Wetlands International South Asia

Annual Report 2021-2022

CELEBRATING 25 SILVER JUBILEE YEAR

Wetlands International South Asia

Annual Report
2021-2022

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Cover Photo: Chandratal, a high altitude wetland in Lahaul, Himachal Pradesh (Harsh Ganapathi)
Back cover Photo: A frozen view of Khajjiar wetland in Chamba, Himachal Pradesh (Harsh Ganapathi)

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Wetlands International South Asia

ABOUT US

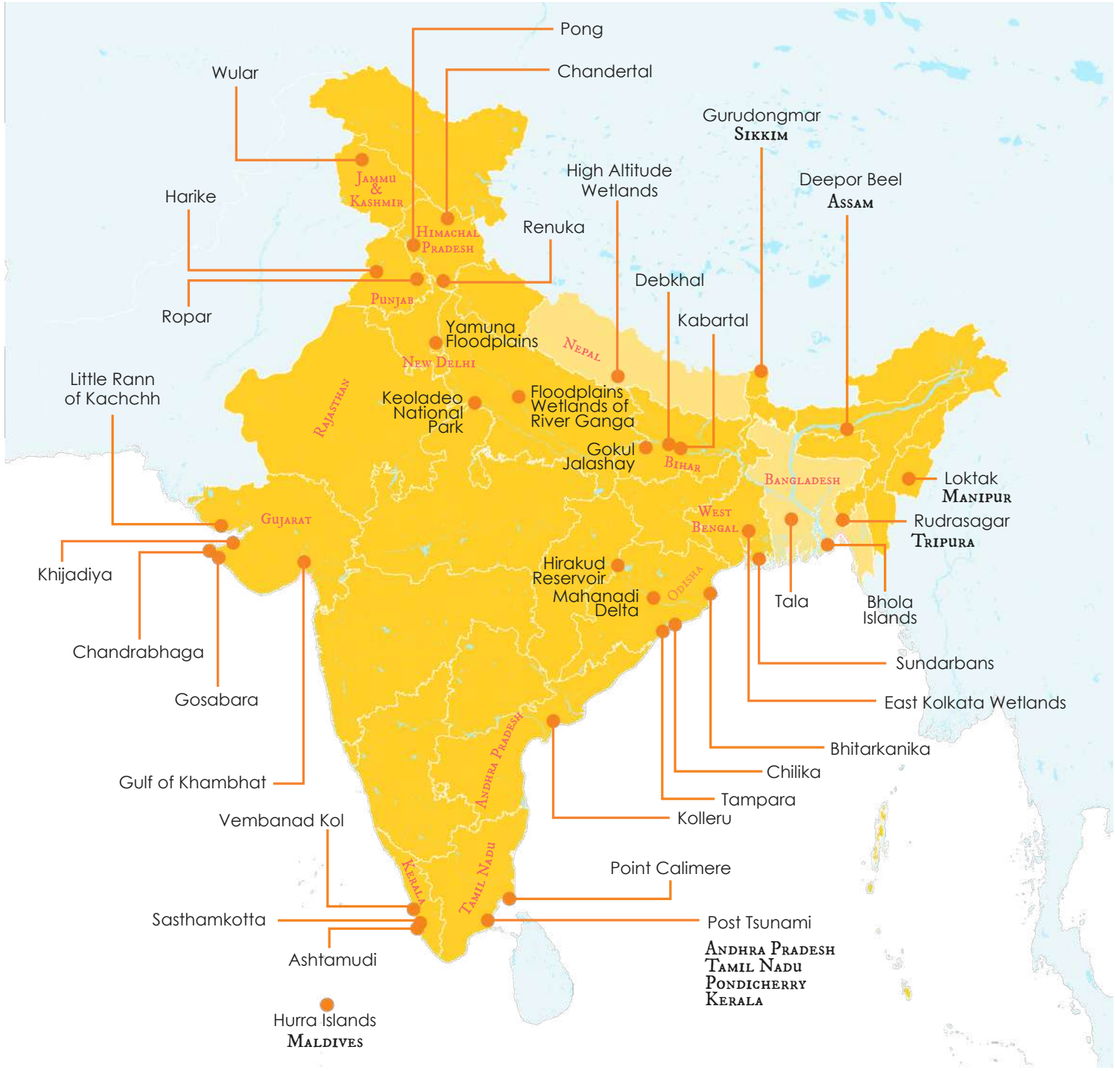
Wetlands International South Asia is a non-government organisation working for sustaining and restoring wetlands, their resources and biodiversity in the South Asia region. Its office in New Delhi (India) was established in 1996 as a part of the Wetlands International network. Wetlands International is a global, independent, non-profit organisation dedicated to the conservation and restoration of wetlands, and presently works in over 100 countries through a network of 20 regional and national offices and expert networks with a Global Office in The Netherlands. Wetlands International is an International Organisation Partner of the Ramsar Convention. In 2005, Wetlands International South Asia was registered under the Societies Registration Act of the Government of India (retaining remit of the South Asia region).

The organisation uses a mix of approaches including technical knowledge, policy dialogue and field demonstrations for addressing various issues related to wetland management To leverage change, we work with national and state governments, knowledge centers, civil society and the private sector, often acting as catalysts to enable joined-up actions. Specific emphasis is placed on the capacity development of wetland managers in applying integrated approaches. A multidisciplinary team within the organization and expert network enable providing evidence-based scientific and technical advice to central and state governments, wetland authorities, and civil society on various aspects of wetland conservation.

Presently, Dr. Sidharth Kaul (former Advisor, Wetlands, Ministry of Environment, Forest and Climate Change) is the President of the Society. Dr. Ajit Pattnaik (former Principal Chief Conservation of Forests, Forest and Environment Department, Government of Odisha) is the Vice President. Dr. J. K. Garg (Director, Tribhuvan College of Environment and Development Sciences - Nalanda University Centre, Neemrana) is the Honorary Treasurer of the Society. Dr. Ritesh Kumar (Director, Wetlands International South Asia) is the ex-officio Secretary of the Society.

The Governing Body comprises the Office Bearers, three members elected by the General Body and Chief Executive Officer, Wetlands International. Dr. C. K. Varshney (Professor Emeritus, Environmental Sciences, Jawaharlal Nehru University), Dr. E. J. James (Professor Emeritus, Karunya University), Dr. Asad Rahmani (former Director, Bombay Natural History Society), Dr. Sara Ahmad (Founder, Living Waters Museum), Dr. Harini Nagendra (Professor, Azim Premji University), and Mr. Pijush Sinha (Board Member, Avendus Finance Private Limited) serve as elected members of the General Body. Ms Jane Madgwick, CEO, Wetlands International represents Wetlands International on the Governing Body.

