equitably*), and Target 8 (*by 2020, ecosystem services, especially those related to water, human health and livelihoods and well-being are enumerated and measures to safeguard them are identified*). These targets will guide investment and resource allocation for biodiversity conservation at the national level, and therefore bear high significance for wetlands.

The National Water Policy (2012) recommends adoption of a basin approach for water resources management, and identifies conservation of river corridors, water bodies and associated ecosystems as an important action area.

Wetlands are also essential for human well-being, economic security and climate change mitigation and adaptation. The multiple benefits provided by wetlands are essential in achieving Sustainable Development Goals (Figure 1).

Ministry of Environment, Forest and Climate Change (MoEFCC), the nodal ministry of the Government of India for matters related to wetlands, has been supporting State/UT Governments for conservation and integrated management of wetlands through various schemes and initiatives. The National Plan for Conservation of Aquatic Ecosystems (NPCA), in implementation since 2013, is the Ministry's flagship scheme for wetlands and has an aim of '*mainstreaming the full range of wetland ecosystem services and biodiversity values in development plans and programmes at all levels*'.

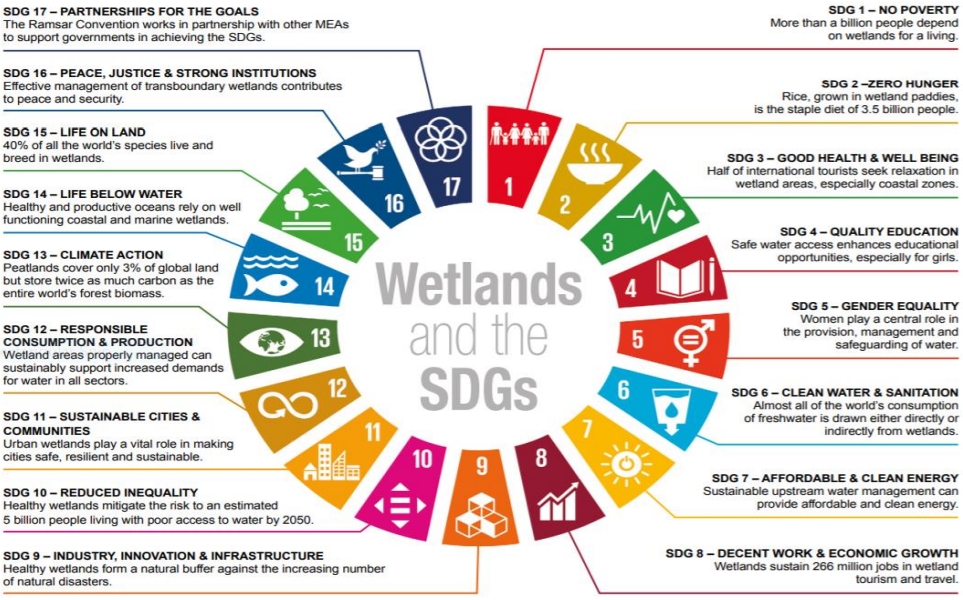

Figure 1: Wetlands and Sustainable Development Goals

Financial support to the State / UT Governments for implementing an Integrated Management Plan (IMP) is provided under NPCA. Since 2020, funding under the scheme has been exclusively on the basis of IMP, as against the previous practice of considering the Annual Plan of Operations (APO). This is to ensure that the implementation of IMP is linked with a comprehensive and long-term plan and vision.

The NPCA recommends that the management of wetlands is guided by an Integrated Management Plan. An IMP reflects a common understanding between various stakeholders on the management purpose, significant threats and constraints limiting conservation and *wise use*, opportunities and specific actions for addressing these threats, and mainstreaming wetlands within the wider developmental planning.

The integrated management plan is formulated to serve the following purposes:

- Identify the objectives of wetland management
- Identify the factors that affect or may affect the wetland
- Resolve conflicts between various stakeholders having an interest in the wetland
- Define monitoring requirements and research needs
- Help obtain financial resources for managing the wetland
- Enable communication between different wetland managers, organisations and stakeholders
- Ensure compliance with extant laws and regulation
- Demonstrate that management is effective and efficient

In May 2022, the Ministry launched *Mission Sahbhagita* as a whole of society approach for wetland conservation and management. As a part of the consultation for the Mission, four regional workshops were held in Srinagar, Goa, Kochi, and Imphal, wherein the IMP preparation process and key challenges were discussed. The State/UT Wetland Authorities identified lack of capacities, trained professionals, and the limited availability of data and finances are key barriers for IMP preparation. The Ministry also organised a virtual consultation on June 23, 2023, to reflect on the challenges and successful approaches for management plan preparation. At the concluding workshop held in Bhopal in July 2023, the representatives of state governments and knowledge partners deliberated on a graded two-stage approach for management plan preparation. A Framework Management Plan (FMP) was proposed wherein the existing knowledge and capacities are not sufficient to support the preparation of an IMP.

The Ramsar Convention is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and *wise use* of wetlands and their resources. India ratified the Convention in 1982. As a fulfilment of her commitments to the Convention and as a significant milestone on her 75th year of independence by declaring 75 wetlands to the list of Wetlands of International Importance of the Ramsar Convention, also known as the Ramsar List. The network of Indian Ramsar Sites is increasing and currently covers an area of approx. 1.33 million ha, the second largest in Asia.

Acknowledging the importance of conservation of Ramsar Sites, Government of India introduced '*Amrit Dharohar'* in budget of FY 2023-24, to promote conservation values of Ramsar Sites. *Amrit Dharohar* is to be "implemented over the next three years to encourage optimal use of wetlands, and enhance bio-diversity, carbon stock, eco-tourism opportunities and income generation for local communities."

The Government of India launched the *Amrit Dharohar* implementation strategy on June 5, 2023, with the goal of promoting the unique conservation values of Ramsar Sites. *Amrit Dharohar* operates within the broader framework of NPCA and is structured around the four components: a) Species and habitat conservation, b) Nature tourism, c) Wetland livelihoods, and d)

Wetland carbon. The implementation approach for *Amrit Dharohar* is depicted in Figure 2.

This NPCA guidelines aims at strengthening the specific guidance to the State/UT Wetland Authorities, Ramsar Site managers and knowledge partners on FMP structure and steps to be followed for its preparation. The modifications are based on the outcome of multiple consultative meetings held with the stakeholders.

The NPCA envisages halting and reversing the continued degradation and loss of wetlands in the country and ensuring their conservation and integrated management by promoting a cross sectoral planning and decision making. The programme mandates a shift from the sectoral approaches adopted till date for management of these ecosystems, and instead focuses on mainstreaming their full range of biodiversity and ecosystem services into development programmes being pursued at national and state / UT levels.

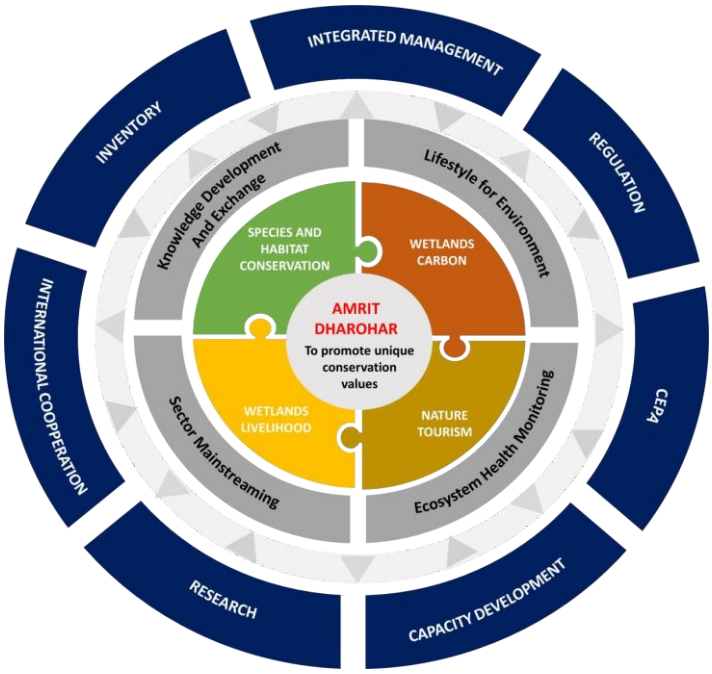

Figure 2: *Amrit Dharohar* – Implementation Approach

Photo credits: Wetlands International South Asia

2. Guidelines' Purpose and Scope

These guidelines outline an implementation framework for NPCA built on an evaluation of implementation experiences so far. The basic features that have been kept in mind while preparing these guidelines are:

- Collaborative effort between Central Government and State Governments/Union Territories, particularly ownership and stewardship of wetlands resources by the latter, is crucial to overall sustainability of restoration and management efforts.

- Effective institutional structures need to be created within the States and UTs to ensure cross sectoral decision making for wetlands. This is also mandated by the Wetlands (Conservation and Management) Rules, 2017 (Annexure IV: Wetlands (Conservation and Management) Rules, 2017).

- Mainstreaming wetlands in State level policy and decision making by building convergence with ongoing developmental sector investments is an important pathway to address anthropogenic and climatic threats to wetlands (Annexure II: Suggestive list of Central and State Government Schemes which can support implementation of NPCA projects (Annexure VII: Checklist for submission of integrated management plan).

- Management of wetlands need to be based on a diagnostic evaluation of their ecological, hydrological, socio-economic and institutional features, and factors governing these features to arrive at an action plan suited to specific context. Participation of stakeholders as well as experts are key enablers to such a process.

- Wetlands need to be integrated with water resources management to ensure that land and water use decisions within catchments and coastal zones do not adversely impact these ecosystems, rather are able to apply wetland ecosystem services values synergistically to achieve water, food and climate security solutions.

- Being inherently dynamic, the ecological character of wetlands is always changing due to natural causes (such as ecological succession) or human-induced causes (such as changes in water inflow and outflow patterns). For wetland management to be effective, it has to

    - provide the enabling conditions for ecosystem functioning (such as ensuring that water in the desired quantity, quality, and periodicity is available to the wetland) and

    - mitigate or reduce the threat of human-induced adverse change in wetlands (such as reducing pollution, proliferation of invasive species, conversion of wetland to non-wetland use)

- Integrated management of wetlands must consider the scale aspects (the interactions of the river basin and coastal zone with the wetland and wetland complex), stakeholder aspects (the views, rights and capacities of different stakeholders linked with wetlands) and sector aspects (the interactions of different conservation and development sectors with wetlands).

- Wetland management approach seeks maintenance of ecological character or wetland *wise use* with emphasis to maintain the capability of wetland to support human well-being at present and in future.

- Preparation of IMP can be a resource-intensive exercise requiring evaluation of key ecological features of the wetland and comprehensive stakeholder engagement throughout the planning process.

- An intermediate approach of FMP enables acting on the available information and, at the same time, builds an evidence base through assessments and stakeholder consultations for developing a comprehensive IMP for the site.

These guidelines supersede the NPCA Guidelines (issued in April 2019)

Photo credits: N. Zachhua

3. Managing Wetlands

3.1 Extent of Wetlands in India

The Himalayas are interspersed with a number of glacial lakes, swamps, and floodplain marshes spread across Jammu and Kashmir, Uttarakhand, Himachal Pradesh, Sikkim and Assam, several of which are the headwaters of major rivers. The alluvial plains of River Ganga and Brahmaputra have extensive riverine wetland formations as floodplains and oxbows known variously as maun, beel, chaur, jheel and pat in different parts of the country. These sustain highly productive agriculture and fisheries, besides acting as natural flood defence for communities. In arid and semi-arid zones of the peninsular and western India, several water bodies have been constructed to support domestic water and irrigation needs. The arid zone spanning Rajasthan and Gujarat has vast saline flats, monsoon fed freshwater lakes as well as salt lakes (for example, Sambhar, Pachpadra, Deedwana and Lukransar). The Peninsular Deccan region is studded with human-made lakes providing water for various human needs. Several of these also act as good habitats for water birds (e.g., Varthur, Rachenahalli and Amruthalli Lakes in Bangalore, and Kolleru in Andhra Pradesh). Several urban agglomerations such as metropolitan area of Hyderabad and Ahmedabad have strikingly high number of human-made lakes (over 400 and 600 in numbers, respectively). The narrow plains of the east and the west coasts are dotted with lagoons, backwaters, mangroves, coral reefs and salt lakes.

It is estimated that India has 15.98 million ha area under wetlands, roughly equal to 4.86% of its land area, as per the National Wetlands Atlas, 2021 published by Space Applications Centre, Ahmedabad. Of this, inland wetlands constitute 74.1% (11.85 million ha).

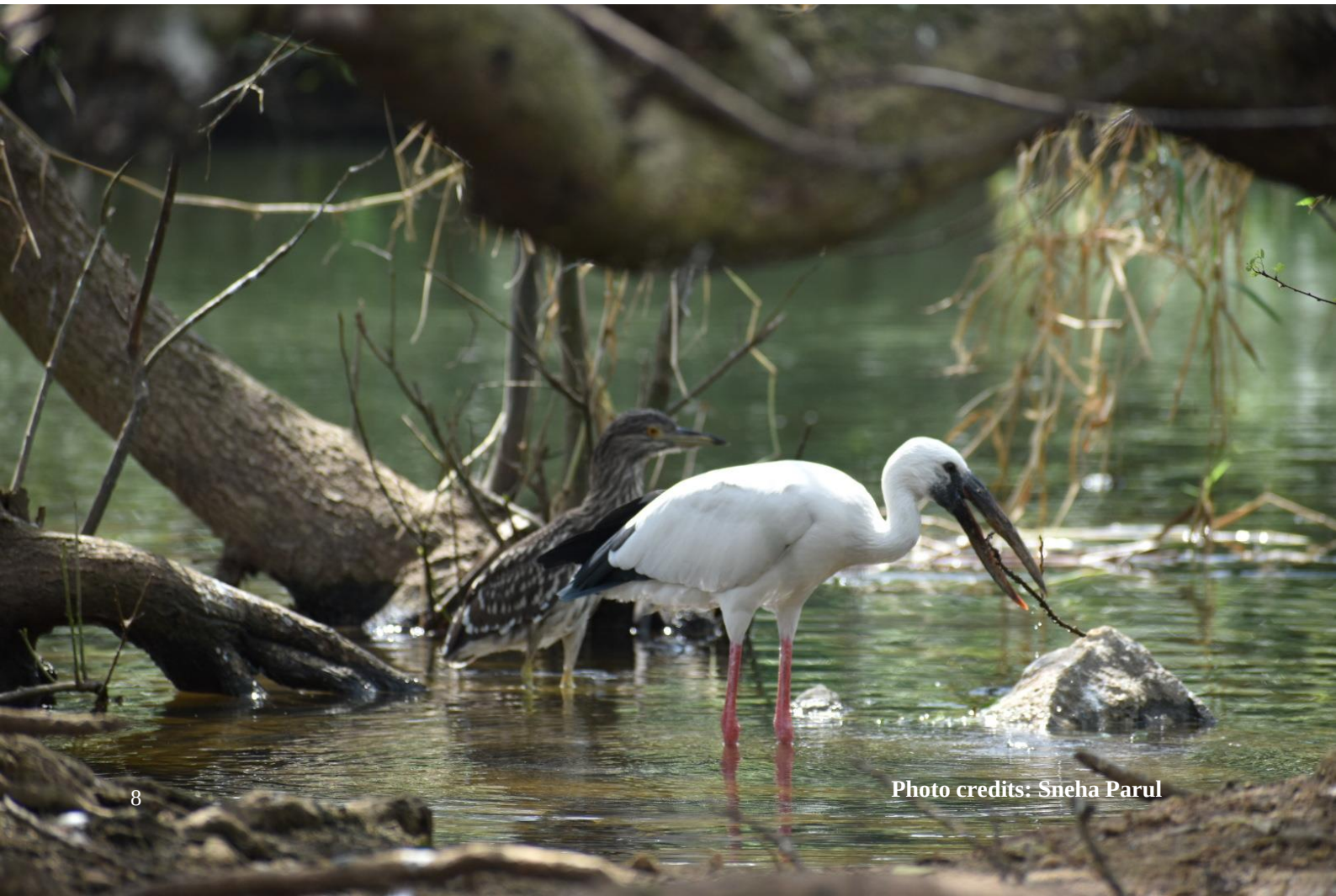

Photo credits: Sneha Parul

3.2 Importance of Wetlands: Ecosystem Services and Biodiversity

Wetlands are lifelines of the society. They provide vital support to human well-being through their wide-ranging ecosystem services and biodiversity values. As these ecosystems degrade or are adversely altered, the water cycle, and the interlinked carbon and nutrient cycles are also adversely altered, leading to water, food and climate insecurity, and loss of biodiversity. Some of the major ecosystem services provided by wetlands are:

- Water storage;
- Support livelihoods by providing food, water and fiber;
- Regulation of water regimes and stream flows;
- Ground water recharge;
- Water purification;
- Nutrient recycling;
- Buffer shorelines from erosion;
- Buffer communities against floods, droughts, cyclones and wave surges;
- Support a variety of life forms through extensive food webs;
- Habitat to diverse flora and fauna, including resident and migratory species;
- Habitat for migratory species such as waterbirds and fish;
- Provide recreational opportunities;
- Integral part of cultural identities;
- Enhance landscape aesthetics; and,
- Stabilize local climate.

The ability of a wetland to provide the aforementioned ecosystem services and support biodiversity is dependent on local conditions, geomorphic settings and linked livelihood systems.

3.3 Major Threats and Impacts

Wetlands are subject to a number of threats emanating from anthropogenic and non-anthropogenic drivers and pressures. Some of the major threats to these ecosystems are:

- Fragmentation of hydrological regime;
- Siltation;
- Pollution;
- Encroachment and land reclamation;
- Species invasion including alien species;
- Unregulated recreation and tourism;
- Over-harvesting of resources; and,
- Climate change.

Wetlands support food security by providing fish and aquatic plants

Photo credits: Dhruv Verma

Degradation of wetlands affects biodiversity and human well-being in a number of ways, as is evident from following examples:

- Changes in water regimes of Loktak Lake, a floodplain wetland complex of Manipur River, in order to withdraw water for hydropower generation has led to enhanced peripheral flooding, near complete decimation of migratory fisheries and rapid degradation of habitat of globally endangered ungulate species - Brow Antlered Deer (*Rucervus eldii*) or Sangai for which the wetland is the only known natural habitat.
- Conversion of marshes associated with Wular Lake for agriculture and afforestation has reduced the capacity of the wetland system to regulate the flow regime leading to increased floods and droughts.
- Enhancement of permanent agriculture has adversely affected the livelihoods of over 15,000 fishermen living around Kanwar Jheel in North Bihar. Agriculture in turn has been impacted by lowering of ground water levels and flooding attributed to the shrinkage in wetland area.
- Reclamation of urban lakes in Bangalore and Chennai is one of the major factors leading to increased urban flooding.
- Agriculture in the backwaters of Vembanad-Kol has often created distress to the farmers and also caused irreversible changes to the wetland habitat.

