

Developing a national policy framework for wetlands conservation and wise use: a brainstorming workshop

Concept note for one day brainstorming meeting at the Ministry of Environment, Forest and Climate Change, Government of India

Wetlands are transitional state between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water. As per the Ramsar Convention, "wetlands are areas of marsh, fen, peat land 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."

2. 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.

3. As 'kidneys of landscape', wetlands receive and filter flows of water and waste from upstream sources. Inland wetlands function like sponges, absorbing and storing excess rainfall, stabilizing water supplies and reducing flood intensity & frequency. Coastal wetlands act like shock absorbers shielding inhabitants of the coastlines from flooding, property damage and loss of life. The extensive food chain and biological diversity in wetlands make them 'biological supermarkets'.

4. Wetlands are valuable as sources, sink and transformers of a multitude of biological, chemical and genetic material. There is a surge in the frequency of water-related disasters worldwide and more extreme weather is predicted in the upcoming years. Wetlands play a significant role in combating the impacts of climate change. Yet, wetlands are one of the most rapidly degrading ecosystems and 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. About 35% of the wetlands (whose areas are accounted for) have been lost since 1970. A core driver of wetland degradation is limited integration of their full range of biodiversity and ecosystem service values in sectoral developmental planning.

5. The Ministry of Environment, Forest and Climate Change is the nodal ministry of Government of India for matters related to conservation and wise use of wetlands. Since the 7th Plan period, the Ministry has been implementing a scheme for supporting state governments in

implementation of wetlands management plans. Responding to the increasing pollution of urban and peri-urban waterbodies, a National Lake Conservation Plan was initiated in 2001. Support to state governments in conservation of mangroves and coral reefs is provided under a separate programme, whereas wetlands located within protected areas receive funding support under the scheme entitled 'Integrated Development of Wildlife Habitats'. India is also a signatory of International Convention on Wetlands, wherein 26 sites have been designated as Wetlands of International Importance.

6. The Environment (Protection) Act, 1986 is a comprehensive legislation to provide protection and improvement of the environment, including inter-alia, wetlands. The National Environment Policy (NEP), 2006 recognizes 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.

7. A regulatory framework for wetlands has been put in place in the form of Wetlands (Conservation and Management) Rules, 2017 superseding Wetlands (Conservation and Management) Rules, 2010. As per provisions of Wetlands (Conservation and Management) Rules, 2017, State/UT Wetlands Authorities in the States/UTs have been constituted to oversee the conservation, management & regulation of wetlands in their jurisdiction.

8. To avoid overlap and promote better synergies, both the programmes have been merged in February, 2013 into one integrated scheme of National Plan for Conservation of Aquatic Ecosystems (NPCA). The scheme aims at holistic conservation and restoration of lakes and wetlands for achieving the desired water quality enhancement, besides improvement in biodiversity and ecosystem through an integrated and multidisciplinary approach and a common regulatory framework. NPCA is presently operational during XII Plan Period on 60:40 cost sharing between Central Government and respective State Governments (90:10 for North Eastern States). So far, 180 sites have been identified under the scheme of NPCA programmes and financial support has been provided to the State Govt. for implementation of management action plan of these sites. Based on the proposals received from the State Governments, Financial Assistance has been provided for conservation and management of 150 wetlands (including lakes).

9. Under the capacity building programme of NPCA scheme, regional workshops, training programs are organized for imparting training to the wetland managers involved in the conservation and management of wetlands and lakes in the country. World Wetlands Day is observed on 2nd February each year to raise awareness among all sections of the society about values and functions of wetlands and wise-use of their resources.

10. At the behest of the Ministry, the Space Applications Centre (SAC), Ahmedabad has prepared the National Wetland Inventory Atlas mapping a total of 7,57,060 wetlands in the country. The National Wetland Inventory Atlas of 2011 indicates that India has 15.26 million hectare area under wetlands that is around 4.63% of the geographic area of the country. Of this, inland wetlands occupy 69.22 % (10.56 million ha.). Nearly 12% of the inland wetland area is in the form lakes and ponds (including those less than 2.25 ha.).

11. Wetlands in India continue to be stressed from various pressures including *inter alia* encroachment, conversion for alternate use, pollution, species invasion and overharvesting of resources. A core driver of wetlands degradation is lack of recognition of their full range of ecosystem services and biodiversity values in developmental planning and policy making, leading to various government departments working for cross-purposes.

12. Putting in place a long term policy framework and action plan for wetlands would enable the MoEFCC and other Ministries of Government of India to strategize efforts towards conserving and sustainably managing the health of wetlands as key natural resources endowments of the country.

Some of the key themes, recognized through interaction with states in regional consultation meetings, wherein detailed strategies and milestones are desired include:

- a) wetlands inventory and assessment,
- b) integrated management of wetlands,
- c) wetlands and water management,
- d) inclusion of wetlands in land use records,
- e) conserving wetland dependent species and habitats,
- f) management of invasive species,
- g) monitoring and evaluation,
- h) capacity development, and
- i) communication and outreach.