OUR PRESENCE



FROM THE PRESIDENT

It is a matter of great pride for me to present the Annual Report of Wetlands International South Asia for the year 2022-23 with little more changes to give it an improved look which I hope will be appreciated by all of you. I do hope that readers will give their appropriate inputs from time to time to make our report more thoughtful and educative.

2022 also marks the Silver Jubilee year of our inception. Number of activities were organised by our organisation to highlight our efforts for conserving wetlands in South Asian region. The core group of young people was the focal point. A number of competitions were organised in the form of photography of natural resources, slogan painting and essay competitions, webinars on different environmental themes.The main focus was youth who are our torch bearers for better tomorrow. Our all activities were very well received. Deserving candidates were given prizes by the authorised committees constituted for this purpose. We will be concluding the year long celebration with a final event to be organised in New Delhi.

The year 2021 was marked by the corona pandemic which forced us to work largely online. With waning of the COVID-19 pandemic in India and elsewhere, we have started our field operations and also our meetings in a physical mode which certainly is more vibrant. We reached out to Government of Arunachal Pradesh, offering support for implementation of wetlands conservation programme which resulted in signing a Memorandum of Understanding to this effect. We also had a detailed discussion with the chairman of Loktak Development Authority to ensure that our long standing recommendations for wetland rejuvenation are met. We hope to continue dialogue with State Governments to strengthen wetlands conservation at various levels.

In our unbridled pursuit of development we seem to have ignored the environmental concerns which have resulted in degradation of these fragile ecosystems which are essential for our existence. The millennial city of Gurgaon and the nation's IT hub Bangalore have reeled under floods exhibiting the long term impacts of loss of wetlands and their connecting drainages. It is high time that wetlands are positioned as Nature-based Solutions and integrated in sector plans for disaster risk reduction, urban planning among others. For wetlands conservation, this would require a shift from preventive to curative approach which cannot be done without participation of each individual for saving these wetlands from degradation and disaster.

I take this opportunity to express my sincere thanks to all the stalwarts involved in governance of Wetlands International South Asia for providing fruitful guidance from time to time for promoting visibility of wetland conservation ethos in South Asian Region. With your continued support the organisation is sure to make its mark in the field of wetlands conservation.

Dr. Siddharth Kaul
President

CONTENTS

FROM THE DIRECTOR'S DESK

At the time of writing this report, several parts of Pakistan and India are reeling under floods. The media is awash with stories on how encroachments of wetlands and choking of drainages have been a significant reason for these floods. With extreme events being the new normal, the role of wetlands as landscape buffers is becoming more and more significant. Unfortunately, undoing the damage will be painful, and there are no quick fixes either. The growing awareness of the value of nature-based solutions is also a window of opportunity for us to promote the integration of wetlands in urban planning and disaster risk reduction. Engagement with think tanks, and policy-making bodies in these sectors was a key highlight of our work this year, and we will also deepen these in the coming years.

Recently, there have been several reports of increasing stress on coastal wetlands. The National Decadal Wetland Change Atlas, published by Space Application Center in February 2022, reports that between 2006/7 and 2018/18, the natural coastal wetlands declined from 3.69 million ha to 3.62 million ha. The intertidal mudflats have decreased by a whooping 116,897 ha and salt marshes by 5,647 ha. Mangrove plantation over inter-tidal mudflats is a prominent reason for this loss. With Blue Economy figuring high on the economic development agenda, it is pertinent that the role coastal wetlands play in sustaining the blue economy is brought out at the planning and decision-making levels. We have partnered with UN Environment for a five-year Global Environment Facility-funded initiative on mainstreaming natural capital in planning and decision-making for district-level implementation of Blue Economy plans and programmes.

When we began work 25 years ago, a central premise was that a lack of robust science was preventing actions on wetlands. Our projects, therefore, focused on building a body of practice-oriented wetland management science that could reverse the trends in wetland degradation. This is also reflected in our emphasis on diagnostic approaches for wetland management interventions. However, key learning in 25 years has been that there are more imminent barriers to surmount, that of sectors tending to work in silos and development plans and programmes which do not integrate wetlands in their design and implementation. Therefore, we are engaging with government departments beyond the environment and forests, focusing on state and district levels to stimulate cross-sectoral actions for wetlands conservation.

We are also conscious of quick-fix wetland remediation solutions that are being implemented in various parts of the country. Unless a long-term view of ecological restoration is taken and on-ground interventions backed up with investments in enabling conditions – such as capacity development at various levels and embedding in governance arrangements, these initiatives can fritter in no time. We have identified wetlands rejuvenation as a priority and will be working with the concerned ministries, think tanks and civil society organisations on this aspect.

This Annual Report is a testimony of the hard work put in by the Wetlands International South Asia team and the astute guidance of the Office Bearers, Governing Body and the General Body. We thank our donors and partners for trusting us and joining hands to secure a nature-positive world wherein wetlands, wetlands-dependent species, cultures and livelihoods are secured.

Dr. Ritesh Kumar
Director

LIST OF ABBREVIATIONS

ARC	Above Ramganga Confluence
AWC	Asian Waterbird Census
BD	Biodiversity
BDES	Biodiversity and Ecosystem Services
BMC	Biodiversity Management Committees
BNHS	Bombay Natural History Society
BwN	Building with Nature
CAF	Central Asian Flyway
CAM	Climate Change Adaptation and Mitigation
CBD	Convention on Biological Diversity
CCSM4	Community Climate System Model Version 4
CEPA	Communication, Education, Participation and Awareness
CMS	Convention on Migratory Species
CoP	Conference of Parties
CSO	Civil Society Organisation
DDMA	District Disaster Management Authority
DDMP	District Disaster Management Plan
DRR	Disaster Risk Reduction
ECD	Ecological Character Description
Eco-DRR	Ecosystem based approaches for Disaster Risk Reduction
ES	Ecosystem Services
GBF	Global Biodiversity Framework
GCM	Global Climate Model
GEF	Global Environment Facility
GoHP	Government of Himachal Pradesh
GoI	Government of India
GPDP	Gram Panchayat Development Plan
HadGEM2	Hadley Centre Global Environment Model Version 2
HAW	High Altitude Wetlands
ICEM	International Centre for Environment Management
IISER	Indian Institute of Science Education and Research
IKI	International Climate Initiative
IMWBES	Integrated Management of Wetland Biodiversity & Ecosystem Services
INTACH	Indian National Trust for Art and Cultural Heritage
IPCC	Intergovernmental Panel on Climate Change
IRM	Integrated Risk Management
IUCN	International Union for Conservation of Nature
IWC	International Waterbird Census
MEE	Management Effectiveness Evaluation
METT	Management Effectiveness Tracking Tool
MoEFCC	Ministry of Environment, Forest and Climate Change
MoU	Memorandum of Understanding
NbS	Nature-based Solution
NC	Natural Capital
NCA	Natural Capital Accounting
NCR	National Capital Region
NCT	National Capital Territory
NGO	Non-Government Organisation
NPCA	National Plan for Conservation of Aquatic Ecosystems
PBR	Peoples' Biodiversity Register
PCCF	Principal Chief Conservator of Forest
PRI	Panchayati Raj Institutions
RCP	Regional Climate Projections
RIS	Ramsar Information Sheet
R-METT	Ramsar Management Effectiveness Tracking Tool
RRCEA	Ramsar Regional Centre East Asia
RSIS	Ramsar Site Information Sheet
SAC	Space Applications Centre
SBB	State Biodiversity Board
SEEDS	Sustainable Environment and Ecological Development Society
SOP	Standard Operating Procedure
SWAK	State Wetlands Authority Kerala
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UPSWA	Uttar Pradesh State Wetlands Authority
UT	Union Territory
UTBC	Union Territory Biodiversity Councils
WASH	Water Sanitation and Hygiene
WII	Wildlife Institute of India
WISA	Wetlands International South Asia