3.4 Management Gaps and Challenges

Following gaps and challenges have limited effectiveness of interventions made for conservation and management of wetlands:

3.4.1 Sectoral Approaches

The full range of wetland ecosystem services and biological diversity values are rarely integrated in sectoral developmental plans, impeding their ecological and hydrological functioning and leading to stakeholder conflicts. In most States, wetlands are not recognized as a unique land use category and these are often clubbed with 'wastelands' meant to be used for alternate developmental purposes. Sectoral approach also results due to multiple departments pursuing different objectives *(for example, water resources department aiming at enhancing water holding capacity, fisheries department at enhancing fish production, tourism department at developing tourist potential)* with disparate outcomes related to wetlands, and often working for cross-purposes.

Photo credits: Suchita Awasthi

3.4.2 Partial Approach to Implementation of Management Plans

The management plans for wetlands are mostly formulated, financed and implemented on annual cycles, and in several cases, these are not based on comprehensive landscape scale management plans. Most of the plans are therefore prescriptive in nature, and do not address the root causes of degradation (e.g., change in hydrological regimes, pollution or loss of biodiversity). Post project sustainability strategies are also not worked out. Only in a few States/UTs, allocation has been made for wetlands within their budgets, and wherever such allocations are made, it is mostly for establishment expenses and not for supporting restoration. Similarly, though NLCP was implemented on a cost-sharing basis, the operation and maintenance of urban and peri-urban lakes by the respective State Government departments is marginal.

3.4.3 Weak Cross – Sectoral Governance

Integrated management of wetlands requires cross-sectoral institutional arrangements. This was envisaged to be achieved through creation of dedicated authorities responsible for developing management plans, site monitoring and evaluation and implementation through line departments. However, only a few States have been able to designate specific authorities. Further, only in few cases, these authorities have regulatory backing. The Wetlands (Conservation and Management) Rules, 2017 has constituted State/UT Wetlands Authorities as the nodal policy making and regulating bodies for wetlands within their jurisdiction.

3.4.4 Insufficient Capacity for Integrated Management

Review of management plans submitted to the Ministry indicates lack of knowledge and experience in the formulation of management plans addressing the full range of drivers of ecosystem degradation. Equally significant is the lack of training and capacity building opportunities for the site managers.

3.4.5 Limited Research Management Interface

Management of wetlands calls for continuous research inputs to address the drivers of change. However, research has not been given due importance in case of most of the wetlands. Much of the research is focused on structural elements of wetlands (limnology, biodiversity) with very limited emphasis on functional aspects

Encroachment is a major threat to wetlands

Photo credits: Harsh Ganapathi

such as ecosystem services and community livelihoods.

3.4.6 Impact of Climate Change

The sea level rise is expected to adversely affect the coastal wetlands; some of them might disappear; several others would experience changes to their morphology, water balance, salinity levels and biodiversity. The mudflats and coral reefs could be considerably affected by sea level rise. The high altitude wetlands would suffer due to problems associated with the reduction in the thickness and area of glaciers. The variation in precipitation pattern would have its impact on wetland ecosystems and their *wise use*. Therefore, there is a need to plan for the future considering the climate change and its impact on wetlands.

The NPCA is designed to address the aforementioned gaps through focus on integrated wetland management in relation to their drainage basins, strengthening institutional arrangements and governance mechanisms, enhancing capacity and improving knowledge base and developing decision support system.

3.5 The need for integrated management

Wetlands are one of the most embedded and interlinked ecosystems with human livelihoods and well-being. A balanced management approach addressing biodiversity conservation values while providing for sustainable utilization in a way compatible with maintenance of natural properties of the ecosystem needs to be adopted for these ecosystems. This forms the core philosophy of '*wise use*', which is "*maintenance of ecological character within the context of sustainable development, and achieved through implementation of ecosystem approaches*." This approach builds on the critical linkages that exist between people and sustainable development of aquatic ecosystems; and encourages community engagement and transparency in negotiating trade-offs and determining equitable outcomes for conservation.

The NPCA therefore recommends that management of each wetland is guided by an IMP. The plan refers to a document which describes strategies and actions for achieving *wise use* of the wetland and includes objectives of site management; management actions required to achieve the objectives; factors that affect, or may affect, the various site features; monitoring requirements for detecting changes in ecological character and for measuring the effectiveness of management; and resources for management implementation.

While it is recognized that each site has its own distinctive ecological and hydrological features and thereby distinctive management needs, the following broad planning principles need to be kept in mind while formulating IMP:

- **Integrated planning:** Aquatic and terrestrial ecosystems are intimately linked by the process of the water flowing through them. Every land use decision has a consequence on water availability. Management planning for wetlands should not be restricted to a defined administrative boundary, but rather take into account wider planning and management context of the basin or coastal zone within which the site is located. Delineating a basin or a coastal zone enables demarcation of a distinct hydrological unit which is the natural integration of all hydrological processes within its boundary and therefore an ideal and rational unit for soil, water and bio-resources conservation and management.

- **Diagnostic approach:** Given the uniqueness associated with each wetland, it is important that '*one size fit all*' approach is replaced with a diagnostic approach, wherein the ecological, hydrological, socioeconomic and institutional features are comprehensively assessed and trends therein determined to be able to spell out management objectives and actions clearly.
- **Adaptable management:** Wetlands are influenced by a range of drivers and pressures that act at multiple spatial,

temporal and political scales. Their management plan, therefore, needs to be prepared to be accommodative of uncertainties and challenges. This can be achieved by using an adaptable management approach, which allows for suitable modification of management based on continuous site monitoring and assessment of new information. In several instances, the ability of future to sustain human use cannot be determined off-hand due to lack of information. In such circumstances, as is the practice in other spheres of ecosystem management, use of precautionary principle is recommended. This means that lack of full scientific uncertainty should not be used as a reason to postpone measures to prevent ecological degradation. With more data collected from the field as part of implementation of management action plan, better understanding of the system can be achieved and appropriate models developed.

- **Stakeholder participation:** The condition of any wetland is an outcome of actions by a range of stakeholders, which are linked to the ecosystem in a number of ways. Management planning therefore needs to recognize these linkages, and build a mechanism for participation of stakeholders in design, review and implementation processes.

- **Governance:** Being located at the interface of land and water, wetlands are influenced by a range of developmental activities which take place within their direct and indirect basins and coastal zones. Institutional arrangements for managing aquatic ecosystems need to be such that they are capable of integrating activities across multiple sectors (such as agriculture, water resources, forests, rural development , urban development, forests and wildlife and others), and balancing the needs of a group of diverse stakeholders while ensuring that ecological integrity of these fragile ecosystems is not adversely affected. This need can be best served by designating wetland authorities within States and UTs to serve as a distinct regulatory, planning and policy making body for conservation, restoration and sustainable management of its wetlands. This is also mandated by Wetlands (Conservation and Management) Rules, 2017.

3.6 Need for Framework Management Plan

- The FMP preserves the diagnostic approach recommended under the NPCA. However, it recognizes that the preparation of IMP can be a resource-intensive exercise requiring evaluation of key ecological features of the wetland and comprehensive stakeholder engagement throughout the planning process. An FMP, therefore, enables acting on the available information and, at the same time, builds an evidence base through assessments and stakeholder consultations for developing a comprehensive IMP for the site.

- FMP is essentially a stepping stone towards an IMP and, therefore, has to be linked with an overarching vision and management framework. FMP cannot be a standalone Annual Plan of Action which may not contribute to the maintenance of ecological character or wetland *wise use*. FMP will ensure that a stakeholder-endorsed IMP is available by the end of the FMP period. FMP pinpoints urgent actions needed to address threats on the wetlands and reinforces the implementation of the *Amrit Dharohar* implementation strategy in Ramsar Sites and other wetlands.

Photo credits: Adnan Abubakar

4. National Plan for Conservation of Aquatic Ecosystems

4.1 Scheme Coverage

Wetlands include an area of marsh, fen, peatland or water; whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters. Conservation and management of mangroves and coral reefs shall continue to be guided by the Centrally Sponsored Scheme entitled Conservation and Management of Mangroves and Coral Reefs.

4.2 Goal and Purpose

The goal of NPCA is to develop and maintain a network of healthy wetlands which contribute to human well-being through their diverse ecosystem services, as well as sustain diversity and populations of wetland-dependent species.

The purpose is to mainstream full range of wetlands biodiversity and ecosystem services within developmental plans and programmes at various levels.

4.3 Objectives

The NPCA aims to provide an integrated and scientific framework for the conservation and sustainable management of wetlands in the country. The specific objectives of the plan are:

- Developing policy guidelines for conservation and sustainable management of wetlands;
- Supporting, promoting and strengthening conservation of prioritized wetlands through integrated management;
- Facilitating the development of a national inventory, and setting up an information decision support system for the management of wetlands;
- Strengthening the capacity of wetlands managers and stakeholders for effective management of wetlands; and
- Strengthening the implementation of international commitments related to wetlands.

4.4 Strategy

The NPCA promotes the leadership and stewardship of States / UT administrations for the conservation and management of wetlands, with the MoEFCC providing facilitation in terms of setting policy directions, supporting the creation of linkages with developmental sectors, strengthening research-management interface and building capacity of site managers and other stakeholders. The vision on integration within the NPCA is guided by the following strategies:

4.4.1 Integrated Management

Investment for the conservation of wetlands shall be on the basis of integrated management plans which secure ecosystem functioning for sustained provision of ecosystem services as well as maintenance of biodiversity. These plans will serve to integrate wetlands into sectoral developmental planning within the associated catchment and coastal zones. This is in difference to present single function investment to integrated and sustainable development considering asset management planning, drainage management planning and land use planning and control.

It is necessary to determine the state and condition of the wetlands to conserve and protect them from stresses and resultant degradation. Baseline information needs to be therefore gathered, the areas and degree of degradation need to be determined, the causes need to be identified and measures that would restore the wetlands to the desired state need to be designed and implemented. Besides these interventions,

the wetland is to be managed so that it is sustained in a sound ecological health, retains biodiversity and provides the expected ecosystem services in an efficient and effective manner.

The IMP is formulated for wetlands by State/UT Wetland Authorities and wetland managers with support from various organisations including organisations with domain expertise in wetlands and its services based on the Guidelines for IMP preparation provided under the NPCA (Annexure I: Guidelines for Preparation of Integrated Management Plan). Given the uniqueness of each wetland, the Guidelines recommend a diagnostic approach wherein the ecological, hydrological, socio-economic and institutional features are comprehensively assessed, and trends therein are determined to define management objectives and actions. The Guidelines also recommend recognition of linkages the stakeholders have with wetlands and building a mechanism for the participation of stakeholders in design, review and implementation processes. An adaptable management approach, which allows for suitable modification of management based on continuous site monitoring and assessment, is emphasized in the Guidelines.

Given the extensive data requirement and need for specific skills and capacities, a majority of sites, including those designated as Wetlands of International Importance under the Ramsar Convention (Ramsar Sites), do not have IMP in place. The lack of an IMP creates a risk that the site management does not adequately address the adverse drivers of wetland degradation or is insufficient to secure the full range of wetland ecosystem services and biodiversity values.

4.4.2 Framework Management Plan

The Framework Management Plan (FMP) is an interim and supplementary step towards the preparation of the IMP. FMP will be prepared on the basis of available information, proposes implementation of non-regrettable activities, and identifies activities/studies required for the preparation of the IMP. FMP will also bring in commitment from the State/UTs for the preparation and implementation of IMP in a time-bound manner.

4.4.3 Funds Convergence

Funding for implementation of restoration plans will be largely through developmental sector programmes (from public as well as private sources) which have a bearing on wetlands functioning, and provide an opportunity for supporting integrated management. NPCA shall only provide the core funding required to trigger and support integrated management for prioritized wetlands. Local/ District/ State level agencies/ committees, responsible for conservation and management of wetlands, as applicable, in consultation with State/UT Wetlands authorities shall ensure that the identified activities under IMP or FMP of the wetland are allocated appropriate funds for completion of the IMP / FMP.

4.4.4 Cross-Sectoral Governance

State Government / UT administration will need to put in place a nodal State / UT level authority for planning, policy-making and integrated management of aquatic ecosystems in their jurisdiction. These authorities will have representation of all sectors concerned with aquatic ecosystem functioning and will also ensure the support of concerned State Governments, Urban local bodies and NGO's political, technical and administrative leadership within the respective State/UT. The Wetlands (Conservation and Management) Rules, 2017 have constituted State Wetlands Authorities to ensure cross-sectoral governance and stakeholder participation.

4.5 Financial Support from Central Government

State Governments / UT administrations can seek financial assistance under NPCA for IMP/ FMP of wetlands. The MoEFCC will bear the

cost of activities funded by it as per the prevalent policy of the Central Government to State/ UTs/ Special/North–Eastern state.

Each integrated management plan will identify a comprehensive set of activities that will need to be implemented to conserve and sustainably manage wetlands. The action plan must be examined for convergence with existing funding opportunities/ schemes/ programmes of Central/State Government Ministries, agencies, and private sector (a suggestive list is given in Annexure II: Suggestive list of Central and State Government Schemes which can support implementation of NPCA projects).

The activities which do not have any alternate source of funding, and fall within the list of core and non-core activities can be considered for financial support under NPCA (Annexure III: Core and non-core activities corresponding to management action plan components).

Overall, the core activities shall be allocated higher weightage, and be allocated 75% of the budget. The non-core activities may receive a maximum 25% of the overall allocation.

In addition, the MoEFCC will implement the following activities to enhance the management effectiveness of aquatic ecosystems in the country:

4.5.1 National inventory and decision support system for conservation and management of wetlands

The Ministry shall facilitate the development of a national inventory on wetlands to assist State Governments/Union Territory Administrations in:

(a) Identifying wetland locations and extent;
(b) Assess spatial and temporal changes in wetlands extent;
(c) Prioritize wetlands by overlaying with layers on water regimes, land use and land cover and high conservation values sites.

4.5.2 Research projects with regional / thematic relevance to support conservation and management of wetlands

The Ministry shall make available a list of priority research themes to support conservation and management of wetlands, and keeping in view MoEFCC's existing guidelines. MoEFCC shall set up a process for seeking inputs of State Governments/ UT Administrations in identifying the priority research topics and organizations to implement the research.

The funding for the wetland carbon component of *Amrit Dharohar* for scientific and research studies may be undertaken from the NPCA budgetary outlay.

4.5.3 Regional and national capacity building programmes to improve management effectiveness of wetlands

MoEFCC shall do a capacity building needs assessment based on which training workshops and other hand-holding mechanisms shall be implemented.

4.5.4 Promotional campaign for *Amrit Dharohar*

MoEFCC shall undertake a promotional campaign to meet the objective of *Amrit Dharohar* after due convergence from the line ministries. The implementation arrangement under the implementing strategy of *Amrit Dharohar* will extend the guidance on convergence for the identified activities.

MoEFCC may also extend some financial assistance from the NPCA funds to promote the associated activities of Mission LiFE and Save Wetland Campaign, with the approval of the Technical Appraisal Committee, as constituted as per these guidelines.

4.6 Institutional Arrangements

The Institutional arrangements at National and State/UT levels are provided below:

4.6.1 National Level

MoEFCC is responsible for the overall coordination of NPCA. NPCA is implemented by a designated division of the Ministry. Its specific functioning includes the following:

- Providing a national policy framework for conservation and sustainable management of wetlands;
- Providing financial assistance (on a cost-sharing basis) for the implementation of activities identified in the integrated management plans and FMP
- Providing need-based advice to the State Governments / UT Administration in leveraging funds from various central government ministries and departments;
- Providing detailed guidelines and technical know-how for wetlands restoration and management;
- Funding, supporting and conducting capacity building and training programmes;
- Financing research and capacity development to support integrated management of wetlands;
- Periodic evaluation of interventions made under the programme and suggesting mid-course corrections including evaluation of management plans;
- Facilitating the development of a national inventory, and setting up an information decision support system for the management of wetlands;
- Communication and outreach on wetlands; and
- Any other task assigned by Central Government

4.6.1.1 National Wetlands Committee

The National Wetlands Committee (NWC), constituted under the provisions of the Wetlands (Conservation and Management) Rules, 2017 shall be the nodal advisory body for NPCA. The composition and functions of NWC are laid down in the said Rules (Annexure IV: Wetlands (Conservation and Management) Rules, 2017).

4.6.1.2 Technical Appraisal Committee

A Technical Appraisal Committee (TAC) shall be constituted by MoEFCC for assessment of the FMP / IMP comprising of individual/institutional subject experts, Finance Division and other line divisions of MoEFCC, including representatives (Not below the rank of Director) from the line ministries. Following shall be essential terms of reference of the TAC, other than as defined by MoEFCC, while constituting the TAC:

a) Evaluate the FMPs for its comprehensiveness to meet the objective of IMP,
b) Assess the sufficiency of studies and assessments,
c) Adequacy of timelines and estimated cost,
d) Feasibility of actions and other associated parameters required for fulfilling the preparation of IMP.
e) Recommend the budget for FMP/IMP and timeline for its implementation.
f) Recommend an expert or agency for assessing progress on implementation of FMP or IMP, as the case may be.
g) TAC may conduct site visits and/or hold periodic review meetings to assess progress and suggest mid-course corrections.

4.6.2 State Government/UT Administration

The primary responsibility for the conservation and sustainable management of wetlands shall be with the State Governments/UT Administrations. The State/ UT Wetlands Authorities constituted

as per provisions of Wetlands (Conservation and Management) Rules, 2017 will be the nodal agency for all matters concerned with the implementation of NPCA. The composition and functions of the State/UT Wetlands Authority are laid down in the said Rules (Annexure IV: Wetlands (Conservation and Management) Rules, 2017).

4.7 Implementation Strategy

NPCA envisages creating a network of well-conserved and sustainably managed wetlands which support biodiversity and provide their full range of ecosystem services on long-term basis. The implementation strategy to achieve the above is as follows:

a) Proactive engagement of State Governments and UT Administrations to ensure that a representative set of wetlands are identified for management. Emphasis shall be placed on wetlands which are located outside the protected area network, and are highly vulnerable to various anthropogenic pressures.
b) Capacity development and handholding support would be provided by the Ministry by holding regional and national capacity building programmes for strengthening the capacity of wetlands managers and stakeholders for effective management of wetlands.
c) Preserving biodiversity, fostering ecological equilibrium and ensuring the sustainability of ecosystem. Species conservation measures may include protection and conservation of endangered or threatened wetland animal and plant species and the management and preservation of natural environment to maintain the ecological balance and biodiversity of the particular region.
d) Development of tourism infrastructure would be in strict conformity with the extant application regulations and aligned with wetland *wise use* so as to ensure that ecological character of the wetland is not compromised.
e) Integration of *wise use* ecosystem services with other livelihood capitals particularly in socio economic context of the dependent communities for sustainability of livelihood strategies as well as well-being of wetland communities.
f) Wetlands to be a major source of long-term carbon sink with healthy climate change mitigation tool.