It is felt that further elaborating the aforementioned themes, (and others which may be recommended by stateholders and experts) will help establish tangible milestones which may be pursued by the MoEFCC and state governments.

13. This one-day brainstorming workshop would help to outline key elements of national policy for wetlands (for a ten-year period), thematic elements and strategies, priorities and milestones. The policy formulation process would include enlisting good practices and experiences in wetlands management for integration into national programmatic framework for conservation and wise use of wetlands. During this workshop, presentation by select subject matter experts and wetlands practitioners will be made elucidating the advancement in science

and best practice, and the ways in which the said science and practice can be used to frame policy elements and milestones.

Theme 1: Wetlands Inventory and Assessment

National Wetlands Inventory & Assessment (NWIA) has been prepared by SAC Ahmedabad to assess geographic extent of these ecosystems. Utilization of the information that can be accessed through NWIA needs to be enhanced to facilitate technical and administrative approaches for wetland conservation and management.

Utilization of National Wetlands Inventory & Assessment (NWIA) in the field of Wetland Conservation and its application for monitoring of activities under the Management Action Plan

Dr. K. Das, Director, SAC, ISRO

Theme 2: Integrated management of wetlands

A systematic approach to conservation and sustainable management of wetlands is essential to restore the wetlands from degrading at an alarming rate. A toolkit of Best Practices and Methods, comprising Models of Integrated Management Action Plan (if possible region-wise mainly for North Eastern Region and Rest of India), together with insights from lessons learned may be developed for easy reference and guidance.

Integrated management planning for wetlands wise use

Dr Ritesh Kumar, Wetlands International South Asia

Conservation and Management of wetlands in Himalayan Region

Prof. R.C Sharma, Professor, Env Sciences, Garwal University, Srinagar.

Integrating wetlands in coastal zone management

Prof R Ramesh, National Center for Sustainable Coastal Management, Chennai

Theme 3: Integrating wetlands in land use records

Integrating wetlands in land use record will have positive implications towards its conservation and thus was taken as an agenda in the 1st meeting of National Wetlands Committee. In the meeting the representative from the Department of Land Resource clarified that inclusion of the wetlands as legitimate and distinct land use category is possible if categorization/classification of the land use is performed and submitted to the Dept. which can be done in consultation with the

Indian Council of Agricultural Research (ICAR). Following which, the State Govt. will inventories the wetlands.

Experiences of Uttar Pradesh

Bibhas Ranjan, APCCF, State Wetlands Authority Uttar Pradesh

Experiences of Gujarat

UdayVora, Formerly Chief Wildlife Warden, Gujarat

Theme 4: Innovations in wetlands monitoring and research

Monitoring is a critical component for successful implementation of the Management Action Plans. A toolkit of indicators for pre-and-post-activity comparison may provide a good basis for observing and assessing the efficiency of implementation of the projects.

Establishing long term wetlands monitoring system for Chilika and Ecosystem Health
Report Card

Dr Ajit Pattnaik, Former PCCF, Odisha

Monitoring wetlands biodiversity

Dr B C Chaudhury, Formerly Wildlife Institute of India, Dehradun

Theme 4: Wetlands and Urban Planning

Urban and peri-urban wetlands make the cities and their suburbs livable. Urbanization poses a threat to the existence of these wetlands often causing their degradation resulting from acquisition of lands and pollution. Only if Urban Planning accommodates these resources as an integral component, do these valuable ecosystems stand a chance to survive and bestow humanity with their ecosystem services.

Wetlands as natural infrastructure for urban and peri-urban spaces

Dr P. S. N. Rao, Director, School of Planning and Architecture

Wetlands and Smart Cities: Case of Bhopal

CEO, Bhopal Municipal Corporation

Managing Pallikarnai: Imperatives and Challenges

Dr M Jayanthi, State Wetlands Authority (Tamil Nadu)

Theme 6: Wetlands ecosystem services: assessment and valuation

Each wetland has a set of valuable ecosystem services to offer. The profit provided by a naturally functioning wetland to the society is immense. These services need to be assessed and evaluated properly to prevent their exploitation and promote their sustainable use.

Valuing and mainstreaming wetlands ecosystem services: Lessons from TEEB India Initiative

Ravindra Singh, GIZ-India and Dr Ritesh Kumar, Wetlands International South Asia

Theme 7: Communication, Education, Participation and Awareness

CEPA has an important role to play in making the masses more sensitive towards wetlands and the concerned State Officials more equipped to preserve the wetlands. As initiative for environmental health improvement, the experience and learning from Chilka Health Card can be replicated in other coastal wetlands under negative impact.