2021-2022
YEAR AT A GLANCE

- 2022 marks the Silver Jubilee year of inception of Wetlands International South Asia. The New Delhi office of the organisation was established on June 13, 1996. **To mark the Silver Jubilee year, a series of three public webinars (on the themes of wetlands and climate resilience, future of wetlands in urban spaces and wetlands governance) were organised. Online competitions for youth and children (amateur photography, essay writing, slogan writing and poster making) were organised and managed through a dedicated web portal.** Over 150 entries were received, which were reviewed by expert panels and winning entries were given cash prizes and gratis student memberships.

- **The climate vulnerability assessment of three Ramsar Sites was concluded and risk reduction measures were incorporated within respective management plans.** The climate risk assessment framework has been compiled in the form of a guide for wetland managers to assist consideration of climate risks in wetland management plans.

- Building on the outcomes of site-scale work on Himalayan wetlands, **a landscape-scale ecosystem services assessment in Lahaul-Pangi was initiated.** This assessment will enable incorporation of ecosystem services interdependencies within relevant public and private sector plan, programmes and investments.

- **An inventory of 282 River Ganga floodplain wetlands, located in 27 districts of Uttar Pradesh was completed.** The wetland area in the 10 km buffer region along the river Ganga has declined by 76% during 2000-2020. Conversion of wetlands for forestry and permanent agriculture emerged as the most significant factor of wetland loss. A management plan for conserving 92 wetlands located in the Above Ramganga Confluence basin has been prepared as a response strategy.

- **A management effectiveness tracking framework for Indian wetlands was developed and field tested in five Ramsar Sites.** This will be followed by a larger scale MEE assessment in the coming two years.

- **A meta-analysis of macroplastic pollution in wetlands was completed** and the current state of knowledge compiled through a review of 2993 peer-reviewed publications. The learnings have been compiled in the form of a rapid assessment protocol to enable wetlands managers in assessing the risks posed by macroplastic pollution and incorporate suitable response options.

- **A guidebook on integrating Nature-based Solutions in District Disaster Management Plans was developed in collaboration with the National Institute of Disaster Management.** This guidebook together with handholding workshops with district disaster management officials and stakeholders will support the integration of ecosystems in disaster risk reduction measures.

- **Asian Waterbird Census conducted in January 2022 covered over 900 sites in 15 states. A special count with National Biodiversity Authority was conducted in February 2022**, wherein over 600 Biodiversity Management Committee members and volunteers conducted a census in 142 wetlands.

- **A three-days South Asian training workshop on wetlands and water was conducted with trainees from four South Asian countries.** This was under the aegis of MoU between Wetlands International South Asia and Ramsar Regional Centre East Asia for collaboration on promoting wise use of wetlands in South Asia through capacity development and supporting application of recent scientific and technical advancements in wetlands management.

- **A full sized Global Environment Facility project on 'Mainstreaming Natural Capital Values into Planning and Implementation for Sustainable Blue Economic Growth in Indian Coastal Districts' was prepared** in coordination with the MoEFCC. The 5-year project aims at 'enhancing biodiversity conservation and environmental sustainability of critical coastal landscapes in India by integrating natural capital (NC) and ecosystem services values in District-level blue economy strategy and spatial planning processes, and coastal sector operations. The two landscapes to be taken up under the project are the catchments and the coastal zone of Aghanashini Estuary and its basin in Karnataka and Vembanad-Kol, an estuary-floodplain complex in Kerala.

- **The Governing Body of the society was expanded** by bringing on board three expert members from the fields of water and gender, sustainable urbanisation and financial management. A procurement policy was also adopted, bringing the organisation in line with recent amendments in regulatory frameworks and enhancing transparency and accountability standards. The General Body inducted six new members in line with the membership and networking strategy adopted in the previous year.

- **The staff strength of the Wetlands International South Asia office increased from 17 to 22**, and skillsets on constructed wetlands, wetlands and climate change and spatial modelling were brought on board.

- During the period April 2021 – March 2022, the organization received Rs 47.31 million of which Rs. 41.88 million was on account of project funds received from 7 donor agencies, and the balance, Rs. 5.43 million as interest earned on the reserves. The total expenditure incurred during the year towards various programmatic activities was Rs. 32.86 million. With a surplus of Rs. 14.45 million, **the total reserves at the end of the financial year increased by 14.05%, further contributing to the financial stability of the organization.**

CELEBRATING SILVER JUBILEE YEAR

HIGHLIGHTS

- Wetlands International celebrates 25th year of inception in 2022. The New Delhi office of the organisation was established on June 13, 1996.
- Three Silver Jubilee webinars were organised on seminal themes related to wetlands. These webinars were attended by over 200 people.
- Online competitions for youth and children received 150+ submissions. Winning entries will receive prizes at the Silver Jubilee function being held in September 2022.

Wetlands International South Asia is celebrating its Silver Jubilee year of inception in 2022. The New Delhi office of the organisation was established on June 13, 1996. From a beginning with projects in two wetlands (Loktak in Manipur and Chilika in Odisha) the work now spans 11 Indian states and across Nepal, Bangladesh and Maldives. The organisation has made considerable contributions in the field of wetland management planning, expanding the Ramsar Site network, incorporating wetlands in the development programmes such as disaster risk reduction, capacity development at multiple levels, and strengthening wetland institutions. The silver jubilee year is being celebrated with a number of events to shine a spotlight on the value of wetlands and the role played by Wetlands International South Asia in conservation and wise use.