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5. Conditions and Process for Inclusion

5.1 Inclusion of Wetlands under NPCA

The Government of India has been implementing the National Plan for Conservation of Aquatic Eco-system (NPCA) in close collaboration with the State Governments/UT Administrations wherein wetlands are identified/ prioritized as a prerequisite for being considered for financial support.

Inclusion of a wetland under the NPCA shall be an indication that:

a) The State Government and the MoEFCC recognize the significance of the wetland in terms of biodiversity values and contribution to societal well-being through wide ranging ecosystem services

b) The wetland requires proactive management to be in place to secure its biodiversity and ecosystem services values

c) The State Government, recognizing the significance of wetland, is willing to demarcate the wetland boundary, designate a dedicated nodal agency for management, develop an integrated management plan, and contribute in financial terms towards implementation of management plan

d) The MoEFCC, in recognition of the significance of wetland is willing to consider providing financial and technical support towards implementation of an integrated management plan

5.2 Inclusion Criteria

Any proposal received from State/UT Wetlands Authority shall be considered for financial support under NPCA, provided the proposal pertains to the wetlands notified/proposed to be notified (process initiated) as per provisions of Wetlands (Conservation and Management) Rules, 2017.

For all wetlands, the following criteria shall apply:

a. Wetlands located within urban, peri-urban and semi-urban areas

i. Wetland holds some water throughout the year and with peak inundation area equivalent or greater than 5 ha; and,

ii. Wetland is highly degraded and cannot be put to its traditional use due to pollution resulting from discharge of domestic and /or industrial wastewater, municipal solid waste or other non-point sources of pollution. Designated best use criteria for surface waters as recommended by CPCB is provided in Annexure V: Designated Best Use Criteria for Surface Waters as recommended by CPCB.

b. Wetlands located in high altitude areas (with elevations greater than 2,500 m a.m.s.l)

i. Wetland has an area of 5 ha and above.

c. Wetlands located below 2,500 m a.m.s.l elevation

i. Wetland or wetland cluster has a peak inundation area of 100 ha and above, and meets atleast one of the following criteria:

- Is representative, rare or unique example of natural or nearly natural wetland in a biogeographic zone;
- Supports vulnerable, endangered or critically endangered species; or threatened ecological communities (as evaluated

through IUCN Red List or any other national list);

- Supports plant and/or animal species at a critical stage in their life cycle, or provides refuge during adverse conditions;
- Supports populations of plant/ or animal species important for maintaining the biological diversity of a particular biogeographic region;
- Regularly supports 20,000 or more waterbirds;
- Regularly supports 1% of individuals in a population of one species or sub-species of waterbirds or is an important breeding site for rare/migratory bird species;
- Is an important source of food for fishes, spawning ground, nursery and /or migration path on which fish stocks/ either within the wetlands or elsewhere depend;
- Provides important hydrological functions as a source of water, regulates hydrological extremes, recharges groundwater, buffers floods and purifies water;
- Is an important source of livelihoods for communities living in and around it; and
- Is of significant cultural/ religious/ recreation value.

Wetlands smaller than the above-mentioned area thresholds may be considered by the Central Government on recommendation of the State/UT Wetland Authority.

5.3 Inclusion Process

For wetlands which fulfil the criteria set above, a Brief Document (Annexure VI: Format for preparing brief document) shall be prepared by the concerned agency for consideration of respective State Government / Union Territory Administration.

An undertaking by the State Government for State share of the cost for implementation of FMP/IMP should also be provided, to avail the financial assistance under NPCA. Such undertaking should also indicate the justification for identification of the wetland and its significance.

Photo credits: Diana Datta

Photo credits: Wetlands International South Asia

6. Steps for Submission of Proposals for Financial Support

State Governments / UT Administrations can apply for financial assistance for management of wetlands in following steps:

Step 1: Submission of proposal for inclusion of site for funding under NPCA

A proposal for inclusion of a wetland under NPCA along with Brief Document and Health Card should be forwarded through the State Govt./ Union Territory Administration/State Wetlands Authority/UT Wetlands Authority with an undertaking to provide their share of cost of implementation of FMP/IMP by State Government.

For wetlands attracting the Wetlands Rules, 2017, the Brief Document should have been prepared and submitted to State/UT Wetlands Authority for notification under 2017 Rules. A documentary evidence in this regard is also required to be submitted.

Step 2: Formulation of Integrated Management Plan

Upon approval of inclusion of site under the NPCA, the State Government/ Union Territory Administration/State Wetlands Authority/UT Wetlands Authority can opt any of the following options:

Option A

Submit an IMP in accordance with the steps and format given at Annexure I: Guidelines for Preparation of Integrated Management Plan,

- The Integrated Management Plan for the site outlining specific activities for integrated management is the most important component of NPCA. The IMP is envisaged to be a document with multiple functions, including identification of resource requirement, generating baseline information, communication with stakeholders and ensuring compliance with regulatory frameworks and policy commitments, identification of the nature of degradation of the aquatic ecosystems, sources of degradation, the measures that need to be taken to conserve and restore the wetlands, the design of these measures, the cost estimates and the expected outcome;

- Each wetland has its distinct characteristics, and thereby it is important that their site management needs are identified using a diagnostic method based on critical evaluation of the status and trends of the site's ecological, hydrological, socio-economic and institutional features;

- It is recommended that IMPs may be prepared by engaging expert agencies and in full consultation with the stakeholders, particularly dependent communities. The State Governments / UT Administration shall commission such agency at their behest;

- IMP should contain a detailed action plan, including year wise list of activities proposed to be carried out, costs, and sources of funding. All existing funding sources from Central and State Governments and private sectors under which financial support for the said activity can be accessed should be identified;

- Time frame for implementation of IMP should commensurate with the complexity of site, and be sufficient to bring about significant positive change in ecosystem features. In most cases, a time frame of 3 – 6 years is expected.

- All IMPs should categorically list specific ecological, hydrological, socioeconomic and institutional indicators, periodic measurement of which shall indicate progress made in achieving management

plan goal and objectives. Provisions for measuring and reporting on these performance indicators should be made within the IMP.

- The final IMP must be duly approved by the State Govt./ UT Administration/ State /UT Wetland Authority and submitted to the Ministry only after approval.

- A checklist for submission of IMP is provided at Annexure VII: Checklist for submission of integrated management plan.

Option B

- State /UTs Authorities can explore and submit FMP in accordance with the steps and format given at Annexure VIII: Guidelines for preparation for FMP and Annexure X: Blank Format of FMP. However, the FMP is recommended to be taken up only for those wetlands wherein

    a) The wetland is a Ramsar Site (Wetland of International Importance) or a proposed Ramsar Site or notified/proposed to be notified under the Wetlands (Conservation and Management) Rules, 2017.

    b) There is no management plan in place, and its preparation is constrained by a lack of financial assistance, capacities, and other factors.

    c) There is a commitment from the State/UT Government to prepare an IMP within the FMP Implementation period as per the NPCA guidelines.

Developing a Framework Management Plan

- FMP is a simpler document as compared with an IMP and can be developed using available information and preliminary stakeholder dialogues with key Government departments, research organisations, and civil society organisations.

- It is recommended that the State Government entrusts FMP preparation to the site manager. The manager may seek support from local EIACP centre in drafting the FMP (refer to Annexure XI: Ramsar Sites and EIACP Centres, for a list of EIACP centres mapped with Ramsar Sites). Additional support from subject matter experts, external agencies, research organisations, and NGOs may also be taken while ensuring that the quality standards as prescribed in this guidance document are met.

- FMP can be initiated by, firstly, bringing together all published information (such as journal articles, technical reports), maps, past management plans, if any, and information available in vernacular.

- The site manager must undertake a site visit to the wetland with the FMP compiling team to understand the ground conditions and recce the prominent physical and ecological features. The objective must include a dialogue with the communities and stakeholder groups to understand major issues related to the wetland.

- Based on the site visit and stakeholder inputs, a detailed wetland map must be developed. The map must indicate the wetland boundary, key physical features in the surrounding area, inlets and outlets, and major settlements. Different wetland habitats may also be indicated.

- While developing the management framework (Step 3), an ecosystem approach should guide the setting of management objectives and identification of strategies. To the extent possible, the strategy should be aligned with *Amrit Dharohar* and *Mission Sahbhagita*.

- The draft FMP must be shared with key stakeholders (such as concerned government departments, community groups, and Community Based Organisations (CBOs)),

and their comments incorporated in the revision.

- Time frame for implementation of FMP/preparation of IMP should commensurate with the complexity of site, and be sufficient to prepare an IMP as per the format given at Annexure I: Guidelines for Preparation of Integrated Management Plan. In most cases, a time frame of 6 months – 1 year is expected.

- The final FMP must be duly approved by the State Govt./ UT Administration/ State/ UT Wetland Authority and submitted to the Ministry only after approval.

- A checklist for submission of FMP is provided at Annexure XII: Checklist for submission of FMP.

The aim of FMP is to:

a) Communicate the vision and management framework of the wetland to stakeholders

b) Bringing together existing information to describe the site, the focus of management and the management framework needed for conservation and *wise use*

c) Setting the stage for preparation of a detailed IMP as per the extant guidelines of the MoEFCC

d) Identifying the immediate actions needed to preserve wetland values and address risks of adverse change in wetlands (on a clear basis that intervention cannot be delayed for want of detailed assessments), and

e) Providing an opportunity to expedite the implementation of *Amrit Dharohar* components in Ramsar Sites.

The preparation of FMP shall have the following four steps (Figure 3):

Step 1 Wetland Description
Step 2 Management Purpose
Step 3 Management Framework
Step 4 Action Plan

- The details on the requirement of each step have been provided at Annexure VIII: Guidelines for preparation for FMP.

- State Governments/ UT administrations can seek financial assistance under NPCA for the implementation of Framework Management Plan for a period as recommended by the TAC.

- The MoEFCC will bear the cost of activities funded by it as per the provisions of the NPCA scheme of the Central Government to State/ UTs/ Special/ North–Eastern and Himalayan states.
    - Union Territories – 100% Central share
    - North-East and Himalayan States – 90% Central share and 10% State share
    - Rest of India – 60% Central share and 40% State share

Step 3: IMP/FMP finalization and execution of agreements

- The FMP submitted by the States/UTs after scrutiny for its essential requirements shall be placed before the Technical Appraisal Committee.

- IMP submitted by States/UTs shall after scrutiny by the MoEFCC, shall technically cum financially appraised by TAC.

- TAC shall ensure that the work plan/activities identified under FMP are sufficient to have comprehensive IMP along with the proposed timeline with optimized fund estimates. They shall also assess whether convergence of resources from the ongoing/ proposed schemes/ projects of the Central/State government has been taken into account.

- MoEFCC shall prepare appraisal template for IMP and FMP in consultation with Knowledge Partners and the same with due approval from TAC shall be used.

- A tripartite MoU between the Government of India, State Government/UT Administration and the agency identified for implementation of IMP/FMP, will be signed inter-alia, for sharing of costs, timely implementation of IMPs, and post-project sustainability. This MoU will be the basis of providing grants to State Governments/ UT Administrations (Annexure XIII: Indicative Format for Tripartite Memorandum of Understanding for implementation of Integrated Management Plans/ Framework Management Plans).

- The State/UT Government department receiving FMP funds shall submit 6 monthly implementation progress reports to the Wetlands Division in the prescribed format (Annexure XIV: Template for Implementation Progress Reporting of IMP/FMP (subjected to decision of TAC)). Report on implementation of physical activities shall also include photographs and GPS coordinates of implementation sites.

- All management, operation and maintenance expenses shall be part of IMP and costs thereon shall be borne entirely by the State Government / UT Administration for which additional resources will have to be demonstrably raised and committed to operations and maintenance. If there is a cost overrun in a project because of delay, inflation or any other reasons, the same shall be borne by the State/UT Government. The contribution of the Government of India shall be limited only to the amount initially agreed to in the Administrative Approval and Expenditure Sanction Order.

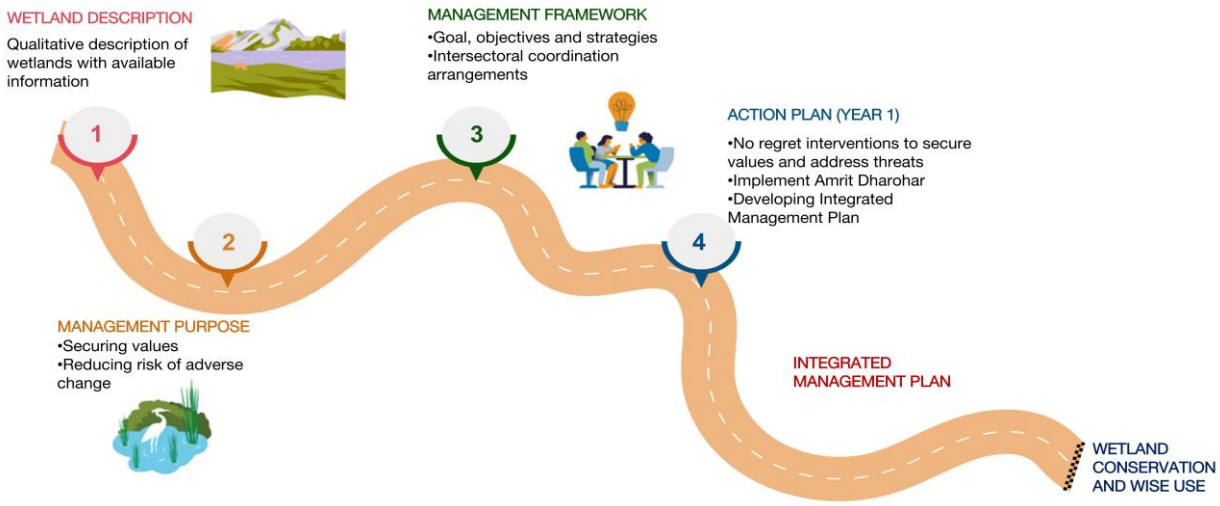

Figure 3: ***Steps for Framework Management Plan***

Photo credits: Mitra T.R.

Annexure I: Guidelines for Preparation of Integrated Management Plan

Wetlands provide wide-ranging ecosystem services which support human well-being in a number of ways. Numerous plant and animal species depend on wetlands during different parts of their life-cycle. In order to ensure that wetlands continue to provide their ecosystem services and support biodiversity, it is essential that a well-defined strategy and actions are identified for their conservation and *wise use*. An integrated management plan reflects a common understanding between various stakeholders on the management purpose, significant threats and constraints limiting conservation and *wise use*, opportunities and specific actions for addressing these threats, and mainstreaming wetlands within the wider developmental planning.

The integrated management plan is formulated to serve the following purposes:

- Identify the objectives of wetland management
- Identify the factors that affect or may affect the wetland
- Resolve conflicts between various stakeholders having an interest in the wetland
- Define monitoring requirements and research needs
- Help obtain financial resources for managing the wetland
- Enable communication between different wetland managers, organizations and stakeholders
- Ensure compliance with extant laws and regulation
- Demonstrate that management is effective and efficient

Systematic diagnosis of various wetlands features and factors influencing these features is essential to arrive at management objectives and actions. The following eight steps are recommended for developing an integrated management plan:

Step 1: Preamble

The process for management planning must begin with an exercise of setting up an overarching preamble describing the rationale for application of human, technical and financial resources for the wetland. This is a concise policy statement that expresses the commitment of the State Government/UT Administration for integrated management. The preamble can be developed on the basis of:

- Importance of the wetland for the state / UT
- Ways in which the wetlands conservation and wise use will contribute to conservation and developmental goals
- Alignment with sectoral policies, directives and planning frameworks

Step 2: Description of wetland features

This step entails collation and synthesis of existing information on various site features so as to provide a basis for the identification of management objectives. A generic listing of management information needs and data requirements are presented in Table 1.

Table 1: Information Required for Description of Wetlands Features

Wetland feature	Management information needs	Data requirement
Wetland type and extent	Location Wetland type Wetland area Significant inter-annual changes in the wetland Major changes in the wetland extent in the last 20 – 30 years	Geographical coordinates Land use and land cover data for the wetland (at least for two seasons, pre and post-monsoon) Historical map of the wetland (can be developed from the Survey of India toposheets)
Catchment/Drainage Basin	• Direct and indirect catchment of the wetland • Geological and geomorphological characteristics that have led to the formation of the wetland • Present land use and land cover of the catchment and their implication for wetland • Major developmental activities in the catchment and their impacts on the wetland	• Geology and geomorphology • Topography • Drainage pattern • Soil types • Climate setting • Land use and land cover change
Hydrological regimes	• Major sources of water inflow and outflow from the wetland • Major sources of sediments into the wetland • Inundation regime • Trends in water holding capacity and factors for the decline • Water quality and pollution status • Water use pattern within the wetland catchment and implication for wetland	• Water inflow, outflow and balance • Inundation pattern • Sedimentation • Groundwater • Water quality • Water use within the basin
Biodiversity	• Species richness • Role of the wetland in the life-cycle of migratory species • Invasive species and major contributing factors • Major changes in species richness and habitat and factors thereof	• Species richness and diversity • Biological significance of habitats • Risk of species invasion
Ecosystem Services	• Key ecological and hydrological characteristics required for the sustained provision of ecosystem services • Ecosystem services trade-offs	• Provisioning services (direct wetland products, eg: food, fibre, water) • Regulating services (the ability of an ecosystem to regulate hydrological regimes, influence micro-climate, reduce disaster risk, groundwater recharge) • Cultural services (recreational values, cultural and religious norms and beliefs related to wetlands) • Supporting services (Primary production and other ecosystem functions which enable wetlands to deliver all above ecosystem services)

Wetland feature	Management information needs	Data requirement
Socioeconomics and livelihoods	• Extent of dependence on wetlands for livelihoods • Status of community infrastructure (such as water and sanitation) and implication for wetlands • Livelihood vulnerability and relationship with changes in wetland resources • Resource use conflicts • Major shifts in livelihoods and implications for wetlands	• Demographic features of communities living in and around • The contribution of wetland to income and employment • Community resource use and management practices

Attention should be paid to the robustness of data and associated uncertainties thereof. It is recommended that the data on-site features and linked metadata are, to the extent possible, maintained in a spatial format to enable updation at a later stage as more information becomes available through monitoring programmes. The step should also include identification of data gaps.