Communicating wetlands

Shri. R. D. Kamboj, IFS, Indroda Nature Park, P.O. Sector -7, Gandhinagar-382 007, Gujarat, India

Developing Communication tools for Conservation of Wetlands

Dr. Suresh Babu, Director, Wetland, River & Water Policy, WWF India

Matrix for Panel discussion on key policy elements, thematic areas, strategies and milestones

Thematic area	Overall outcome	Key challenges	Questions to experts
Wetlands inventory and assessment	<p>Information on status and trends on wetlands is available to guide policy making and effectiveness assessment</p> <p>State governments use wetlands inventory for prioritization and decision-making on developmental projects related to wetlands</p>	<p>Limited use of national wetlands inventory for wetlands prioritization</p> <p>Wetlands inventory approaches adopted to date do not address the needs of wetlands management at site scale</p> <p>Trends in wetlands extent remains undetermined due to lack of comparability between assessments</p>	<ul style="list-style-type: none"> • How can wetlands inventory and assessment initiatives fulfil the needs of policy targeting related to wetlands? • How can wetlands inventory address the needs of wetlands prioritization and management within states and sites? • How can a robust information system on status and trends in wetlands be developed?
Integrated management of wetlands	<p>A network of conserved and well-managed wetlands sustain diverse ecosystem services and biodiversity</p> <p>Wetlands management finds prominent inclusion within the development agendas of the state governments</p>	<p>A significant proportion of wetlands identified for management are located within protected areas</p> <p>Wetland management plans do not take into account drivers of degradation thus leading to sub-critical investments</p> <p>In absence of well-defined monitoring mechanisms, the effectiveness of management measures remains unassessed</p> <p>High dependence on central government for funding support, limited allocation for</p>	<ul style="list-style-type: none"> • How can the network of wetlands prioritized for management be expanded to proactively include wetlands beyond protected area network? • How can convergence between various funding sources related to wetlands be harmonized to address river basin and coastal zone scale drivers of change? • What should be recommended structure for monitoring wetlands management effectiveness? • What measures can be taken to ensure

		wetlands conservation within state budget	sufficient allocation for wetlands management at state level?
Wetlands and water management	<p>Wetlands are recognized as natural water infrastructure in water resources planning and decision-making</p> <p>Basin and coastal zone scale water and land use planning considers water quality and quantity implications on wetlands, and includes allocation of water for wetlands in planning and decision-making</p>	<p>Limited recognition of wetlands as source and moderators of water regimes within water resources planning and decision-making</p> <p>Water regime needs of wetlands not accounted for river basin and coastal zone planning</p>	<ul style="list-style-type: none"> • How can water allocation for wetlands be ensured? • How can wetlands be made a part of river basin and coastal zone planning?
Wetlands biodiversity	<p>A network of well managed wetlands provide habitat to wetland dependent species</p> <p>Adverse population trends in wetlands dependent species is halted and reversed</p>	<p>Management of wetlands protected areas do not take into account catchment scale changes which influence wetlands conditions enabling biodiversity support</p> <p>Several high biodiversity value wetlands are not covered within the ambit of national programme</p>	<ul style="list-style-type: none"> • How can management practices for wetlands protected areas take into account wider basin and coastal zone scale land use changes that adversely impact wetlands biodiversity? • How can we make best use of citizen science initiatives such as Asian Waterbird Census to improve knowledge on status of wetlands and expand the ambit of management?
Wetlands and urbanization	Wetlands are recognized as an integralelement of urban development planning	<p>Expansion of urban areas is often at the detriment of wetlands</p> <p>Urban and peri-urban areas create huge ecological overloads on wetlands leading to their encroachment, pollution and</p>	<ul style="list-style-type: none"> • How can wetlands be made part of urban planning processes? How can Smart Cities initiative take into account the role wetlands play in making cities liveable?

		conversion for alternate use	
Capacity development	<p>Built capacity within policy makers and managers on wetlands management</p> <p>A network of training institutions on different dimensions on wetlands management is established</p>	<p>Limited capacity within state governments to design integrated management plans</p> <p>Absence of well-established training and skill development opportunities for wetlands managers on various aspects of wetlands management</p>	<ul style="list-style-type: none"> • How can a network of institutions and training curricula on wetlands management be established addressing diverse needs of state governments and other stakeholders? • How can research management interface be strengthened? What are the priority areas for research that can support adaptive management of wetlands?
Wetlands governance	<p>A decentralized governance architecture for wetlands is established involving multiple stakeholders at all levels of planning and decision-making</p> <p>Wetlands are recognized as a distinct land use category and recorded as such within land use records</p> <p>Adverse developmental interventions on wetlands are regulated on the basis of Wetlands (Conservation and Management) Rules, 2017 and other complementing national and state level regulation</p> <p>Affirmative changes in societal behavior towards conservation and wise use of wetlands is</p>	<p>Lack of recognition of wetlands in land use records is used as a loophole to convert wetlands</p> <p>Full range of wetlands ecosystem services and biodiversity values are not taken into account within sectoral development pursuits</p> <p>Ground enforcement of extant regulatory frameworks is very weak</p> <p>Sporadic efforts on wetlands CEPA do not result in any tangible behavioral change towards wetlands</p>	<ul style="list-style-type: none"> • How can State Wetlands Authorities be made more effective towards their role as key policy making and regulatory institutions at state level? • What measures need to be taken to incorporate wetlands into land use records? Can experiences of states as Uttar Pradesh and Gujarat be replicated in other states? • What are the contours of a national CEPA programme on wetlands? How can a national CEPA network be developed to complement and amplify the efforts of central governments?

	enabled through a comprehensive communication, education, participation and awareness programme		
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