Silver Jubilee Webinars

As a part of the Silver Jubilee celebration Wetlands International South Asia organised a series of webinars to bring awareness about wetlands conservation and the various challenges in the process.

The first Silver jubilee webinar was held on September 16, 2021 on the topic 'Managing wetlands: addressing the challenges of water security and climate change'. Dr. R. Krishnan (Scientist G, Indian Institute of Tropical Meteorology) cited several evidences from the IPCC Assessment Report 6 on large-scale changes in the water cycle due to climate change and its implications for wetlands conservation. Dr. Matthew McCartney (Research Group Lead, Sustainable Water Infrastructure and Ecosystems, IWMI) stressed on the need to consider wetlands as nature-based solution for addressing the risks of intensifying extreme hydrometeorological events. Prof. C. K. Varshney (Professor Emeritus, Jawaharlal Nehru University) elucidated the diverse ways in which wetlands contributed to the goal of building climate and water-secure societies.

The second webinar of the series was organised on the topic 'The future of wetlands in urban spaces' on October 20, 2021. Prof. Harini Nagendra (Director and Professor, Azim Premji University) showcased the environmental history of wetlands in Bangalore and called for their maintenance as multi-functional systems which allowed traditional usages as well as a focus on recreational and aesthetic values. Mr. Manu Bhatnagar (Principal Director, INTACH) using cases from NCR of Delhi called for the integration of wetlands in urban development plans and programmes.

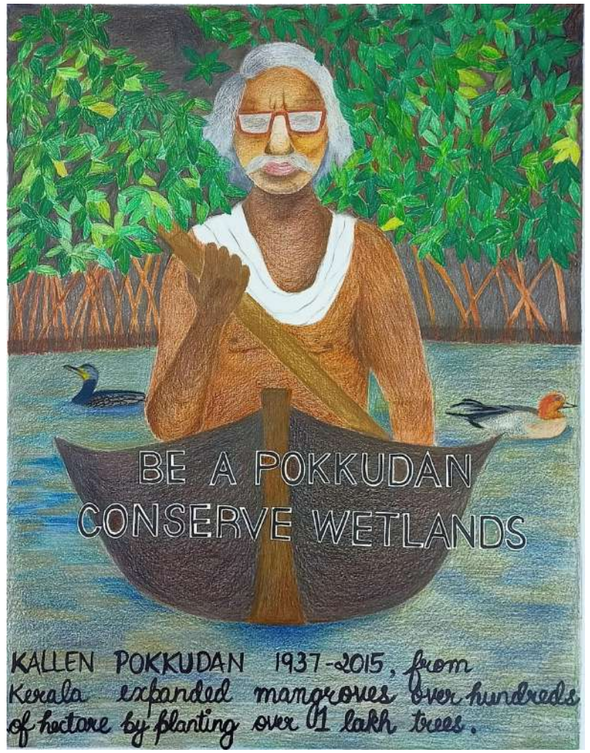
The third Silver Jubilee webinar was held on November 25, 2021 on the topic 'Wetlands Governance: Challenges and Imperatives'. Dr. Ajit Pattnaik (Vice President, Wetlands International

◀ Jury Special prize awarded poster by Yashika Gupta, Ved Vyasa D.A.V. Public School, Delhi.

South Asia and formerly PCCF, Government of Odisha) stressed on the enabling role played by networks and knowledge institutions in implementing evidence-based conservation. Dr. M. K. Ramesh (Professor of Law, National Law School of India University) discussed the legal framework of wetland conservation in India and the ways in which the framework can be mobilised for regulating developmental stress on wetlands.

Competitions for Youth and Children

Recognising the important role played by children and youth in wetlands conservation, four online competitions (amateur photography, essay writing, slogan writing and poster making) were organised to allow children and youth to express their multifaceted understanding and relationships with wetlands. These events were managed through a dedicated website and the entries were judged by an expert panel of members. The competitions were launched on September 1, 2021 and closed on November 15, 2021. Over 150 entries were received on the website.



3rd prize wining entry by Harshita, College of Art, Delhi ▶

"REFRIGERATOR PRESERVES FOOD FOR DAYS, WETLAND PRESERVES NATURE FOR INFINITY"

1st prize winning slogan entry by Aakangkhya Kandali Pathak, D.C.B. Girls' College, Jorhat, Assam

1st prize winning entry by Aahan Arora, Rukmini Devi Public School, Delhi

WETLANDS AND CLIMATE RESILIENCE

HIGHLIGHTS

- Climate risks assessments for three Ramsar Sites completed
- Climate risk reduction measures integrated into three site management plans
- A climate risks assessment framework for wetlands developed for replication in Ramsar Sites and other wetlands

Integration of Climate Risks and Responses in Management Plans of Ramsar Sites

The International Climate Initiative (IKI) funded 'Wetlands Management for Biodiversity and Climate Protection' project, where Wetlands International South Asia is working with the project commissioning agencies, the MoEFCC and GIZ-India, for integrating climate risks in wetlands management planning. This project was launched at Ramsar CoP 13 in 2018, to work in four Ramsar sites across India, namely, Pong and Renuka (in Himachal Pradesh), Bhitarkanika (in Odisha) and Point Calimere (in Tamil Nadu).

From 2019 to 2021 hydrological, ecological and socioeconomic assessments at the four sites were commissioned to establish baselines for management planning and to identify specific risks of adverse change in the site's ecological character. The process of establishing baselines concluded in 2020 and was used as a basis for the description and evaluation of ecological character and institutional arrangements for wetlands management. In 2020, climate vulnerability assessments were also commissioned for the four sites, bringing on board ICEM (International Centre for Environment Management), a technical service centre specialized in conducting such analysis.

The climate vulnerability assessment of the sites was conducted using the Climate Change Adaptation and Mitigation (CAM) method developed by ICEM as a flexible tool and process for climate change adaptation and mitigation planning and implementation tailored specifically to wetlands.

The CAM method has three main phases: (1) impact and vulnerability assessment; (2) adaptation planning (3) implementation and feedback. The IKI team worked with site managers and local stakeholders to apply the CAM method to establish the evidence base for robust and well-informed site management. The projections of precipitation and temperature by 2050s at the Ramsar Sites were modelled against a baseline period of 1960-1990, and using an ensemble mean method of three selected GCMs – CCSM4, HadGEM2-ES and MIROC-ESM for the RCP 8.5 scenario. The climate risks are likely to be mediated from fluxes in precipitation, temperature and extreme events.