Step 3: Evaluation of wetland features

This step entails an evaluation of information on status and trends on wetlands features (conducted in the previous step) to identify:

a) Key wetland features that should be a priority for management planning

b) Natural variability within these features, including describing thresholds, if any

c) Threats that limit (or potentially limit) maintenance of wetlands features in the desirable state

Evaluation of wetland features can be done on the basis of criteria such as:

- Naturalness
- Rarity
- Criticality for ecosystem functioning
- Socioeconomic importance
- Requirement under the extant regulatory regime

The evaluation process will lead to narrowing down of the list of wetland features, for which threats may be identified. The management plan is a response to these threats. Through this process, it is ensured that the plan does not merely focus on symptoms (for example, poor water quality) but on the root causes (in this case, ineffective sewage management in wetland catchments).

Step 4: Defining an institutional arrangement for wetland management

The purpose of this step is to evaluate whether existing institutional arrangements are sufficient and effective in addressing the threats to wetlands. Based on the gaps identified, an institutional arrangement for implementation of the management plan is developed.

This step includes:

a) Enlisting of government departments having programmes which impact (or have the potential to impact) wetlands features or threats on these features

b) An analysis of laws and regulations related to wetland, access and use of wetland resources, biodiversity or any dimension

c) Ownership, rights and privileges pertaining to wetlands

d) Analysis of the role of CSOs and communities in wetlands management, with particular reference to their views, rights and capacities

e) Gaps and challenges

Based on the analysis, an institutional arrangement for wetlands management should be developed, clearly stating:

a) The nodal agency responsible for managing wetlands

b) Role of different government departments and mechanisms for inter-departmental coordination

c) Role of CSOs and communities

Step 5: Setting management objective

This step involves the identification of site management objectives that need to be met so as to ensure that site features are maintained or improved. The management objectives must be capable of addressing the threats identified in the previous step and ensuring the maintenance of wetland in a desired healthy state. While defining objectives, the following must be considered:

a) Measurable – the objectives must be measurable so as to enable reporting on progress towards meeting them (for example, reducing silt load from the wetland catchment by xx %)

   Achievable – the objectives must be achievable at least in the medium or long term. An objective that cannot be achieved can lead to an overall loss of sense of direction and misallocation of resources (for example, completely preventing nutrient enrichment in a wetland located in the intensive agricultural landscape is an unachievable objective, a much better proposition would be to reduce the current rate by xx%).

   Indicative of purpose and not the process – the objectives should not be prescriptively stating the way the objective should be achieved. It should ideally reflect the purpose of management (for example – afforestation in xxx ha is not an objective but a way to reduce siltation. Focusing just on afforestation then limits the use of other options for reducing siltation in a wetland). The processes are generally used to define the action plan for the management objective.

Step 6: Developing a monitoring and evaluation plan

This section aims at outlining a monitoring and evaluation plan to enable assessment of overall management effectiveness and identify needs for mid-term correction.

For each of management objectives, a set of performance indicators should be identified. The performance indicators provide evidence on the condition of one or a set of features (Table 2). When the full range of performance indicators for all the management objectives have been identified, it is useful to combine them into a monitoring plan to enable systematic capture of the monitoring outcomes and use in informing the planning process. Some examples are provided below:

Table 2: Performance Indicators

Wetland feature	Management objective	Performance Indicator	Means of measurement
Area	Maintain wetland area	Wetland area which has not been altered for non-wetland usages	Area estimated from analysis of remote sensing images and ground truthing
Catchments	Reduction in silt load from catchment	Silt load	Monitoring pilot watersheds
Hydrological regimes	Reduce pollution	Biological Oxygen Demand, Chemical Oxygen Demand or any other water quality parameter assessed against a threshold	Water quality monitoring
	Enhance hydrological connectivity within wetlands complex	Area of wetland complex inundated during high floods period	Analysis of remote sensing data, and hydrological surveys
Biodiversity	Maintain and enhance habitat of waterbirds	Area of wetland used by waterbirds	Physical survey
	Reduce area under invasive macrophyte	Area under invasive macrophyte	Analysis of remote sensing images and ground truthing
	Maintain fish species richness	Fish species richness	Sampling
Socioeconomics	Reduce use of harmful fishing practices	Number of destructive fishing gear used in the wetland	Survey
	Reduce direct dependence of communities on capture fisheries	Reduction in % of income derived from wetland	Socioeconomic surveys

For each performance indicator, a baseline value at the beginning of management plan implementation may be specified. These values should be tracked over the course of management plan implementation to assess whether management objectives are being met.

Besides setting up performance indicators for the management plan, it is also essential to set up a monitoring system for the wetland in order to be able to assess changes in ecosystem condition over a period of time. A generic listing of monitoring parameter, method and frequency is presented in the Table below. Parameters marked with a single asterisk (*) sign are relevant for all wetlands and must form a part of the monitoring system. In addition to these, parameters marked with a double asterisk (**) are relevant for wetlands located in urban and peri-urban areas. Other parameters may be included based on the assessment of relevance and wetland contexts.

Table 3: Parameters for wetlands monitoring

Wetland feature	Monitoring parameter	Monitoring method	Frequency
Wetland extent	• Wetland area*	Remote sensing and ground truthing	Once in a year
	• Land use and land cover within the wetland area	Remote sensing and ground truthing	Once in a year
	• Connectivity with other adjoining wetlands, river / streams, coastal zone	Remote sensing and ground truthing	Once in a year
Wetland Catchment	• Climate	Data from the nearest weather station	Atleast monthly
	• Land use and Land Cover*	Remote sensing and ground truthing	Once in 3 years
	• Total sediment yield	Stream gauging station	Monthly
	• Total nutrient yield	Stream gauging station	Monthly
Hydrological regimes	• Water inflow and outflow*	Stream gauging station	Monthly
	• Waterholding capacity	Bathymetric survey	Once in 5 years
	• Peak inundation	Remote sensing and ground truthing	Once in 2 years
	• Dissolved Oxygen, Biological Oxygen Demand *	Data from water quality sampling stations	Atleast monthly
	• Chemical Oxygen Demand **	Data from water quality sampling stations	Atleast monthly
	• Number of point sources discharging untreated sewage into the wetland **	Surveys	Once a year
Biodiversity and Habitat	• Population of majorwetland dependent species groups (such as waterbirds, mammals etc.)*	Mid-winter counts	Once a year
	• Habitat use by key species	Physical surveys	Once a year
	• Number of migratory species using the wetland as a habitat	Physical surveys	Once a year
	• Area under invasive macrophyte**	Physical surveys	Once a year
Ecosystem Services	• Annual Fish yield	Sampling	Monthly samples collated into an annual estimate
	• Number of tourists	Surveys	Monthly samples collated into an annual estimate
	• Volume of surface water abstracted from wetland	Hydrographic surveys	Monthly samples collated into an annual estimate
	• Volume of groundwater recharged	Hydrographic surveys	Once a year

Wetland feature	Monitoring parameter	Monitoring method	Frequency
	• Proportion of floodwaters stored in the wetland	Hydrographic surveys	Once a year
	• Use of wetland for research and education	Surveys	Annual estimate
Livelihoods	• Population living around the wetland*	Surveys	Once every three years
	• Population depending on wetlands for livelihoods	Surveys	Once every three years
	• Number of households around the wetland using safe sanitation practices	Surveys	Once every three years
	• Participation of communities in wetlands management	Surveys	Once every three years

Step 7 – Developing an action plan

The last stage of the management planning process includes defining the action plan, or specific interventions that address the identified management objectives. The action plan should be developed in two steps. The first step should be a comprehensive listing of activities which are required to be implemented. In the second stage, the activities should be filtered with reference to core and non-core activities prescribed under NPCA, and detailed further.

7.1 Preparing a comprehensive list of activities

A generic listing of activities that may be required for integrated management of wetlands is presented in Table 3. Each activity should have a short description indicating why the activity is required, where is the activity to be implemented, and what is the implementation priority. Following must be kept in mind:

(a) Ecosystem-based interventions should be promoted as far as possible

(b) Engineering interventions in wetlands should be taken up in a limited manner, with impact assessments conducted for all major works

(c) Operations and maintenance of all structural works should be included in project design
Participation of local communities should be included to the extent possible

Table 4: Generic listing of activities for management of wetlands

Management Plan component	**Activities**	**Key considerations**
Boundary delineation and demarcation	Boundary mapping and delineation	Site boundaries should be established with reference to inundation regimes, soil conditions and vegetation types. Landscape connectivity should also be taken into account when aquatic ecosystems exist in patches. All activities should be completed within the first year.
	Removal of encroachments	Boundaries should be notified and legally protected wherever possible. All activities should be completed within the first year.
	Shoreline management	Mostly required for wetlands in urban and peri-urban setting. For stabilizing bunds of wetlands, naturalization of slopes using vegetative measures should be preferred. Development of promenade for urban lakes can be included based on an evaluation of natural drainage and shoreline ecosystem niches.
Catchment conservation	Afforestation and aided regeneration	Catchment conservation plans should be developed at watershed scales and based on Joint Forest Management approaches. Only native species should be used for forestry operations. Pilot watershed should be periodically monitored to assess changes in soil moisture regimes. Livelihood interventions for catchment communities aimed at reducing dependence on wood as an energy source should be included as appropriate.
	Small scale engineering measures (gully plugging, check dams, gabion structures etc.)	Community participation in design, implementation and post-project maintenance of structures should be ensured.
Water management	Selective dredging and desilting to improve hydrological connectivity	Dredging to be used only selectively, and be based on assessments of bathymetric profile and species interactions. For inflowing channels, dredging ca be used to improve water inflow.
	Interception, diversion and treatment of point sources of pollution	Mostly recommended for wetlands in the urban and peri-urban setting. Provision of comprehensive sanitation and safe drinking water coverage to communities living around the aquatic ecosystem should be ensured. Engineering (STPs) as well as biological options (constructed wetlands) should be evaluated for application. Planning for Operation and Maintenance expenses should be included for all engineering structures.
	Construction and operation of hydraulic structures for maintenance of water regimes and flood control	For each significant structure, detailed environmental impact assessments should be carried out prior to construction.
	Balancing water allocation for	Environmental flows for wetlands, hydrological regimes of

Management Plan component	Activities	Key considerations
	human and ecological purposes	which are affected by hydraulic structures, should be assessed and implemented in consultation in water managers
Biodiversity conservation	Habitat evaluation and improvement	Until specifically desired, plantation of terrestrial plant species in wetlands should be avoided.
	Improvement and maintenance of migratory routes	Community groups should be involved in habitat monitoring and maintenance of migratory routes
	Maintenance of breeding and spawning grounds for key species	Community groups should be involved in the maintenance of breeding and spawning grounds
	Management of invasive species	A mix of mechanical and biological methods for controlling species invasion should be used. For plant invasives, economic utilization along with physical removal should be included.
Sustainable resource development and livelihood improvement	Microenterprise development for reducing dependence on wetlands resources for livelihoods	Identification of micro-enterprise development options should be based on an assessment of community livelihoods, capacities, resources and market linkages.
	Sustainable fisheries development	Only capture based fisheries techniques should be promoted in natural wetlands Options for improving culture fisheries in areas around wetlands may be included to reduce dependence on capture fisheries
	Sustainable agriculture development	Organic farming practices in immediate catchments should be included to minimize nutrient enrichment in wetland.
Institutional development	Setting regulatory regimes	Site regulation should be harmonized with national and State level regulations. Local customary self-regulation which supports maintenance of conservation values should be promoted
	Development of monitoring and evaluation system	Comprehensive monitoring and evaluation mechanism for hydrological, ecological, socio-economic and institutional features should be made a part of the management system Involvement of stakeholders in monitoring should be encouraged.
	Communication and Outreach	Increasing awareness on values and functions of wetland should be made an integral part of the management plan
	Research	For each site, key research areas to support management needs should be identified and included in the management plan

7.2 Preparing an action plan for NPCA support

From the generic list compiled under the previous steps, activities which fall within the list of core and non-core activities covered under the NPCA should be filtered out and elaborated. Following details should be included:

- Why is the activity important?
- How will the activity be implemented? (include intermediate steps, technical specifications and relevant drawings, as may be the case)
- Where will the activity be implemented?
- Who will implement the activity?
- What are the quantitative targets to be met?

Step 8: Developing budget and financing plan

A complete costing of the Integrated Management Plan item wise should be done for the entire tenure of the plan using the existing norms of the State and central government, as may be the case. Year wise requirement of funds for various items of work/ activities, bar and PERT charts for the works/activities should be prepared. For each of the activity, an analysis of complementarity with ongoing development or conservation sector schemes should be done to assess the extent of funding that can be generated through convergence with these schemes. Opportunities for private sector participation should also be identified. Summary of Cost Estimates and year-wise breakup of the requirement of funds may be presented in the formats given below:

Table 5: Summary of budget

S. No	**Management Plan component**	**Budget**

Once the total budget has been prepared, a mapping of funds available from various government schemes, international and national donors and private sector may be presented in the following format.

Table 6: Analysis of convergence funding

Activity	**Total Budget**	**Funds from Central Government Scheme (Scheme Name)**	**Funds from State Government (Scheme Name)**	**Funds from other donors (Project and donor name)**	**Funds from private sector (Name of the agency)**	**Funds available from convergence sources**	**Funds required to be raised**
	(a)	(b)	(c)	(d)	(e)	(f) = (b) + (c) + (d) + (e)	(g) = (a) -(f)

The management plan proposed to be covered under NPCA should be detailed in the Table 7. For each costs item, the relevant basis or schedule of rates may be referenced. Funds requirement should be spread across the entire management plan implementation duration. It may be noted that core funds may be allocated not less than 75% of the budget, and non-core upto 25% of the budget.

Table 7: Year-wise breakup of requirement of funds required from NPCA

S.No	Activity	Funds Required in Yr I	Funds Required in Yr II	Funds Required in Yr III	Funds Required in Yr IV	Funds Required in Yr V	Total

Format for compiling Integrated Management Plan

The management plan should have a cover sheet with the following information:

- Wetland Name
- Wetland Area (in ha)
- Location: (District(s), State / UT)
- Area of the direct catchment (in ha)
- Name of the nodal agency for management plan implementation
- Management plan period
- Date on which approval of State / UT Wetland Authority was obtained
- Total budget
- Total funds available from convergence sources
- Funds requested from the MoEFCC

Table 8: The management plan may be compiled in the following eight chapters:

Chapter heading	Sub-headings	Explanation	Reference to Management Planning Steps
1. Introduction	1.1 Rationale for management planning	Describe the importance of wetland, ways in which wetlands conservation and *wise use* will contribute to state conservation and development goals and alignment with state and central government policies, directives and planning frameworks	Step 1
	1.2 Terms of reference	Enlist the overall terms of reference for the management plan	Step 1
	1.3 Approach and Method	Provide an overview of approach (ways in which the recommended steps have been used) Describe the data sources and research carried out for	Step 1

Chapter heading	Sub-headings	Explanation	Reference to Management Planning Steps
		management planning if any	
2. Description of wetlands features	2.1 Description of wetland features • Location and extent • Wetland catchments • Hydrological regimes • Biodiversity • Ecosystem Services • Socioeconomics and livelihoods	Describe wetland features. As far as possible, present the data in maps.	Step 2
3. Evaluation of wetlands features	3.1 Evaluation • Priority wetland features that need to be maintained and thresholds thereof • Threats	From the wetlands features described in the previous section, enlist the priority wetlands features. Describe the threats that adversely affect the priory wetland features.	Step 3
4. Institutional arrangements	4.1 Review of existing arrangements • Key organizations and programmes • Rules and regulations • Role of civil society and community-based organizations	Provide an overview of the current institutional arrangements in the context of wetlands management	Step 4
	4.2 Gaps	Discuss why the current institutional arrangements are insufficient in ensuring wetlands conservation and *wise use*.	Step 4
	4.3 Proposed arrangements for wetland management	Propose institutional arrangement for wetland management, which specific focus on a) nodal agency, b) role of various departments and agencies and coordination mechanism, and c) the role of civil society and communities. Develop an organogram for management plan implementation.	Step 4

Chapter heading	Sub-headings	Explanation	Reference to Management Planning Steps
5. Setting Management Objectives	5.1 Goal and purpose	Provide a statement of the overall goal that the management plan seeks to achieve	Step 5
	5.2 Benefits (ecological as well as societal)	Summarize the ecological and economic benefits that are expected from management plan implementation	
	5.3 Management objectives	Enlist the specific objectives	Step 5
	5.4 Strategies	Describe strategy(ies) for achieving each of the management objectives	Step 5
6. Monitoring and evaluation plan	6.1 Monitoring strategy	Present an overview of monitoring the wetland, and management plan implementation	Step 6
	6.2 Monitoring parameters, frequency and responsibility	Describe the monitoring parameters, the frequency of monitoring and the agency that will be responsible for monitoring	Step 6
	6.3 Institutional design	Describe how coordination between different monitoring agencies will be achieved.	Step 6
	6.4 Infrastructure and human resources design	Discuss the infrastructure and human resource requirement for implementing the management plan. As far as possible, including local universities, research organizations and NGOs in wetlands monitoring	Step 6
	6.5 Reporting	Discuss the frequency in which reporting shall be done and the responsible agency.	Step 6
	6.6 Review and adaptation	Discuss how the monitoring outcomes will be used to adapt management	Step 6
7. Developing an Action Plan	7.1 Component wise activities linked with management objectives	Generic listing of activities indicating: • What will be done? • Where will the activity be done?	Step 7.1

Chapter heading	Sub-headings	Explanation	Reference to Management Planning Steps
		• What is the priority for the activity?	
	7.2 Components for consideration for support under NPCA	For all activities eligible for support under NPCA indicate: • Why is the activity important? • How will the activity be implemented? (include intermediate steps, technical specifications and relevant drawings, as may be the case) • Where will the activity be implemented? • Who will implement the activity? • What are the quantitative targets to be met?	Step 7.2
8. Budget and activity phasing	8.1 Activity linked budget	Present a summary budget in line with Table 5 Provide details of funding available from convergence sources in line with Table 6 Provide detailed budget for NPCA in line with Table 7	Step 8
	8 2 Time planning	Present a monthly Gantt Chart for management plan implementation	Step 8

The proposal for which FMP has been approved under NPCA or otherwise, following information should be submitted separately:

a) The activities which are covered under FMP along with status of its implementation and expenditure incurred
b) An undertaking that no duplication or overlap of activities between the FMP and IMP
c) List of Schemes/Programmes under Central/State Government has been examined for convergence while preparing the IMP

Annexure II: Suggestive list of Central and State Government Schemes which can support implementation of NPCA projects

Name of Scheme	Areas for convergence	Implementing Ministry
Atal mission for rejuvenation and urban transformation (AMRUT)	Enhancing amenity value of cities by creating and upgrading green spaces, parks and recreation centres, sewage facilities	Ministry of Urban Development
Heritage City Development and Augmentation Yojana (HRIDAY)	Holistic development of services such as water supply, sanitation, roads, etc.	
Smart Cities Mission	Area-based development for improvement, renewal and greenfield development.	
Different Schemes	Green	Ministry of Panchayati Raj
National Afforestation Programme	Catchment conservation	Ministry of Environment, Forest and Climate Change
Green India Mission	Catchment conservation	
National Action Programme to Combat Desertification	Assessment and mapping of land degradation, Drought Preparedness and Mitigation in the Context of Climate Change	
National Afforestation and Eco-Development Board (NAEB)	Ecological restoration and eco-development activities	
National Coastal Management Programme	Conserve and protect coastal stretches and to promote Sustainable development	
National Mission on Himalayan Studies	Conservation of Himalayan Ecosystem and sustainable development	
Repair, Renovation and Restoration of Water Bodies	Restoration of aquatic ecosystems used as sources of drinking water	Ministry of Water Resources, River Development & Ganga Rejuvenation
Natural Resources Management, Rainfed Farming System, Horticulture, Integrated Nutrient Management	Sustainable agriculture	Ministry of Agriculture and Farmers Welfare & Department of Animal Husbandry, Dairying and Fisheries (DADF)
National Scheme on "Welfare of Fishermen" and "Development of Inland Fisheries"	Sustainable fisheries development	
Swachh Bharat Mission (SBM)	Development of sanitation infrastructure to improve water quality of Urban and Rural Ecosystems	Ministry of Urban Development & Ministry of Drinking Water and Sanitation
National Mission on Pilgrimage Rejuvenation and	Beautify and improve amenities and infrastructure at major pilgrimage sites	Ministry of Tourism

Spiritual Augmentation Drive (PRASAD)	in the country	
State Government schemes on fisheries, agriculture, forestry, wildlife protection, irrigation development etc.	Various components of DPR	Various State Governments and their Concerned Ministries.

Annexure III: Core and non-core activities corresponding to management action plan components

Management Plan Components	Core Activities	Non-core activities
Wetland boundary delineation and demarcation	• Wetlands boundary survey and mapping • Wetlands demarcation using geotagged pillars	• Fending of wetlands boundary • Development of promenade for urban wetlands
Catchment conservation	• Afforestation and aided regeneration within direct catchments • Small scale engineering structures (such as gully plugging, check dams, gabion structures, silt traps) • Monitoring pilot watersheds to assess degree of reduction in siltation and improvement of moisture regimes	• Large engineering structures within wetlands direct or indirect catchment
Water management	• Assessment of water requirements of wetlands and aligning operational rules for hydraulic structures for achieving the desired regime • Dredging of critically silted up wetlands areas based on consideration of bathymetric profiles and impacts on ecosystem components and processes • Dredging of inflowing channels to improve water availability in the wetland • Constructed wetlands to treat pollution from diffuse sources • Construction of Sewage Treatment Plants	• Procurement of machinery • Construction of toilets and bathing ghats • Operation and maintenance expenses
Biodiversity conservation and habitat management	• Assessment of habitat quality and species interactions • Population assessment of wetlands dependent species • Enforcement of regulation • Animal disease surveillance • Regulating species invasion by biological and habitat manipulation • Economic use of harvested biomass of invasive species	• Construction of rescue centers • Mechanical removal of invasive species biomass
Sustainable resource development and livelihood improvement	• Sustainable capture fisheries within carrying capacity of the wetland • Wetlands vegetation based micro-enterprise • Community based eco-tourism linked with wetlands • Conservation of cultural heritage linked with wetlands	• Aquaculture • Promotion of organic agriculture in wetlands catchments • Promotion of water efficient agriculture systems in wetlands catchments • Promotion of ornamental fisheries based culture

Management Plan Components	Core Activities	Non-core activities
	• Micro-enterprise development for wetlands dependent communities to diversify livelihoods	• Development of fish nurseries and seed banks • Development of tourism related infrastructure • Development of water, sanitation and health infrastructure for wetland communities • Micro-enterprise development for communities not-directly dependent on wetlands
Institutional development	• Wetlands monitoring and assessment • Research addressing specific wetlands management needs • Construction of wetlands interpretation center • Organization of World Wetlands Day and other events to enhance appreciation of wetlands values and functions • Publication of Ecosystem Health Report Cards or any other assessment of wetlands condition	• Construction of laboratories • Refurbishing of existing wetlands interpretation centers • Infrastructure development for Wetlands Authorities • Meetings of State Wetlands Authority

Annexure IV: Wetlands (Conservation and Management) Rules, 2017

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE NOTIFICATION

New Delhi, the 26th September, 2017

G.S.R. 1203(E). —Whereas the wetlands, vital parts of the hydrological cycle, are highly productive ecosystems which support rich biodiversity and provide a wide range of ecosystem services such as water storage, water purification, flood mitigation, erosion control, aquifer recharge, microclimate regulation, aesthetic enhancement of landscapes while simultaneously supporting many significant recreational, social and cultural activities, being part of our rich cultural heritage;

And whereas many wetlands are threatened by reclamation and degradation through drainage and landfill, pollution (discharge of domestic and industrial effluents, disposal of solid wastes), hydrological alteration (water withdrawal and changes in inflow and outflow), over-exploitation of their natural resources resulting in loss of biodiversity and disruption in ecosystem services provided by wetlands;

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And whereas clause (g) of article 51A of the Constitution stipulates that it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures;

And whereas the Environment (Protection) Act, 1986 is a comprehensive legislation to provide protection and improvement of the environment, including *inter-alia*, wetlands, and for matters connected therewith;

And whereas the National Environment Policy, 2006 recognises the ecosystem services provided by wetlands and emphasizes the need to set up a regulatory mechanism for all wetlands so as to maintain their ecological character, and ultimately support their integrated management;

And whereas India is a signatory to the Ramsar Convention on Wetlands and is committed to conservation and *wise use* of all wetlands within its territory;

And whereas the Central Government has published the Wetlands (Conservation and Management) Rules, 2010, vide number G.S.R. 951(E), dated the 4th December, 2010;

And whereas conservation and *wise use* of wetlands can provide substantial direct and indirect economic benefits to state and national economy, and thereby the Central Government stands committed to mainstreaming full range of wetland biodiversity and ecosystem services in development planning and decision making for various sectors;

And whereas the State Governments and Union Territory Administrations need to take into account wetland ecosystem services and biodiversity values likewise within their developmental programming and economic well-being, also taking into cognizance that land and water, two major ecological constituents of wetland ecosystems, are enlisted as State subjects as per the Constitution;

And whereas the Central Government considered it necessary to supersede the Wetlands (Conservation and Management) Rules, 2010 for effective conservation and management of wetlands in the country;

And whereas the Central Government had, in exercise of the powers conferred by section 25, read with subsection (1) and clause (v) of sub-section (2) and sub-section (3) of section 3 of the Environment (Protection) Act, 1986, published the draft Wetlands (Conservation and Management) Rules, 2016, vide number G.S.R. 385 (E) dated 31st March, 2016 for information of the public likely to be affected thereby; and notice was given that the said draft rules would be taken into consideration by the Central Government after expiry of a period of sixty days from the date on which copies of the Gazette notification is made available to the public;

And whereas the Central Government has received the suggestions and objections from the State Governments, Union Territories and its organisations, individuals and civil society organisations on the draft Wetlands (Conservation and Management) Rules, 2016;

And whereas the suggestions and objections received in response to the above-mentioned draft rules have been duly considered by the Central Government in consultation with State Governments and Union Territory Administrations.

Now, therefore, in exercise of the powers conferred by section 25, read with sub-section (1) and clause (v) of sub-section (2) and sub-section (3) of section 3 and section 23 of the Environment (Protection) Act, 1986 and in supersession of the Wetlands (Conservation and Management) Rules, 2010, except as respects things done or omitted to be done before such supersession, the Central Government hereby makes the following rules for conservation and management of wetlands, namely: —

1. Short title and commencement.—

(1) These rules may be called the Wetlands (Conservation and Management) Rules, 2017.
(2) These shall come into force from the date of their publication in the Official Gazette.

2. Definitions.—

(1) In these rules, unless the context otherwise requires,-

(a) "Act" means the Environment (Protection) Act, 1986;
(b) "Authority" means the State Wetlands Authority or Union Territory Wetlands Authority, as the case may be;
(c) "Committee" means the National Wetlands Committee referred to in rule 6;
(d) “ecological character” means the sum of ecosystem components, processes and services that characterise the wetlands;
(e) “integrated management plan” means a document which describes strategies and actions for achieving wise use of the wetland and the plan shall include objectives of site management; management actions required to achieve the objectives; factors that affect, or may affect, the various site features; monitoring requirements for detecting changes in ecological character and for measuring the effectiveness of management; and resources for management implementation;
(f) "Ramsar Convention" means the Convention on Wetlands signed at Ramsar, Iran in 1971;
(g) “wetland" means an area of marsh, fen, peatland or water; whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters, but does not include river channels, paddy fields, human-made water bodies/tanks specifically constructed for drinking water purposes and structures specifically constructed for aquaculture, salt production, recreation and irrigation purposes;

(h) “wetlands complexes" means two or more ecologically and hydrologically contiguous wetlands and may include their connecting channels/ducts;
(i) “wise use of wetlands” means maintenance of their ecological character, achieved through implementation of ecosystem approach within the context of sustainable development;
(j) “zone of influence” means that part of the catchment area of the wetland or wetland complex, developmental activities in which induce adverse changes in ecosystem structure, and ecosystem services.

(2) The words and expressions used in these rules and not defined, but defined in the Act, shall have the meanings assigned to them in the Act.

3. Applicability of rules.—These rules shall apply to the following wetlands or wetlands complexes, namely:—

(a) wetlands categorised as 'wetlands of international importance' under the Ramsar Convention;
(b) wetlands as notified by the Central Government, State Government and Union Territory Administration:

Provided that these rules shall not apply to the wetlands falling in areas covered under the Indian Forest Act, 1927, the Wild Life (Protection) Act, 1972, the Forest (Conservation) Act, 1980, the State Forest Acts, and the Coastal Regulation Zone Notification, 2011 as amended from time to time.

4. Restrictions of activities in wetlands.—

(1) The wetlands shall be conserved and managed in accordance with the principle of 'wise use' as determined by the Wetlands Authority.

(2) The following activities shall be prohibited within the wetlands, namely, -

(i) conversion for non-wetland uses including encroachment of any kind;
(ii) setting up of any industry and expansion of existing industries;
(iii) manufacture or handling or storage or disposal of construction and demolition waste covered under the Construction and Demolition Waste Management Rules, 2016; hazardous substances covered under the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 or the Rules for Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms Genetically engineered organisms or cells, 1989 or the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008; electronic waste covered under the E-Waste (Management) Rules, 2016;
(iv) solid waste dumping;
(v) discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements;
(vi) any construction of a permanent nature except for boat jetties within fifty metres from the mean high flood level observed in the past ten years calculated from the date of commencement of these rules; and,
(vii) poaching.

Provided that the Central Government may consider proposals from the State Government or Union Territory Administration for omitting any of the activities on the recommendation of the Authority.

5. Wetlands Authorities.—

(1) The Central Government hereby constitutes the State Wetlands Authority in each State with the following members, namely:—

(i) Minister In-charge of the Department of Environment/Forests of the State Government or Minister In-charge of the Department handling wetlands - Chairperson;
(ii) Chief Secretary of the State or Additional Chief Secretary equivalent - Vice Chairperson;
(iii) Secretary in-charge of the Department of Environment - Member *ex-officio*;
(iv) Secretary in-charge of the Department of Forests - Member *ex-officio*;
(v) Secretary in-charge of the Department of Urban Development - Member *ex-officio*;
(vi) Secretary in-charge of the Department of Rural Development - Member *ex-officio*;
(vii) Secretary in-charge of the Department of Water Resources - Member *ex-officio*;
(viii) Secretary in-charge of the Department of Fisheries - Member *ex-officio*;
(ix) Secretary in-charge of the Department of Irrigation and Flood Control - Member *ex-officio*;
(x) Secretary in-charge of the Department of Tourism - Member *ex-officio*;
(xi) Secretary in-charge of the Department of Revenue - Member *ex-officio*;
(xii) Director, State Remote Sensing Centre - Member *ex-officio*;
(xiii) Chief Wildlife Warden - Member *ex-officio*;
(xiv) Member Secretary, State Biodiversity Board - Member *ex-officio*;
(xv) Member Secretary, State Pollution Control Board - Member *ex-officio*;
(xvi) Additional Principal Chief Conservator of Forests of the Regional Office of Ministry of Environment, Forest and Climate Change - Member *ex-officio*;
(xvii) One expert each in the fields of wetland ecology, hydrology, fisheries, landscape planning and socioeconomics to be nominated by the State Government; and
(xviii) Additional Secretary/Joint Secretary/Director in the Department of Environment/Forests or Department handling wetlands - Member Secretary.

(2) The Central Government hereby constitutes the Union Territory Wetlands Authority for each Union Territory with the following members, namely:—

(i) Administrator or Chief Secretary of the Union Territory - Chairperson;
(ii) Secretary in-charge of the Department of Environment - Vice Chairperson;
(iii) Secretary in-charge of the Department of Forests - Member *ex-officio*;
(iv) Secretary in-charge of the Department of Urban Development - Member *ex-officio*;
(v) Secretary in-charge of the Department of Rural Development - Member *ex-officio*;
(vi) Secretary in-charge of the Department of Water Resources - Member *ex-officio*;
(vii) Secretary in-charge of the Department of Fisheries - Member *ex-officio*;
(viii) Secretary in-charge of the Department of Irrigation and Flood Control - Member *ex-officio*;
(ix) Secretary in-charge of the Department of Tourism - Member *ex-officio*;
(x) Secretary in-charge of the Departments of Revenue - Member *ex-officio*;
(xi) Director, Remote Sensing Centre - Member *ex-officio;*
(xii) Member Secretary, Union Territory Pollution Control Committee - Member *ex-officio*;
(xiii) Member Secretary, Biodiversity Board of the UT - Member *ex-officio*;
(xiv) Chief Wildlife Warden - Member *ex-officio*;
(xv) Additional Principal Chief Conservator of Forests of the Regional Office of Ministry of Environment, Forest and Climate Change- Member *ex-officio*;
(xvi) One expert each in the fields of wetland ecology, hydrology, fisheries, landscape planning and socioeconomics to be nominated by the Union Territory Administration; and
(xvii) Additional Secretary/Joint Secretary/Director in the Department of Environment/Forests or Department handling wetlands - Member Secretary.

(3) The State Wetlands Authority or Union Territory Wetlands Authority may co-opt other members, not exceeding three in number, if required.

(4) The State Wetlands Authority or Union Territory Wetlands Authority shall exercise the following powers and perform the following functions, namely:-

(a) prepare a list of all wetlands of the State or Union Territory within three months from the date of publication of these rules;
(b) prepare a list of wetlands to be notified, within six months from the date of publication of these rules; taking into cognizance any existing list of wetlands prepared/notified under other relevant State Acts;
(c) recommend identified wetlands, based on their brief documents, for regulation under these rules;
(d) prepare a comprehensive digital inventory of all wetlands within a period of one year from the date of publication of these rules and upload the same on a dedicated web portal to be developed by the Central Government for the said purpose; the inventory to be updated every ten years;
(e) develop a comprehensive list of activities to be regulated and permitted within the notified wetlands and their zone of influence;
(f) recommend additions, if any, to the list of prohibited activities for specific wetlands;
(g) define strategies for conservation and wise use of wetlands within their jurisdiction; wise use being a principle for managing these ecosystems which incorporates sustainable uses (such as capture fisheries at subsistence level or harvest of aquatic plants) as being compatible with conservation, if ecosystem functions (such as water storage, groundwater recharge, flood buffering) and values (such as recreation and cultural) are maintained or enhanced;
(h) review integrated management plan for each of the notified wetlands (including trans-boundary wetlands in coordination with Central Government), and within these plans consider continuation and support to traditional uses of wetlands which are harmonized with ecological character;
(i) in cases wherein lands within boundary of notified wetlands or wetlands complex have private tenancy rights, recommend mechanisms for maintenance of ecological character through promotional activities;
(j) identify mechanisms for convergence of implementation of the management plan with the existing State/Union Territory level development plans and programmes;
(k) ensure enforcement of these rules and other relevant Acts, rules and regulations and on half-yearly basis (June and December of each calendar year) inform the concerned State Government or Union Territory Administration or Central Government on the status of such notified wetlands through a reporting mechanism;
(l) coordinate implementation of integrated management plans based on wise use principle through various line departments and other concerned agencies;
(m) function as nodal authority for all wetland specific authorities within the State or Union Territory Administration;
(n) issue necessary directions for conservation and sustainable management of wetlands to the respective implementing agencies;

(o) undertake measures for enhancing awareness within stakeholders and local communities on values and functions of wetlands; and

(p) Advise on any other matter *suo-motu*, or as referred by the State Government/Union Territory Administration.

(5) The concerned Department of the State Government or Union Territory shall provide all necessary support and act as nodal Department and Secretariat to the Authority.

(6) The Authority shall, within ninety days of publication of these rules, shall constitute,—

(a) a technical committee to review brief documents, management plans and advise on any technical matter referred by the Wetland Authority; and

(b) a grievance committee consisting of four members to provide a mechanism for hearing and forwarding the grievances raised by public to the Authority;

(7) The Committees referred to in sub-rule (6) shall meet at least once in every quarter to perform their functions.

(8) The Authority shall meet at least thrice in a year.

(9) The term of non-official members of the Authority nominated by State Government or Union Territory Administration, shall be for a period not exceeding three years.

6. Constitution of National Wetlands Committee.—

(1) The Central Government, hereby constitutes the National Wetlands Committee with the following members, namely:—

(i) Secretary, Ministry of Environment, Forest and Climate Change, Government of India - Chairperson;

(ii) Special Secretary or Additional Secretary dealing with wetlands, Ministry of Environment, Forest and Climate Change, Government of India-Vice Chairperson;

(iii) Additional Director General, Wildlife, Ministry of Environment, Forest and Climate Change, Government of India - Member *ex-officio*;

(iv) Adviser or Joint Secretary dealing with wetlands, Ministry of Environment, Forest and Climate Change - Member *ex-officio*;

(v) Joint Secretary, Ministry of Tourism, Government of India- Member *ex-officio*;

(vi) Joint Secretary, Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India- Member *ex-officio*;

(vii) Joint Secretary, Ministry of Agriculture and Farmers Welfare, Government of India- Member *exofficio*;

(viii) Joint Secretary, Ministry of Social Justice and Empowerment, Government of India- Member *exofficio*;

(ix) Joint Secretary, Ministry of Urban Development, Government of India- Member *ex-officio*;

(x) Joint Secretary, Ministry of Rural Development, Government of India- Member *ex-officio*;

(xi) The Chairman, Central Pollution Control Board - Member *ex-officio*;

(xii) Director, Zoological Survey of India or Scientist F- Member *ex-officio*;

(xiii) Director, Botanical Survey of India or Scientist F- Member *ex-officio*;

(xiv) Director, Space Application Centre, Ahmedabad or Scientist F- Member *ex-officio*;
(xv) Member, Central Water Commission - Member *ex-officio*;
(xvi) Adviser, Niti Aayog - Member *ex-officio*;
(xvii) Three representatives of State Government or Union Territory Administration on a rotational basis for a tenure of two years each;
(xviii) One expert each in the fields of wetland ecology, hydrology, fisheries, landscape planning & socioeconomics; and
(xix) Director/Additional Director/Joint Director dealing with wetlands, Ministry of Environment, Forest and Climate Change - Member Secretary.