Integrating Climate Risks in Management of Renuka Ji Wetland

Renuka Ji is a natural wetland located in the Western Himalayan foothills in the Sirmaur district of Himachal Pradesh. The wetland spanning 20 ha is a designated Ramsar Site and is highly revered as a religious site. Nearly 0.3 million pilgrims visit the wetland during the annual Renuka Ji fair. This spring-fed wetland serves as a habitat for over 400 animal species. The 358 ha catchment is located within the Renuka Ji Wildlife Sanctuary. Erosion from deforested catchment patches and pollution from religious practices are the major threats to this Ramsar site.

Climate scenarios for 2050 indicate that the total precipitation in the region is projected to increase by 13% during the South West monsoon while decreasing by 9% during the North East monsoon. Summer and winter precipitation are projected to decline by 8% and 6% respectively. By 2050, the temperature is projected to increase by 2.1 °C to 3.3 °C with a rise of 3.3 °C in summer, 2.1 °C during monsoon and 2.8 °C in winter. The climate projections indicate higher inundation variability with the risk of intense rainfall during monsoons and prolonged warm and dry winters. This is likely to enhance sediment input into the wetland while warmer temperatures make the wetland prone to spread of invasive macrophytes. In the catchments, the incidents of forest fires are likely to increase. Increased water temperature can affect fishes, particularly Golden Mahseer directly by affecting their physiology, growth and indirectly their behaviour, including spawning patterns. Groundwater resources are likely to be affected as high-intensity rains lead to runoff from the slopes with very little percolation, especially in a degraded, partially deforested catchment. Groundwater levels will tend to fall during droughts and prolonged dry seasons.

A summary of the vulnerability assessment of the six critical assets in the Renuka Ji wetland against a range of projected climate changes is presented in the adjacent matrix.

Threats	Catchment- Surrounding Hillsides					Habitats					Golden Mahseer					Bengal Roofed Turtle					Aquatic grasses					Recreation, tourism				
	Exp	Sen	Imp	Adc	Vul	Exp	Sen	Imp	Adc	Vul	Exp	Sen	Imp	Adc	Vul	Exp	Sen	Imp	Adc	Vul	Exp	Sen	Imp	Adc	Vul	Exp	Sen	Imp	Adc	Vul
Precipitation																														
Increase of rainfall during Monsoon (Jun–Sep)	H	H	H	VL	VH	H	H	H	VL	VH	H	H	H	M	H	VH	VH	VH	VL	VH	H	H	H	L	H	H	H	H	L	H
Decrease of rainfall during dry season (Oct-May)	M	M	M	VL	H	L	M	M	M	M	L	L	L	L	M	H	H	H	L	H	M	M	M	H	M	M	M	M	M	M
Temperature																														
Increase of temperature during Winter (Jan-Feb)	H	H	H	L	H											H	H	H	L	H	H	H	H	L	H	M	M	M	L	M
Increase of temperature during Summer (Mar-May)	H	VH	VH	L	VH	H	H	H	L	H	H	H	H	L	VH	L	L	L	L	M	H	H	H	L	H	L	L	L	H	L
Increase of temperature during Monsoon (Jun-Sept)	M	M	M	M	M	M	M	M	L	M	M	M	M	L	M	M	M	M	L	M	M	M	M	L	M	H	H	H	L	H
Increase of temperature during Post-Monsoon (Oct-Dec)	H	H	H	L	H	H	H	H	L	H	M	M	M	L	M	M	M	M	L	M	H	H	H	L	H	L	L	L	L	L
Extreme events																														
Flash Flooding	VH	VH	VH	VL	VH	H	H	H	VL	VH	H	H	H	L	H	VH	VH	VH	VL	VH	H	H	H	L	H	H	H	H	L	H
Drought	H	H	H	VL	VH	H	H	H	L	H	H	H	H	L	H	H	H	H	VL	VH	H	H	H	L	H	H	H	H	L	H
Fires	VH	VH	VH	VL	VH						H	H	H	L	H															

Note: **Exp** = Exposure, **Sen** = Sensitivity, **Imp** = Impact, **Adc** = Adaptive Capacity, **Vul** = Vulnerability

Scoring code: VH Very High H High M Medium L Low VL Very Low

Summary Vulnerability Assessment matrix for Renuka and its assets

Catchment of Renuka Ji, a Ramsar Site in Himachal Pradesh

Following activities have been included in the management plan in order to reduce the climate risks:

- Addressing siltation risk through forestry measures (afforestation and aided regeneration) and small-scale engineering measures (terracing, vegetated gabions and contour bunding)
- Ensuring perenniality of springs by vegetating their catchments and creating shallow pits to aid recharge
- Putting in place an early warning system for floods and forest fires
- Periodic removal of invasive macrophytes to control their spread
- Securing Mahseer population through breeding hatcheries

Stakeholder workshops are being organised to disseminate the outcomes of climate risk assessments and seek inputs into response measures. The management plans will be formally submitted to Himachal Pradesh State Wetland Authority by late 2022 for implementation support.

Renuka Ji, a Ramsar Site in Himachal Pradesh

Development of Climate Risk Assessment Framework for Wetlands

Under the ambit of the International Climate Initiative (IKI) funded 'Wetlands Management for Biodiversity and Climate Protection' project a guidebook was developed to describe a practical approach to integrate climate change into the management of Ramsar wetland sites in India. The guide is intended for use by the Ramsar Site managers with close involvement of local stakeholders and relevant sector agencies whose actions affect the condition of the sites.

The guide sets out a simple and flexible process with supporting tools which can accommodate varying inputs of scientific evidence and expert judgements as well as a community experience and knowledge. The method provides a disciplined framework for systematically ordering and ranking the many climate change factors, their impacts and adaptation responses. It is best used as a priority-setting process for mainstreaming climate change in site management even in situations of scarce resources and limited information. The process has three main phases– vulnerability assessment, adaptation planning and then adaptation implementation and adjustment as shown below.

These three phases are intended to be integrated with management planning and budgeting cycles. Over time, the aim is to build the vulnerability assessment and adaptation steps and tools into the normal process of review and revision of the Ramsar Site management plans as well as into the various development plans and actions of government and private sector organizations which affect the site. The guidebook is with the publisher at the current stage and will be released at the 14th Conference of Parties meeting of the Ramsar Convention.