(2) The National Wetlands Committee may co-opt other members, not exceeding three in number, if required.

(3) The National Wetlands Committee shall perform the following functions, namely:-

(a) advise the Central Government on appropriate policies and action programmes for conservation and wise use of wetlands;
(b) evolve norms and guidelines for integrated management of wetlands based on wise use principle;
(c) monitor implementation of these rules by the Authority;
(d) advise the Central Government on proposals received from State Governments or Union Territory Administrations for omission of the prohibited activities as referred in sub-rule (2) of rule 4;
(e) recommend designation of wetlands of international importance under Ramsar Convention;
(f) recommend trans-boundary wetlands for notification;
(g) review progress of integrated management of Ramsar sites and transboundary wetlands;
(h) advise on collaboration with international agencies on issues related to wetlands; and
(i) advise on any other matter *suo-moto*, or as referred by the Central Government.

(4) The tenure of non-official members of the Committee shall not exceed three years.

(5) The Committee shall meet at least once in every six months.

7. Delegation of powers and functions to the State Governments and Union Territory Administrations.—

(1) The concerned Department of the State Government or Union Territory Administration shall, within a period of one year from the date of publication of these rules, prepare a Brief Document for each of the wetland identified for notification, providing:—

(a) demarcation of wetland boundary supported by accurate digital maps with coordinates and validated by ground truthing;
(b) demarcation of its zone of influence and land use and land cover thereof indicated in a digital map;
(c) ecological character description;
(d) account of pre-existing rights and privileges;
(e) list of site-specific activities to be permitted within the wetland and its zone of influence;
(f) list of site-specific activities to be regulated within the wetland and its zone of influence; and
(g) modalities for enforcement of regulation;

(2) Based on the Brief Document, the Authority shall make recommendations to the State Government or Union Territory Administration for notifying the wetlands.

(3) The State Government or Union Territory Administration shall, after considering the objections, if any, from the concerned and affected persons, notify the wetlands in the Official Gazette, within a period not exceeding 240 days from the date of recommendation by the Authority.

(4) (a) In case of trans-boundary wetlands, the Central Government shall coordinate with concerned State Governments and Union Territory Administrations to prepare the Brief Document containing information as listed in sub-rule (1).

(b) Based on the Brief Document, the National Wetlands Committee shall make recommendations to the Central Government for notification of the wetland.

(c) The Central Government shall, after considering the objections, if any, from the concerned and affected persons, notify the wetlands in the Official Gazette, within a period not exceeding 240 days from the date of recommendation by the Committee.

(5) (a) The Central Government shall create a dedicated web portal for information relating to wetlands.

(b) The Central Government, State Government and Union Territory Administration shall upload all relevant information and documents pertaining to wetlands in their jurisdiction.

[F. No. J-22012/78/2003-CS (W) Pt. V]

Dr. A. DURAISAMY, Scientist 'G'

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Annexure V: Designated Best Use Criteria for Surface Waters as recommended by CPCB

Designated Best Use	Class of Criteria	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	1. Total Coliforms Organism MPN/100ml Shall be 50 of less 2. pH between 6.5 and 8.5 3. Dissolved Oxygen 6mg/l or more 4. Biochemical Oxygen Demand 5 days 20^0C 2mg/l of less
Outdoor bathing (Organised)	B	1. Fecal Coliforms organism MPN/100 ml shall be 500 or less 2. pH between 6.5 and 8.5 3. Dissolved Oxygen Demand 5 mg/l or more 4. Biochemical Oxygen Demand 5 days 20^0C 3 mg/l or less
Drinking water source after conventional treatment and disinfection	C	1. Total coliforms organism MPN/100 ml shall be 5000 or less 2. pH between 6 to 9 3. Dissolved oxygen 4 mg/l or more 4. Biochemical Oxygen Demand 5 days 20^0C 3mg/l or less
Propagation of Wildlife and Fisheries	D	1. pH between 6.5 to 8.5 2. Dissolved Oxygen 4mg/l or more 3. Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	1. pH between 6.0 to 8.5 2. Electrical Conductivity at 250C micro mhos/cm Max 2250 3. Sodium absorption Ratio Max 26 4. Boron Max 2 mg/l
	Below E	Not Meeting A, B, C, D, & E Criteria

Annexure VI: Format for preparing brief document

State / Union Territory: _____

Name and address of person(s) compiling this information _____

Section 1: Identification, Location and Jurisdiction

1.1 Name of the Wetland (Alternative names, including in local language should be given in parenthesis after official name)

_____

1.2 Name of the Village(s), Tehsil(s), Municipal area(s)

_____

1.3 Name of the District(s) in which wetland complex is located

_____

1.4 Geographical coordinates (Latitude and Longitude, to degree, minutes and second)

Latitude: From _____ to _____

Longitude: From _____ to _____

1.5 Name of the Department / Agency which has jurisdiction over the wetland / wetlands complex

_____

Section 2: Site Characteristics

2.1 Area of wetland / wetlands category (ha) _____

2.2 Wetland type (Please tick appropriate categories and sub-categories)

Category	Subcategory
❒ Natural (Inland)	❒ Permanent lakes
	❒ Seasonal/ intermittent lakes
	❒ Permanent streams/ creeks
	❒ Seasonal/ intermittent streams/ creeks
	❒ Oxbow
	❒ River floodplain
	❒ Permanent freshwater marshes
	❒ Seasonal/ intermittent freshwater marshes
	❒ Shrub-dominated wetlands
	❒ Tree-dominated wetlands
	❒ Geothermal wetlands
	❒ Karst and other subterranean hydrological systems

Category	Subcategory
❒ Natural (Coastal)	❒ Coastal lagoon ❒ Estuary ❒ Intertidal mud, sand or salt flats ❒ Mangroves ❒ Coral reefs
❒ Human-made	❒ Aquaculture pond ❒ Tank ❒ Saltpan ❒ Dam / Reservoir

2.3 Depth (m) Average _____ Maximum _____

2.4 Elevation (m above mean sea level) _____ m

2.5 Water regimes

a) Main source of water (tick all applicable)

❒ Rainfall ❒ Groundwater ❒ Catchment runoff ❒ Direct / indirect inflow from river
❒ Others, please specify_____

b) Water permanence

❒ Mostly permanent ❒ Mostly intermittent

c) Destination of water from wetland

❒ Feeds groundwater ❒ To downstream catchment ❒ To river ❒ To sea

d) Water pH

❒ Acid (< 5.5) ❒ Circumneutral (5.5 – 7.4) ❒ Alkaline (> 7.4) ❒ Not known

e) Water salinity

❒ Fresh (< 0.5 g/l) ❒ Brackish (0.5 – 30 g/l)) ❒ Euhaline (30- 40 g/l) ❒ Hypersaline (>40g/l)
❒ Not known

f) Nutrient in water

❒ Eutrophic ❒ Mesotrophic ❒ Oligotrophic ❒ Not known

2.6 Climatic setting

a) Annual Rainfall /Snowfall(mm) _____

b) Temperature (°C) Minimum _____ Maximum _____

c) Humidity (%) Minimum _____ Maximum _____

2.7 Area of zone of influence (in ha) _____

2.8 Major land use within zone of influence (provide as approximate % of catchment area)

Forests _____%

Plantation _____%

Agriculture _____%

Settlements (Rural) _____%

Settlements (Urban) _____%

Industrial _____%

2.9 Map of wetland complex and zone of influence

(To be enclosed as Annex I and II to this proposal)

Section 3: Biodiversity

3.1 Notable plant species present in wetland

_____

3.2 Notable animal species present in wetland

_____

3.3 Species of conservation significance (rare, endangered, threatened, endemic species)

_____

3.4 Major plant invasive alien species

_____

3.5 Major animal invasive alien species

_____

Section 4: Ecosystem services

Importance	Relevant for the site (please tick yes or no)	If Yes, Details (upto 50 words for each category)
Source of drinking water for people living and around	❒Yes ❒No	
Source of water for agriculture	❒Yes ❒No	
Fisheries	❒Yes ❒No	
Cultivation of aquatic food plants	❒Yes ❒No	
For buffalo wallowing and use of domesticated animals	❒Yes ❒No	
Medicinal plants	❒Yes ❒No	
Is a recreational site	❒Yes ❒No	
Buffering communities from extreme events as floods and storms	❒Yes ❒No	
Groundwater recharge	❒Yes ❒No	
Water purification	❒Yes ❒No	
Acts as a sink for sediments	❒Yes ❒No	
Has significant cultural and religious values	❒Yes ❒No	
Is a site for recreation and tourism	❒Yes ❒No	
Supports noteworthy plants species	❒Yes ❒No	
Supports noteworthy animal species	❒Yes ❒No	
Site of high congregation of migratory water birds	❒Yes ❒No	

Importance	Relevant for the site (please tick yes or no)	If Yes, Details (upto 50 words for each category)
Supports life cycle of fish or amphibians	❒Yes ❒No	
Mining	❒Yes ❒No	
Any other, please list		

Section 5: Pre-Existing Rights and Privileges

Nature of right and privilege	Relevant for the site (please tick yes or no)	Does this negatively impact the wetland's ecological health?	Brief description (upto 50 words for each category)
Community Fishing (without any lease or permission from government department)	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Fishing under lease from government department	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Harvest of plants (without any lease or permission from government department)	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Harvest of plants under lease from government department	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Agriculture or horticulture within wetland	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Grazing	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Religious practices	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Withdrawal of water for domestic use	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Withdrawal of water for agriculture or fisheries	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Bathing or wallowing of domestic animals	❒Yes ❒No	❒Yes ❒No	

Nature of right and privilege	Relevant for the site (please tick yes or no)	Does this negatively impact the wetland's ecological health?	Brief description (upto 50 words for each category)
		❒Not assessed	
Plying of boats	❒Yes ❒No	❒Yes ❒No ❒Not assessed	
Any other, please list here	❒Yes ❒No	❒Yes ❒No ❒Not assessed	

Section 6: Present and Potential Threats

Threat	Degree	Present or Potential	Additional information, if any
Changes in water inflow and outflow	❒High❒Medium ❒Low	❒Present ❒Potential	
Pollution	❒High ❒Medium ❒Low	❒Present ❒Potential	
Unsustainable harvest of biological resources	❒High ❒Medium ❒Low	❒Present ❒Potential	
Mining	❒High ❒Medium ❒Low	❒Present ❒Potential	
Siltation	❒High ❒Medium ❒Low	❒Present ❒Potential	
Encroachment	❒High ❒Medium ❒Low	❒Present ❒Potential	
Spread of invasive species	❒High ❒Medium ❒Low	❒Present ❒Potential	
Any other, please list	❒High ❒Medium ❒Low	❒Present ❒Potential	

Section 7: Activities Proposed to be prohibited (other than those listed in Rule 4(2) of Wetlands Rules)

Activity	Prohibited within wetlands or zone of influence	Details of specific area wherein activity is prohibited	Name of department / agency responsible for regulation	Additional information, if any
	❒ Wetland / Wetlands complex boundary ❒ Zone of influence			

Section 8: Activities Proposed to be regulated

Activity	Place a tick mark if relevant	Regulation within wetlands or zone of influence	Level of regulation (in terms of people, restricted area or any other)	Name of department / agency responsible for regulation	Additional information, if any
Withdrawal of water / impoundment/diversion or any other hydrological intervention	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence			
Harvesting of resources (living / non-living)	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence			
Grazing	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence			
Discharge of treated sewage/ effluent / wastewater	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence			
Construction of boat jetties, and facilities for temporary use, as pontoon bridges	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence			
Aquaculture, agriculture and horticulture activities within the wetland boundaries.	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence			
Any other, please list		❒ Wetland / Wetlands complex boundary ❒ Zone of influence			

Section 9: Activities Proposed to be permitted

Activity	Place a tick mark if relevant	Within wetlands or zone of influence	Additional information, if any
	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence	
	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence	
	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence	
	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence	
	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence	
	❒	❒ Wetland / Wetlands complex boundary ❒ Zone of influence	
		❒ Wetland / Wetlands complex boundary ❒ Zone of influence	

Section 10: Listing of Available Scientific Resources Used

_____
_____
_____
_____
_____

CHECKLIST

- ❒ Responsible agency has been clearly identified and details of contact person included
- ❒ Wetland/ wetlands complex boundary has been delineated using GIS and firmed up by adequate ground truthing
- ❒ Wetland/ wetlands complex map has been provided at required scale
- ❒ Zone of influence has been delineated and included in wetland map or a separate map
- ❒ Wetland zone of influence is sufficient to manage all activities
- ❒ Site's importance has been listed, and for major categories, justification is provided
- ❒ Site's biodiversity values are listed, and for major categories, justification is provided
- ❒ List of pre-existing rights and privileges is provided
- ❒ Consistency or inconsistency of pre-existing rights and privileges is indicated to be best of available knowledge
- ❒ Threats to site are listed, and for major categories details are provided
- ❒ Activities prohibited, beyond those already listed in Rule 4(2) have been mentioned
- ❒ List of activities to be regulated within wetlands and zone of influence is provided
- ❒ List of activities to be permitted is provided

Annexure VII: Checklist for submission of integrated management plan

- ❒ Approved by the State govt./UT Administration / State Wetlands Authority / UT Wetlands Authority (**approval of the competent authority/minutes of meeting to be enclosed**)
- ❒ Forwarding letter states commitment of the State Government / UT for providing their share of budget (supporting document indicating concurrence to be enclosed)
- ❒ Integrated management plan has a cover sheet providing details on wetland, catchment area, implementing agency, total budget and fund requested from NPCA
- ❒ Health card is enclosed with the management plan (as per Annex XV)
- ❒ Brief document is enclosed with the management plan (as per Annex VI)
- ❒ Wetlands map is provided in a standard GIS format
- ❒ Map of Zone of influence in provided in a standard GIS format
- ❒ Management plan is aligned with recommended format of eight chapters
- ❒ All activities proposed to be funded by NPCA fall within the list of core and non-core activities
- ❒ Necessary drawings and technical specification for major activities is provided
- ❒ Core activities have been allocated not less than 75% of the budget
- ❒ Non- core activities have been allocated not more than 25% of the budget
- ❒ Budget has been prepared with reference to an approved Schedule of Rates

Annexure VIII: Guidelines for preparation for FMP

Step 1: Wetland Description

- Step 1 of FMP brings together the available information to describe a wetland. It is important that the description is broad-based and takes into account not just the ecosystem but its connectivity in the landscape and with communities living in and around the wetland. A partial description of wetlands (for example, on the basis of water regimes) often leads to an isolated approach to wetland management (for example, as a waterbody for storage). The idea is, to begin with whatever is available and systematically connect pieces of information to provide a robust basis for decision-making. The manager also needs to be mindful that information exists in diverse forms, from highly technical publications to Google Earth and localised colloquial forms such as customary practices. It is stressed that information in all forms is useful and needs to be internalised and assessed in terms of management utility.

- The following details should be considered while describing the wetland features:

    a. What are the physical characteristics of the wetland? (such as area, location, type, elevation, major landuse within and around the wetland based on the defined buffer area, and fragmentation, if any)
    b. What is the catchment and hydrology of the wetland? (such as sources of water into the wetland, destination of water from the wetland, area under permanent and seasonal inundation, groundwater levels around the wetlands, water quality (pH and Dissolved Oxygen), water levels, and extent of wetland catchment)
    c. What is the climatic setting of the wetland catchment? (such as average annual rainfall, min and max temperature, and extreme events)
    d. What are the key species found in the wetland? (such as the number of plant and animal species recorded in the wetland, species of high conservation value found in the wetland, migratory waterbirds, migratory fish and others) What are the major habitat types in the wetland? (such as open water areas, wet grasslands, areas with floating vegetation and others)
    e. What is the livelihood system around the wetland? (such as economic activities associated with the wetland and preexisting rights and privileges of the communities)
    f. What is the institutional setup for wetland management? (the nodal agency responsible for wetland management, whether located within a protected area, whether notified under Central/ State Acts and Rules)

- For each wetland and wetlands complex, a map should be prepared using a Geographical Information System (WGS84 datum and UTM (Universal Transverse Mercator) projection) and adopting professional cartographic standards. Essential features to be included in the map are as follows:
    a. Wetland boundary
    b. The boundary of settlements located within and around the wetland
    c. Connecting drainages, inflows and outflows
    d. Main roads and railway (if any)
    e. Major habitats (such as waterbird congregation areas, fish migration pathways, open water area, area under submerged/ floating/ emergent macrophytes)
    f. Major landmarks
    g. Protected area boundary/ Ramsar Site boundary

- Recommended scale for producing the wetlands maps is as follows:

Wetland / Wetlands complex area	Recommended scale
Below 100 ha	1: 4000
Between 100 – 500 ha	1: 10,000
Between 500- 4000 ha	1: 25,000
4000 ha and above	1: 50,000

- These scales have been recommended on the basis of spatial data available for preparing wetlands maps and details that may be extracted for management planning and monitoring decisions. Resources at 2 LISS IV data that may be used to prepare a map of wetlands below 100 ha render an approximate scale of 1:4000. Even larger wetlands can be mapped using finer resolution data. However, for expedience and cost-effectiveness, a lower scale may be sufficient for meeting management needs.

Step 2: Management Purpose

- Wetland management, as described in previous sections, aims to create enabling conditions for wetland ecosystem functioning (and thus securing biodiversity and ecosystem services) and reducing the risks of human-induced adverse change in the ecosystem. These risks, once manifest, can alter the natural functioning of the ecosystem (such as the capability to moderate hydrological regimes), thus, impacting ecosystem services (such as flood buffering) and species and ecological communities (such as flood pulse-dependent wetland species). This step of the FMP focuses on identifying the risks of adverse change, which provides a basis for setting up a management framework. The guiding questions for this step are:
    A. What are the key values associated with the wetlands?
    B. What are the present and potential threats that impact (may impact) these values?
    C. What is the overall risk of adverse change for the wetland?