CONSERVING HIGH-ALTITUDE HIMALAYAN WETLANDS

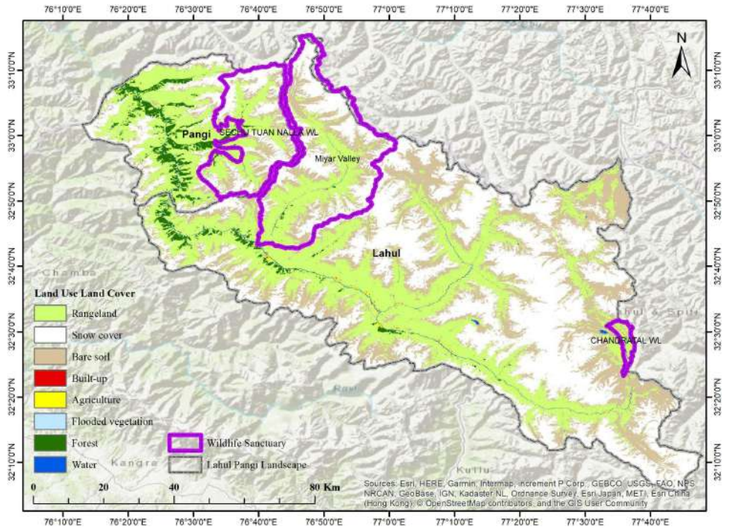
HIGHLIGHTS

- Ecosystem services assessment of Lahaul-Pangi landscape initiated to support integration in relevant public and private sector plans, programmes and investments
- Desktop inventory of peatlands indicate 124 locations having trace for propensity of peat deposition

Assessing Ecosystem Services of Lahaul-Pangi Landscape

The Government of India (GoI) and the United Nations Development Programme (UNDP), with support from the Global Environment Facility, are implementing a programme in the high-altitude Himalayas titled 'SECURE Himalayas - Securing livelihoods, conservation, sustainable use and restoration of high range Himalayan ecosystems', to ensure the conservation of locally and globally significant biodiversity, land and forest resources in the high Himalayan ecosystem while enhancing the lives and livelihoods of local communities. The ambit of the project includes supporting the formulation of integrated management plans for high conservation value High Altitude Wetlands.

During 2019-2021 under the ambit of the SECURE Himalayas project, Wetlands International South Asia, working in collaboration with State Wetland

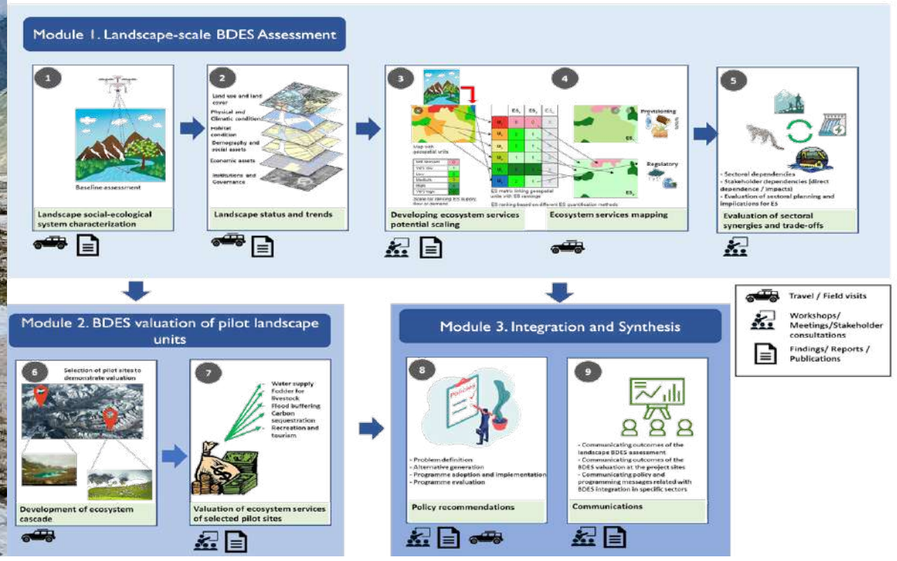


The Lahaul-Pangi landscape in Himachal Pradesh

Authorities formulated Integrated Management Plans for Chandertal (a Ramsar site in Himachal Pradesh) and Gurudongmar wetland complex (Sikkim). A guidebook to enable those responsible for managing HAW in translating the national guidelines and available best practices in setting up and implementing an effective wetland management programme.

Building upon the results, in 2022 Wetlands International South Asia initiated an assessment of ecosystem services of the SECURE Himalayas landscape in Himachal Pradesh. The 2-year project will include an assessment of the status and trends of biodiversity and ecosystem services, identification of priority economic sectors dependent or having an impact on BDES, assessing the cost and benefits of conservation investments and making a business case for integrating ecosystem services values in relevant public and private sector plans, programmes and investments.

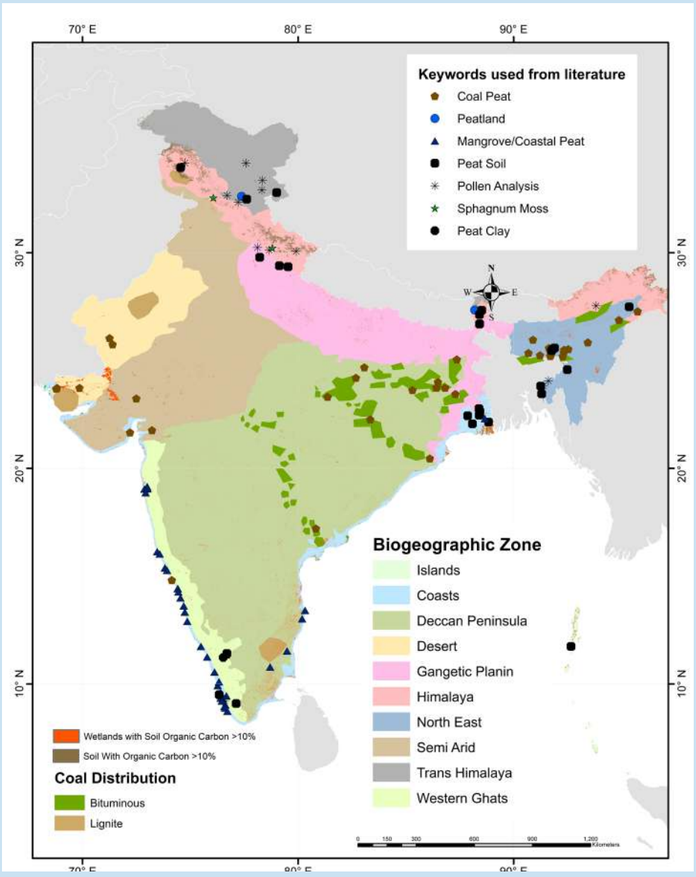
The project will be implemented in three modules. Module 1 will include a landscape-scale BDES assessment. Module 2 will include BDES valuation at three pilot sites (namely, Sechu Tuan Nalla Wildlife Sanctuary, Miyar Valley and Chandratal Wildlife Sanctuary). The third module will include synthesis into specific sector recommendations.