- Wetland values are the preferences society attaches to these ecosystems. These can be related to:
    a) ***The inherent properties of the wetland ecosystem*** (such as wetlands as habitats for species and ecological communities, uniqueness and naturalness of the habitats, presence of high-conservation value species, wetlands as ecological corridors for migratory species and others)
    b) ***The direct and indirect contributions wetlands make to community livelihoods and wellbeing*** (such as a source of income to communities from wetland fisheries, vegetables, fodder, minerals, and medicinal products; protection to communities from floods and droughts; wetlands as sites for nature tourism and recreation; wetlands as living labs for research; wetlands as a source of freshwater and others)
    c) ***The contribution of wetlands to a meaningful relationship amongst people and nature*** (such as faith, customs and traditions associated with wetlands, myths and folklores associated with wetlands, historical significance, wetlands as heritage)

- The wetland values are (can be) adversely impacted by threats. Threats are adverse changes in a wetland which alter its natural functioning and reduce its capacity to deliver benefits to society. Direct threats are those which modify the wetland; indirect threats modify the wetland through their influence on direct threats. Following are the major categories of direct threats which are known to adversely impact wetlands:
    a) ***Structural modification***: Structural modification alters the wetlands and their immediate environment through adverse changes in hydrology, conversion or fragmentation (such as concretisation of shoreline, conversion of wetland to a non-wetland use, construction of linear infrastructure which fragments the wetland or reduces its size).
    b) ***Physical regime change***: These relate to alteration of water and sediment inflow quantity,

quality and frequency (such as reduction in water reaching the wetland, drying or wetting which exceeds the natural variation).

c) ***Unsustainable extraction***: These relate to the harvest of wetland products beyond their regeneration capacity (For example, extraction of water, species and soil beyond their regenerative capacity, sand mining which alters bed profile and flow patterns).

d) ***Introduction of non-native and external material***: These relate to introducing material and biota not naturally present in the wetland (nutrient enrichment, solid waste dumping, discharge of untreated sewage, proliferation of invasive macrophytes such as water hyacinth, introduction of non-native fish).

e) ***Local climate change impact***: Climate change has an influence on water volumes, flows, temperature, invasive species, nutrient balance and fire regimes (for example, observed expansion in high-altitude wetlands due to deglaciation, shoreline changes in coastal wetlands due to sea level rise).

- The threats (present or potential) create a risk of adverse change in the ecosystem, its functions and values. For example, the construction of a road across a wetland (structural modification) can lead to wetland fragmentation and reduced capacity to absorb floods (indirect contribution to community livelihoods) and reduced population of migratory fish species (inherent property of the wetland ecosystem). The risk analysis can be done by responding to the following questions:
    a) What is the risk of adverse change due to threats? (such as damage to the inherent properties of the ecosystem (through impact on ecosystem components[1] and ecosystem processes[2]), impact on benefits wetlands provide to community livelihoods (such as reduced availability of wetland products), and reduced quality of relationship amongst people and nature (such as diminished recreational and aesthetic value).
    b) What is the level of risk to wetlands? (High when most ecosystem components and values are affected; Medium when some ecosystem components and values are affected; and Low when the impact is potential)
    c) Which of these risks are manageable? (For example, the risks from the discharge of untreated sewage can be managed through interception, diversion and treatment measures. However, risks due to geological events, such as the impact of earthquakes on wetlands, are unmanageable).
    d) What are the knowledge gaps in risk identification and determination? (such as risks due to upstream water diversion projects; risks due to climate change).

[1] These are the living and non-living constituents of the wetland ecosystem. These include biota, wetland soils, water regimes, and others.

[2] These are the processes that occur between organisms and within and between populations and communities, including interactions with non-living environment. These include physical processes (such as water stratification and mixing, sedimentation and erosion), energy-nutrient dynamics (such as primary production and nutrient cycling), processes that maintain animal and plant population (such as migration, recruitment) and others.

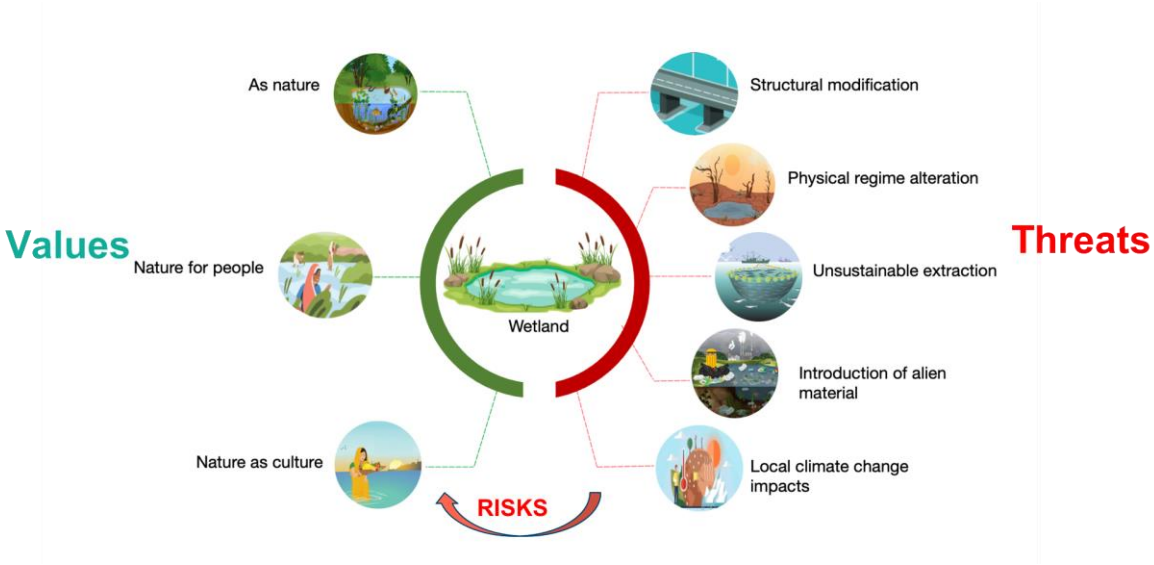


Figure 2: Values, threats and risks associated with wetlands

Step 3: Management Framework

- The management framework establishes the goal, objectives, and strategies for wetland *wise use* by taking into reference the risks identified in Step 2. The framework also includes identifying the partnerships needed to fulfil these objectives. Following are the guiding questions for this step:
    a) What is the goal that wetland management seeks to achieve?
    b) What are the objectives of management? (these should be sufficient to address risks identified in Step 2)
    c) What are the strategies needed to achieve the objectives? Which of these are immediate and long-term? Which of these needs more information for implementation?
    d) Which departments, agencies and organisations should the wetland managers work with to achieve these objectives?

- The goal statement reflects the ultimate result that the wetland management seeks to achieve. It is recommended that the goal statement aligns closely with wetland *wise use*.

- Management objectives describe the outcome of management. These objectives may relate to the following outcomes:

    a) Conservation of species, ecological communities and habitat
    b) Preserving societal benefits
    c) Strengthening wetland institutions for integrated management

- For each management objective, broad strategies need to be spelt out. The strategies indicate the set of interventions needed to achieve the objectives and, at a later stage, provide the basis for developing detailed action plans. Implementing the strategies often would require the engagement of different government departments and agencies, civil society networks, and education and research organisations. These organisations also need to be specified, as this helps to scope up the institutional arrangement needed for integrated management of the wetland. This analysis also helps identify convergence opportunities with existing development schemes, plans and programmes of different line departments and ministries. Wherever possible and relevant, corporate sector engagement can also be built in.

- A generic list of management objectives, strategies and institutional coordination needs has been provided in Annexure IX: List of management objectives, strategies and institutional coordination.

Step 4: Action Plan for FMP

- The action plan is proposed to include:

a) **Actions to develop an IMP:** These include conducting ecological, hydrological, socio-economic and institutional assessments to address knowledge gaps identified under steps 1 and 2. Stakeholder consultations for firming up the management framework (Goal, Purpose, Management objectives and Performance indicators) and action plan (detailing the nature of management intervention, geographic location, implementing agencies, physical and financial estimates, and monitoring mechanisms) may also be included. During this timeframe, the IMP drafting as per the NPCA guidelines is also to be completed.

b) **No-regret actions to address risks:** These are management interventions that are needed to address the risk of adverse change in wetlands, and the implementation of these interventions is not likely to create any unintended adverse consequences for the wetland ecosystem and its dependent communities. It is recommended that the no-regret actions include a) wetland delineation and boundary demarcation using geotagged pillars or bio-fencing (at least maintaining 50m buffer from wetland shoreline and the buffer be at least 3m wide, b) catchment area treatment c) clearing of inlets and outlets, d) establishing wetland monitoring stations, e) pollution abatement through interception, diversion and treatment of sewage flowing into wetlands, f) promoting awareness on the significance of wetlands.

c) **Actions to implement *Amrit Dharohar* components:** These need to be aligned with the four components, Species and Habitat, Nature Tourism, Wetland Livelihoods and Wetland Carbon. These should be achievable within FMP period, and the necessary information (geographic location, technology, implementing agencies, monitoring mechanism, stakeholder engagement processes) is available.

- For each of the three actions, key performance indicators must be specified. Some illustrative examples are as follows:

  a) **Actions to develop an IMP:** Number of assessments, Number of Stakeholder consultations, Availability of a draft and final Integrated Management Plan at the end of the FMP period.
  b) **No-regret actions to address risks:** Availability of a wetland boundary map, Percentage wetland boundary demarcated by geo-tagged pillars or bio-fence, Area of catchment under afforestation and aided regeneration using native species, Degree of change in key water quality parameters as a result of pollution abatement actions, Number of communities connected through outreach actions.
  c) **Actions to implement *Amrit Dharohar* components:** Availability of species and habitat inventory, Number of People's Biodiversity Registers including wetland species, Number of nature tourism amenities created, Availability of carbon assessments, Number of people provided with additional livelihood options.

- An activity-wise budget for the entire FMP should be prepared using the existing norms of the State and Central government, as may be the case. Approved Schedule of Rates or relevant documents may be enclosed in support of cost estimates for activities. The budget should also be presented as per the quarter-wise requirement of funds for various activities in the Action Plan.

- For each activity, an analysis of complementarity with ongoing development or conservation sector schemes should be done to assess the extent of funding that can be generated through convergence with these schemes. Opportunities for private sector participation may also be identified.

Annexure IX: List of management objectives, strategies and institutional coordination

Management Objective cluster	Management objectives	Strategies to achieve objectives	Institutional coordination needs
Conservation of species, ecological communities and habitat	Maintain naturalness	• Restrict changes in land use and land cover of the wetland • Prevent concretisation of shorelines • Prevent the construction of linear infrastructure through the wetland • Maintain a buffer area around the wetland where no permanent construction is permitted • Prepare a zonal management plan • Do not undertake plantation of tree species inside a wetland • Do not remove native natural vegetation	Department of Forest; Department of Urban Development; Department of Rural Development; Village Panchayat; Department of Revenue
	Maintain the population of all native and indigenous species.	• Assess habitat quality and species interactions • Assess the population of wetland-dependent species • Restrict human disturbance in bird and fish breeding areas • Protect breeding and spawning grounds and migration corridors • Restrict expansion of invasive and feral species • Constitute bird protection committees for surveillance • Maintain habitat diversity • Construct animal rescue centres • Maintain natural water regimes that can support diverse habitats	Department of Forest; State Biodiversity Boards; Bombay Natural History Society; Department of Animal Husbandry; Wildlife Institute of India; ICAR- Central Inland Fisheries Research Institute; Research and academic institutes; Village Panchayat; Wetland Mitra

Management Objective cluster	Management objectives	Strategies to achieve objectives	Institutional coordination needs
		• Control the spread of zoonotic diseases • Regulate the proliferation of invasive species by acting on invasion pathways and promoting the economic use of invasive species • Promote citizen science-based wetland species and habitat monitoring programmes (such as Asian Waterbird Census)	
	Maintain environmental flows	• Determine water needs for ecological and human purposes • Determine water use conflicts and impact on wetland ecosystem processes • Develop water allocation rules to provide water for ecological and human purposes • Monitor implementation of water allocation rules and adapt as necessary • Regulate extraction of groundwater in line with the gradient along the Ramsar site	Department of Water Resources; Department of irrigation; Research and academic institutes
	Maintain water holding capacity	• Conduct bathymetric surveys and hydrological assessments to determine water holding capacity status and trends • Revegetate degraded catchments • Small-scale engineering measures for soil and water conservation • Selective desiltation of	Department of Forest; Village Panchayat; Rural Works Department

Management Objective cluster	Management objectives	Strategies to achieve objectives	Institutional coordination needs
		silted-up wetland areas (after ecological and hydrological assessments) ● Monitoring pilot watersheds to address the degree of reduction in siltation and improve moisture regimes	
	Maintain natural inundation regime	● Assess natural hydroperiods ● Establish monitoring stations ● Dredge silted-up inflowing channels (after ecological and hydrological assessments) ● Prevent shoreline concretisation and landuse change ● Prevent wetland fragmentation	Department of Water Resources; Department of Irrigation; Rural Works Department; Department of Forest; Research and academic institutes
Preserving societal benefits	Enhance and sustain wetland livelihoods	● Ensure sustainable wetland resource harvest ● Incentivise stakeholder and community stewardship ● Promote additional livelihoods for wetland-dependent community ● Promote organic agriculture in peripheral areas around the wetland ● Promote value-added products with due consideration of benefit sharing with the communities ● Map and develop the capacity of the Self Help groups for strengthening wetland-based livelihoods	Department of Agriculture; Department of Fishery; Department of Micro, Small and Medium Enterprises; Village Panchayat; Wetland Mitra
	Maintain water quality	● Establish water quality monitoring stations	Village Panchayat; Wetland Mitra;

Management Objective cluster	Management objectives	Strategies to achieve objectives	Institutional coordination needs
		• Interception, diversion and treatment of inflowing sewage • Constructed wetlands to treat pollution from diffused sources • Construct sewage treatment plans • Solid waste management around wetlands • Promote awareness on the impacts of water pollution on community and ecosystem health	Department of Forest; State Pollution Control Board
	Development of nature tourism	• Develop nature tourism infrastructure • Develop capacities of stakeholders on nature tourism livelihoods • Construct and manage wetland interpretation infrastructure • Communication, Education, Participation and Awareness programmes	Department of Tourism; Forest Department; Village Panchayat; Wetland Mitra; Research and academic institute
Strengthening wetland institutions for integrated management	Ensure compliance with extant regulations	• Ensure implementation of Wetland (Conservation and Management) Rules, 2017 and other regulations • Strengthen awareness on regulations related to wetlands • Promote a community-based surveillance system	Department of Forest; Village Panchayat; Wetland Mitra; Knowledge Partners
	Ensure systematic use of Wetland Inventory, Assessments, Monitoring and System (WIAMS) Data	• Develop a wetland monitoring programme • Establish a network of stations to monitor hydrological and ecological parameters • Put in place a database management system for storing, analysis	Research and academic institutes; Village Panchayat; Knowledge Partners

Management Objective cluster	Management objectives	Strategies to achieve objectives	Institutional coordination needs
		and retrieving monitoring data ● Publish ecosystem health cards	
	Promote affirmative behaviour towards wetland *wise use*	● Conduct sensitisation programmes for different stakeholders ● Organise events such as World Wetlands Day, World Environment Day and others ● Document cultural practices related to wetlands ● Promote cultural activities in line with wetland wise ● Document and highlight heritage values	Department of Culture; Research and Academic institutes; Department of Forest; Village Panchayat; Wetland Mitra; Knowledge Partners

Annexure X: Blank Format of FMP

Section A: Summary

1. Wetland name: _____
2. Wetland area (Ha): _____
3. Location (District(s)): _____
4. Name of nodal agency for Framework Management Plan (FMP) implementation:

   _____

8. FMP period: _____
9. Total budget: _____
10. Funds requested from State Government and other Schemes/Plans/Programmes:

    _____

11. Funds requested from MoEFCC under NPCA: _____

Section B: Framework Management Plan

Step 1: Wetland Description

1. Physical characteristics (75 words)

2. Catchment and hydrology (75 words)

3. Climatic setting of the wetland catchment (75 words)

4. Key species, ecological communities and habitat types (100 words)

For faunal species: https://indianwetlands.in/wp-content/uploads/library/1635227120.pdf
For invasive species: http://nbaindia.org/uploaded/pdf/Iaslist.pdf
For a checklist of waterbirds of India: https://bnhsenvis.nic.in/Database/IndianWaterbirds_836.aspx
For wetland plants of India: https://bsi.gov.in/uploads/userfiles/file/Rare%20Books/Aquatic%20And%20Wetland%20Plants%20Of%20India.pdf
For aquatic insects of India : https://indiabiodiversity.org/biodiv/content/documents/document-3345fd78-8c3b-4e1c-8978-8a3e29efa493/830.pdf
For freshwater fishes of India: https://faunaofindia.nic.in/PDFVolumes/hpg/002/index.pdf
For mangroves in India: https://bsienvis.nic.in/Database/IndianMangroves_3941.aspxFor amphibians of India: https://www.indianamphibians.org/

5. Livelihood system around the wetland (75 words)

6. Institutional setup (75 words)

Step 2: Management Purpose

1. Key Values

1.1. Inherent properties of the wetland ecosystem (50 words)

Describe the inherent properties of the wetland ecosystem, such as wetlands as habitats for species and ecological communities.

1.2.Direct and indirect contributions wetlands make to community livelihoods and well-being (50 words)

Describe the direct and indirect contributions wetlands make to community livelihoods and well-being (such as a source of income to communities from wetland fisheries.

1.3. Contribution of wetlands to a meaningful relationship amongst people and nature (50 words)

Describe the contribution of wetlands to a meaningful relationship amongst people and nature (such as faith)

1.4. Knowledge gaps on wetland values (100 words)

Describe the studies that are needed to assess wetlands values

2. Threats (250 words)

2.1. Structural modification (50 words)

Mention whether the threat is present or potential and summarise evidence for the threat (such as part of the wetland encroached)

2.2. Physical regime change (50 words)

Mention whether the threat is present or potential and summarise evidence for the threat (such as such as reduction in water reaching the wetland)

2.3. Unsustainable extraction (50 words)

Mention whether the threat is present or potential and summarise evidence for the threat (such as removal of water, species and soil beyond their regenerative capacity)

2.4. Introduction of material and biota (50 words)

Mention whether the threat is present or potential and summarise evidence for the threat (such as solid waste dumping)

2.5. Climate change impact (50 words)

Mention whether the threat is present or potential and summarise evidence for the threat (such as shoreline changes of coastal wetlands due to sea level rise)

2.6. Knowledge gaps in identifying and assessing threats (100 words)

Describe the studies that are needed to assess identify the threats and assess their impacts on wetlands

3. Risk of Adverse Change (250 words)

3.1. Risk of adverse change due to threats (50 words)

Describe the impact of the threats on the wetland ecosystem.

3.2. Level of risk to wetlands (50words)

Assign a risk category (High, Medium, Low) and provide the reason thereof

3.3. Manageable and non-manageable risks (50 words)

Mention the risks that are manageable and risks that are non-manageable?

3.4. Knowledge gaps in addressing the risks (100 words)

Describe the studies that are needed to assess the risks and their impacts on their wetlands

Step 3: Management Framework

1. Goal (50 words)

Specify the goal of the Framework Management Plan

2. Objectives

In the table below mention the objectives to achieve the goal of the FMP. Refer Step 3 and Annex XI

Sr no	**Objective**
List objectives related to Conservation of species, ecological communities and habitat	1.1…….. 1.2…….. 1.3……..
List objectives related to Preserving societal benefits	2.1……... 2.2…….. 2.3……
List objectives related to Strengthening wetland institutions for integrated management	3.1…….. 3.2……. 3.3……..

3. Strategies

In the table below list strategies needed to achieve objectives. Refer to Annex XII of these guidelines

Objective Statement	**Strategies**
1.1	
1.2	
1.3	
2.1	
2.2	
2.3	
3.1	
3.2	
3.3	

4. Departments, agencies and organisations engaged in the implementation of FMP

Name nodal agency for implementation

List the collaborating State Government Departments and agencies

List the Panchayati Raj Institutions and Urban Local Bodies

List the collaborating Research and Academic organisations ((including local organisations)

List the collaborating NGOs and CBOs

List any other organisations

Step 4: Action Plan (2 pages)

Activity	**Sub activity**	**Key Performance Indicators**	**Responsible Agency**	**Deliverable**
Activities for developing IMP				
1.1				
1.2				
1.3				
No regret actions to address risks				
2.1				
2.2				
2.3				

Actions to implement *Amrit Dharohar* components				
3.1				
3.2				
3.3				

*Add more rows if needed

Section C: Work Plan and Budget

1. *Work plan (0.5 page)*

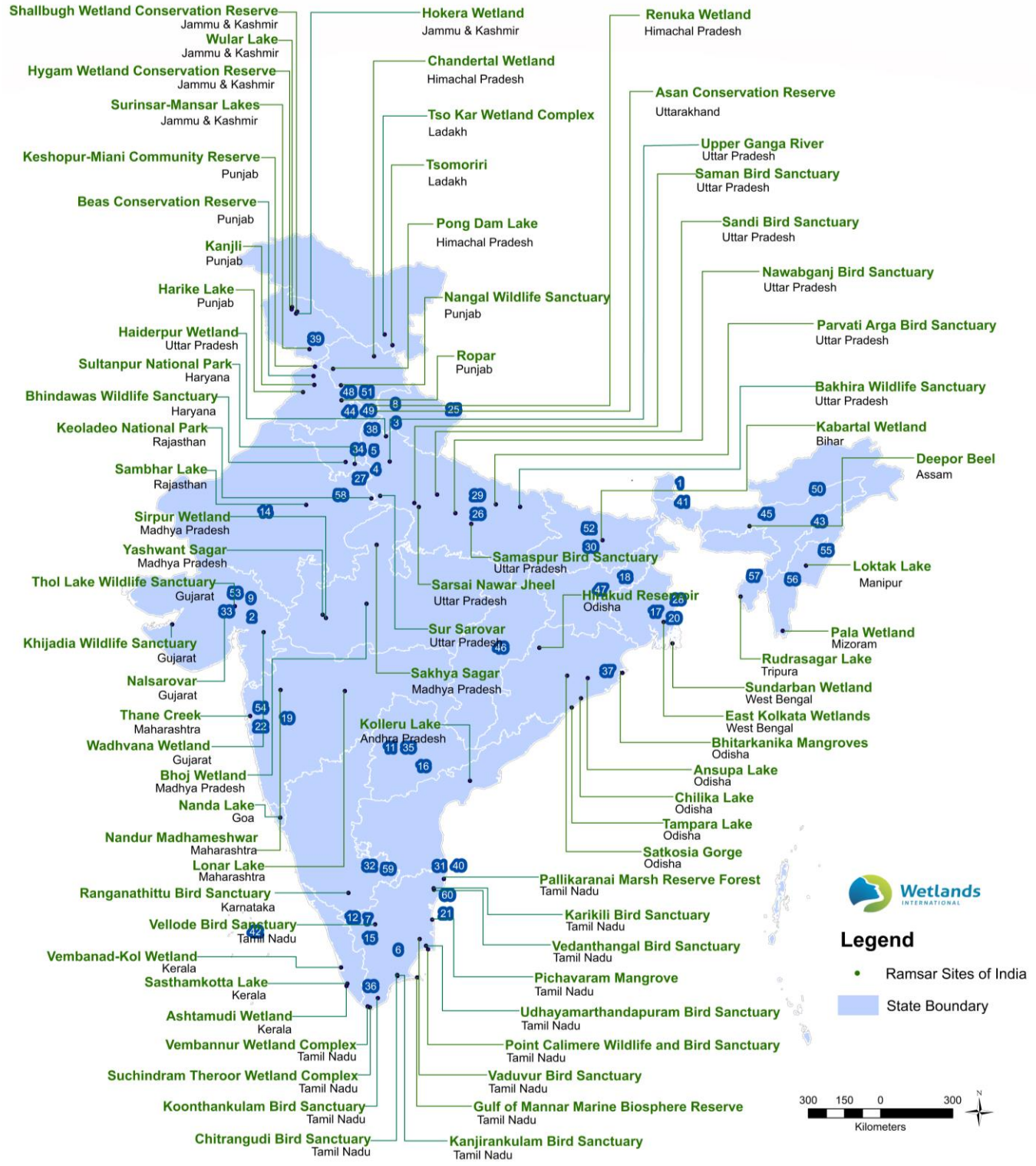
	Months											
Key Activities (refer to Step 4)												
Activity 1:												
Activity 2:												
Activity 3:												
Activity 4:												

2. Budget (1 page)

Provide a detailed budget, in particular with the activities mentioned in Section B for all items for which grant support is being requested. Use the template below to prepare the budget.

Management Activity	**Activity (refer to Step 4)**	**Total Budget**	**Funds from Central Govt. NPCA Share**	**Funds from State Govt. NPCA Share**	**Funds from other donors (Project &/or donor name)**	**Funds from Private Sector (Agency Name)**	**Funds available from convergence sources**	**Funds to be raised**
		(a)	(b)	(c)	(d)	(e)	(f) = (b) + (c) + (d) + (e)	(g) + (a) – (f)

Annexure XI: Ramsar Sites and EIACP Centres



EIACP Centres

Sr. No.	Centre Name	Sr. No.	Centre Name
1	EIACP RP SIKKIM on ECOTOURISM (RP)	31	DZUM EIACP PC- RP (RP)
2	NIOH-EIACP (PC-RP), Ahmedabad, Gujarat (RP)	32	Centre for Ecological Sciences- Indian Institute of Science (IISc) (RP)
3	ICFRE-Forest Research Institute (RP)	33	Gujarat Cleaner Production Centre (GCPC) (RP)
4	SPA-EIACP PC RP (RP)	34	The Energy and Resources Institute (TERI) (RP)
5	JNU EIACP Resource Partner on 'Geodiversity and Impact on Environment' (RP)	35	EPTRI EIACP Hub on Status of Environment Related Issues (Hub)
6	TCE EIACP PC-RP (RP)	36	EIACP PC Hub, KSCSTE, Kerala (Hub)
7	ICFRE-IFGTB EIACP PC RP, Coimbatore (RP)	37	Centre for Environmental Studies (CES), Forest, Environment & Climate Change Department, Government of Odisha (Hub)
8	EIACP Programme Centre 'Wildlife and Protected Areas Management, Wildlife Institute of India, Dehradun (RP)	38	EIACP Hub, Uttarakhand Pollution Control Board (Hub)
9	Consumer Education and Research Centre-Ahmedabad, EIACP-PC RP (RP)	39	EiACP DEE&RS J&K (Hub)
10	CPREEC EIACP PC - RP, CHENNAI (RP)	40	Tamil Nadu EIACP PC HUB (Hub)
11	EPTRI EIACP RP on Ecology of Eastern Ghats (RP)	41	Sikkim EIACP Hub (Hub)
12	SACON EIACP (RP)	42	EIACP- CENTER LAKSHADWEEP (Hub)
13	IIHH-EIACP (RP)	43	EIACP PC Hub Nagaland (Hub)
14	EIACP RP on Combating Desertification, ICAR-CAZRI, Jodhpur (RP)	44	EIACP PC-HUB HIMCOSTE, SHIMLA HIMACHAL PRADESH (Hub)
15	EIACP at Amrita Vishwa Vidyapeetham, Coimbatore (RP)	45	EIACP PC Hub Assam (Hub)
16	CSIR-IICT EIACP RP Programme Centre on Climate Change and Public Health (RP)	46	CECB EIACP (Hub)
17	ZSI EIACP RP-PC on Biodiversity (Fauna) (RP)	47	EIACP-PC-HUB JHARKHAND (Hub)
18	IIT(ISM) EIACP (PC-RP) (RP)	48	EIACP CENTRE PC HUB, Department of Environment, Chandigarh Administration (Hub)

Sr. No.	Centre Name	Sr. No.	Centre Name
19	Indian Institute of Tropical Meteorology (IITM-EIACP PC-RP), Pune (RP)	49	Directorate Environment & Climate Change Haryana (Hub)
20	EIACP PC-RP on Biodiversity (Flora), Botanical Survey of India (RP)	50	EIACP- Arunachal Pradesh (Hub)
21	CASMB EIACP PC RP (RP)	51	EIACP Hub Punjab (Hub)
22	Avian Ecology at the Bombay Natural History Society (BNHS-EIACP) (RP)	52	Bihar State Pollution Control Board (Hub)
23	IOM EIACP PC RP Chennai (RP)	53	Gujarat Ecology Commission (GEC) (Hub)
24	CPCB EIACP PC RP (RP)	54	Environment and Climate Change Department Govt. of Maharashtra (Hub)
25	EIACP Centre on Himalayan Ecology (RP)	55	Directorate of Environment & Climate Change, Govt. of Manipur (Hub)
26	NBRI-EIACP (RP)	56	Mizoram Pollution Control Board (MPCB) (Hub)
27	WWF-India (RP)	57	Tripura State Pollution Control Board (TSPCB) (Hub)
28	DESKU EIACP PC RP (RP)	58	Rajasthan State Pollution Control Board (RSPCB) (Hub)
29	Institute of Wildlife Sciences, University of Lucknow (RP)	59	EMPRI EIACP Hub (Hub)
30	Asian Development Research Institute (RP)	60	Puducherry EIACP PC HUB (Hub)

Annexure XII: Checklist for submission of FMP

- ❒ Approved by the State govt./UT Administration / State Wetlands Authority / UT Wetlands Authority (**approval of the competent authority/minutes of meeting to be enclosed**)
- ❒ Forwarding letter states commitment of the State Government / UT for providing their share of budget (supporting document indicating concurrence to be enclosed)
- ❒ FMP has a cover sheet providing details on wetland, catchment area, implementing agency, total budget and fund requested from NPCA for preparation of IMP
- ❒ Health card is enclosed with the management plan (as per Annex XV)
- ❒ Brief document is enclosed with the management plan (as per Annex VI)
- ❒ The strategy is aligned with *Amrit Dharohar* and *Mission Sahbhagita*, to the extent possible.
- ❒ The draft FMP shared with key stakeholders, and their comments incorporated.

Annexure XIII: Indicative Format for Tripartite Memorandum of Understanding for implementation of Integrated Management Plans/ Framework Management Plans

(to be signed on Rs. 100/- Non Judicial Stamp Paper)

MEMORANDUM OF UNDERSTANDING (MOU)

Between

THE MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVERNMENT OF INDIA

THE STATE GOVERNMENT OF _____

And

THE IMPLEMENTING AGENCY (IA) – _____

This MoU provides a framework of commitments by concerned stakeholders not only for successful implementation of the project, on '_____' (project name) at _____ (name of place), but also for proper Operation and Maintenance (O&M) of the assets created. This agreement lays down the conditions, which the State Government and the Implementing Agency will undertake on the basis of the financial support provided by Government of India through the Ministry of Environment, Forest & Climate Change (MoEF&CC).

THIS AGREEMENT is made on this _____day of ___ (month), ___ (year) between the Government of India, through the MoEF&CC,

and

The State Government of _____ through its _____ (Name of the Department)

and
_____ (name of Implementing Agency)**,** the Implementing Agency (IA).

WHEREAS

The MoEF&CC will provide financial support to the State Government in their efforts for '_____' (project name) at _____ (name of place), under their jurisdiction.

The _____ has committed to provide the State's share of the capital cost of the project

NOW THE PARTIES WITNESSED AS FOLLOWS:

1. MoEF&CC shall release the first installment of Rs. _____ (__% of Central Share) of grant to the State Government/UT Administration upon signing of the MoU and when the corresponding State Share is deposited by (IA) in a separate account and a proof is submitted in this regard to the Ministry.
2. The release of further installments of funds will be performance based, and will depend on submission of physical and financial progress reports and proper Utilization Certificates as well as on fulfillment of conditions as set out in Administrative Approval & Expenditure Sanction (AA&ES) and the first installment.
3. MoEF&CC shall release subsequent installments of grant to the State Government after the corresponding State Share is deposited by (IA) and a proof is submitted in this regard to the Ministry.
4. The (IA) will bear 40% of the cost of the project or their share as decided from time to time. (IA) (O&M Agency) shall bear the costs for full O&M and also responsible to carry out O&M after implementation of the project.
5. The State Government will also ensure commitment from (IA) (O&M Agency) to take over the assets of the project on completion of project.
6. The State Government will constitute a Project Review Committee headed by the Secretary of the Nodal Department for reviewing the progress of the project on quarterly basis. A representative of MoEF&CC will be a member of this Committee.
7. (IA) will coordinate with ULBs (Urban Local Bodies) as well as other agencies to ensure synergy between programs like Jawaharlal Nehru National Urban Renewal Mission / Urban Infrastructure Development Scheme for Small and Medium Towns, and other schemes/programmes with convergence potential and approved components under the NPCA (National Plan for Conservation of Aquatic Eco-systems).
8. The State Government and the (IA) will be responsible for implementing, monitoring and reporting under the project.
9. The State Government shall be responsible for necessary coordination mechanism between the IA and ULBs.
10. The State Government will ensure that the Physical Progress, Expenditure Reports and Utilization Certificates are furnished by the IA to MoEF&CC on a quarterly basis. In case the IA fails to submit such a report, further installment of GoI's share may be withheld, until such submission.
11. MoEF&CC or any agency nominated by it, may undertake periodic site visits to ascertain the progress of the project and compliance of the conditions in the AA&ES and for release of instalments.
12. The State Government and the IA shall institute mechanism to ensure timely completion of the project.
13. The State Government will provide certification of completion of the project works.
14. In case of dispute between the parties, the matter will be resolved through mutual discussion.
15. In case of any breach regarding the terms and conditions of the MoU, MoEF&CC shall be entitled to withhold release of subsequent instalments of the grant.
16. The funds routed through MoU mechanism will be liable to statutory audit by the Controller and Auditor General of India.
17. This MoU will be effective from the date of signing and would remain operative unless terminated by parties concerned by mutual consent.

SIGNATORIES

For Government of India, through Joint Secretary, Ministry of Environment, Forest & Climate Change

Name & Designation

For State Government, through State Secretary of Nodal Department

Name & Designation

For Implementing Agency, through Commissioner, _____ Municipal Corporation/other bodies

Name & Designation

Annexure XIV: Template for Implementation Progress Reporting of IMP/FMP (subjected to decision of TAC)

A) Format for Implementation Progress Report

Activity (Refer to Step 4)	**Sub activity**	**Key Performance Indicators**	**Implementation progress**			
			Q1	Q2	Q3	Q4
Activities for developing IMP						
1.1						
1.2						
1.3						
No regret actions to address risks						
2.1						
2.2						
2.3						
Actions to implement *Amrit Dharohar* components						
3.1						
3.2						
3.3						

B) Format for Expenditure

Management Activity	**Activity (refer to Step 4)**	**Total Budget**	**Fund Sanctioned**	**Expenditure**			
				Q1	Q2	Q3	Q4

Annexure XV: Template for Wetland Health Card

Wetland Health Card

State/UT Name: District:
Village/City Name: Rural/urban:
Wetland ID: Wetland Name:
Latitude: Area (in Ha):
Longitude: Wetland Type:
Protection Status:

Features	Indicator	Desired Value	Actual Value	A	B	C	D	E
Area	% wetland converted to non-wetland use since 2000			0%	1-5%	6-10%	11-20%	More than 20%
Hydrology and catchment	Ratio of number of natural inlets choked and diverted to total number of natural inlets.			0-0.2	0.3-0.4	0.4-0.6	0.7-0.8	More than 0.8
	Ration of number of natural outlets choked and diverted to total number of natural outlets			0-0.2	0.3-0.4	0.4-0.6	0.7-0.8	More than 0.8
	Biological Oxygen Demand			80-100% sample meet the criteria	60-80% sample meet the criteria	40-60% sample meet the criteria	20-40% sample meet the criteria	Less than 20% sample meet the criteria
Biodiversity	% wetland area covered by invasive macrophytes.			<10%	11-20%	21-30%	31-40%	More than 40%
	Annual waterbird count as a proportion of average count of last 5 years			More than 0.7	0.6-0.7	0.5-0.6	0.4-0.5	less than 0.5
Governance	Clearly demarcated wetlands map			Wetlands map prepared and approved by SWA	Wetlands map prepared and under consideration of SWA	Wetlands map prepared but not placed under SWA	Wetland map under preparation	Wetlands map not prepared
	Wetland Management plan			Management plan prepared and approved	Management plan prepared and	Management plan prepared, not	Management plan under preparation	No management plan

				by SWA	submitted to SWA	submitted to SWA		
	Wetlands notification			Final notification under extent regulation	Draft notification	Regulation under process	Regulation planned, process initiated	No regulation
Health Score			Excellent	0.96-1.00	A+			
			Very Good	0.91-0.95	A			
			Good	0.86-0.90	B+			
			Moderate	0.81-0.85	B			
			Fair	0.76-0.80	C+			
			Bad	0.71-0.75	C			
			Very Bad	0.61-0.70	D			
			Worse	0.51-0.60	E			

Subjected to modification by TAC

Wetlands Division
Ministry of Environment, Forest and Climate Change
Government of India
www.indianwetlands.in