Desktop Inventory of Peatlands

Peatlands, in recent times, have received policy attention for their highly significant role as sinks for carbon, conservation of which can contribute to the climate mitigation goals. Yet, the information on the extent and condition of peatlands in India is very patchy and limited. The India Council of Agricultural Research has assessed that peatlands may extend up to 2.2% of India's geographical area, but this is yet to be translated into a map to enable targeted conservation action.

Wetlands International South Asia aims to establish a robust inventory of peatlands in the country, with the ultimate objective of ensuring their integration in climate change mitigation actions. In 2021-22, a desktop inventory was initiated to collate available evidence of the presence of peatlands. Through scanning published papers and technical reports, 124 locations were identified which have the trace or propensity of peat depositions. Of these, 55 locations are located near the mangroves and coastal areas of the country, 47 sites are identified near the coal deposit regions and 22 sites are traced in the high-altitude regions of India. In the coming year, physical validation of select sites will be done to present a holistic picture of peatland extent in India.



INVENTORYING FLOODPLAIN WETLANDS OF GANGA

HIGHLIGHTS

- Wetland change assessment during 2000-2020 indicates 76% loss in 10 km buffer region around River Ganga. Forestry operations and conversion for agriculture are the most significant drivers of wetland loss.
- 282 wetlands inventoried and information uploaded in electronic database of Uttar Pradesh Forest Department. 115 wetlands prioritised for immediate management interventions.
- Management plan for conserving floodplain wetlands of Above Ramganga Confluence basin prepared and under consideration of Uttar Pradesh State Wetland Authority

In 2018, the National Mission on Clean Ganga of the Jal Shakti Mantralaya sanctioned a technical assistance project titled 'Conserving and Sustainably Managing Gangetic Floodplain Wetlands of Uttar Pradesh'. Wetlands International South Asia was the technical partner to the project coordinated by Uttar Pradesh State Wetland Authority with Uttar Pradesh Forest Department providing implementation support. The project was concluded in 2022.

Completing Inventory of 282 Wetlands

Within the ambit of the UP NMCG project, 282 wetlands across 27 districts were surveyed using a rapid assessment tool. For each wetland, information was generated on wetland settings, description of wetland features, species and habitats, communities present on the shoreline and their dependence on the wetland resources, values and benefits (provisioning services, regulatory services, supporting services and cultural services), major direct and indirect threats and management.

The inventory data of 282 wetlands was uploaded into an electronic database of the Uttar Pradesh Forest Department (upforest.org/wetland.aspx). Brief documents on 282 wetlands were prepared in compliance with the Wetlands (Conservation and Management) Rules, 2017. For each wetland, the inventory information was also used to develop an ecosystem health report card on the basis of nine indicators related to wetland extent, hydrology and catchments, biodiversity, ecosystem services, and governance.

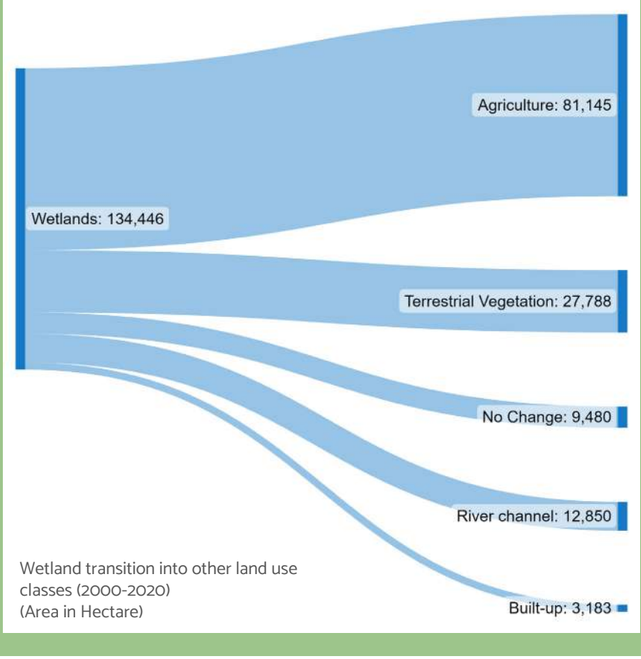
Wetland Change Assessment in Floodplains of the River Ganga

River Ganga flows through 27 districts of Uttar Pradesh, covering a distance of 1180 km, entering the state at Kotwali in Bijnor District and exiting at Dokti in Ballia District. The region falls within three sub-basins, namely (a) Above Ramganga Confluence, (b) Upstream of Gomti Confluence to Muzaffarnagar, and (c) Ghaghara confluence to Gomti confluence. The Ganga River floodplain was delineated using the Global Surface Water data for 1984-2020. Wetlands dynamic in the 10 km buffer was assessed using cloud-free post-monsoon (October) Landsat images (30 m resolution) of 2000 and 2020.

The active floodplain area in 2020 was assessed to span 2,54,400 ha (12% of the 10 km buffer area). In 2020, wetlands spanned 36,506 ha, of which 81% were located within the active floodplain area and the rest outside. Spatially, the wetlands were distributed into three broad classes: a) wetlands located along river channels (riparian wetlands); b) wetlands along irrigation canals (irrigation canal-fed wetlands) and c) wetlands located in isolated shallow depressions (isolated sumplands). In 2020, riparian wetlands constituted a majority of the overall wetland area (81%), followed by isolated sumplands (18.5 %) and the rest were irrigation canal-fed wetlands (0.5%).

The wetland area in the 10 km buffer region along River Ganga has shrunk by 76% during 2000-2020 (from 150,683 ha to 36,506 ha). The maximum reduction was observed in irrigation canal-fed wetlands (99% since 2000) which is attributed to the concretization of the irrigation canals which has subsequently reduced groundwater seepage. It was also observed that the reduction in wetland area outside the active floodplain boundary (89%) was higher as compared to those located inside (65%).

Conversion of wetlands for permanent agriculture and forestry emerged as the most significant factor of wetlands loss in the region. Wetlands International South Asia is working with the UPSWA to put in place guidelines for forestry operations within the 10 km buffer zone so as to ensure that wetlands are not planted upon.



Wetland transition into other land use classes (2000-2020)
(Area in Hectare)

Prioritization of Wetlands Using Hydrogeomorphic Approach

The current classification system used for mapping wetlands by the Space Application Centre (SAC) is based on a three-tier system wherein at the first level, the wetlands are classed into inland and coastal categories, at the second level into natural and human-made categories and at the third level, the wetlands are placed either of the twenty categories (thirteen natural and seven human-made). This classification system is largely based on ecosystem structure attributes (such as hydrology or plant communities) and does not readily lend itself to attribution of ecosystem functions (such as groundwater recharge, flood buffering and water purification). The latter is of critical importance for integrating wetlands in the management of River Ganga.

The project, therefore, adopted a hydrogeomorphic (HGM) classification system to enable focus on wetland functions within a given landscape. The HGM classification of wetlands emphasizes the wetland hydrological processes and functions and their ecological significance within a generalized landscape context. Wetlands were prioritized on the basis of scores generated for threats, and a cumulative score of ecosystem service index and hydrogeomorphic function score. Four distinct categories have been identified: village ponds, urban and peri-urban wetlands, floodplain agriculture wetlands and wetlands within protected areas. From the three sub-basins, 115 wetlands were prioritized as high and moderate priority while 160 wetlands were prioritized as low priority.

Management Plan for Conserving Floodplain Wetlands of Above Ramganga Confluence Basin

The Above Ramganga Confluence (ARC) sub-basin spans 40,471 km^2, encompassing about 3.7% of the Ganga basin area. The 10 km buffer zone on either side of the Ganga river channel falls within 12 districts (Muzaffarnagar, Bijnor, Meerut, Amroha, Hapur, Bulandshahr, Sambhal, Aligarh, Budaun, Kasgang, Shahjahanpur and Farrukhabad) and spans 6,732 km^2.

The wetland area in ARC has shrunk by 81% during 2000-2020 (from 64, 000 ha to 12, 000 ha). The maximum reduction was observed in irrigation canal-fed wetlands (99% since 2000) which may be attributed to the concretization of the irrigation canals which has subsequently reduced groundwater seepage. It was also observed that the reduction in wetland area outside the active floodplain boundary (91%) was higher as compared with those located inside (72%).

The management plan for floodplain wetlands of ARC is designed with an overarching goal of 'conservation and wise use of wetland ecosystems so as to sustain their full range of ecosystem services and biodiversity values including their contribution to River Ganga ecosystem health'. The purpose is to:

a. enhance river ecosystem health
b. enhance water security in the Upper-Ganga basin
c. reduce water-related disaster risks to communities living in and around the wetlands
d. provide livelihood opportunities to local communities based on sustainable use of wetland resources sustain habitats and migration corridors of wetland-dependent species.

The ecological and hydrological connectivity of the floodplain wetlands with River Ganga provides the physical template in which these wetlands evolve and function. At the same time, the wetlands are also conditioned by the land use in the surrounding areas, traditional uses of the wetland, the

cultural and relational linkages that communities have with wetland ecosystems, and the overarching regional developmental planning for different development sectors. Management of these floodplain wetlands is thereby proposed at two levels: a) the interventions at the sub-basin level which are aimed at ensuring that wetlands are embedded in the institutional and governance framework for water, land, and biodiversity management and b) interventions at wetland sites which address the direct drivers of adverse change.

The management plan is currently under review by UPSWA following which it will be presented to the NMCG for funding support.

Waterbirds in Haiderpur, a Ramsar Site in Uttar Pradesh

LOCAL ACTION FOR INTEGRATING WETLANDS IN DEVELOPMENT

HIGHLIGHTS

- In five villages implementation of Eco-DRR measures taken up by Gram Panchayats with resources leveraged from developmental programmes
- A model wetland learning centre set up at Tampara used by 200 students to understand the role of the wetland
- 100 Wetland Mitra imparted training on wetland management
- A full size project proposal on wetlands in sustainable blue economy prepared under Global Environment Facility

Integrating Eco-DRR Actions in Gram Panchayat Plans

Implementation of the Directorate General for International Partnerships, European Commission, UNEP and the Netherlands Red Cross supported 'Upscaling Community Resilience through Ecosystem-based Disaster Risk Reduction (Eco-DRR)' project entered into the third year in 2021-22. Under the project, scalable models of community-based Nature-based Solutions for Disaster Risk Reduction are being designed and implemented in three landscapes in India, namely, Tampara wetland in Ganjam district of Odisha and Kanwar Basin in Begusarai district of Bihar. Learning from the field sites and traditional knowledge of communities, the project envisages mainstreaming Eco-DRR in developmental planning and programmes through policy recommendations and capacity building of key stakeholders.

In Odisha, a community-based participatory wetland management plan for Tampara has been initiated. Eco-DRR measures under the plan have been incorporated in the five Gram Panchayat Development Plans. These annual plans are the guiding documents for the implementation of various socio-economic

A wetland learning centre at Upper Primary School, Kanamana Village, adjoining Tampara wetland, Odisha

schemes like the Mahatma Gandhi National Rural Employment and Odisha Livelihood Mission.

The project is also focussing on youth engagement as a means of bringing behavioural change toward the conservation of wetlands. Wetlands International South Asia and Netcoast (a local NGO) collaborated to establish a Wetlands Learning Center at Upper Primary School, Kanamana Village Panchayat to heighten awareness and interest of school students in Eco-DRR and wetlands conservation. The students are given access to diverse learning and educational material, water testing kits and a 3D model of Tampara basin to learn and understand the role of wetlands in community wellbeing and disaster resilience. Several classroom and field sessions have been organized with over 200 students from neighboring schools as well to foster the engagement of youth and their families in wetlands conservation.

The project also engages with Wetland Mitra, which are conceived as an informal, voluntary and non-statutory network of concerned citizens to foster and promote community engagement in wetland conservation and management efforts.

Wetlands International South Asia with support from the State Wetland Authority in Bihar and Delhi, and partner NGO SEEDS-India undertook training sessions for nearly 50 Wetland Mitras in Delhi and Begusarai district of Bihar during October 2021 and March 2022 respectively. The capacity-building sessions were meant for the individuals who have shown their enthusiasm to contribute to local actions on safeguarding wetlands and their resources and enrolled as Wetland Mitras. The sessions emphasized the need for community engagement in the conservation of degrading wetlands such as Najafgarh & Bhalaswa in Delhi and Kabartal Wetland Complex in Bihar. The roles and responsibilities of Wetland Mitras in identifying pressing issues that need to be addressed for wetland conservations and actions that will be undertaken by them in the first year were also discussed in detail.

The session concluded with a pledge to take up elementary actions in bringing affirmative behaviour among community stakeholders to restore and conserve wetlands and support the wetland managers and authorities in improving the overall ecological health of the wetlands.

A training workshop for wetland mitra at Sanjay Lake, New Delhi

Guidebook on Integrating Nature-based Solutions in District Disaster Plans

During 1970–2019, nearly 86% of disaster events and 98% of damages due to disasters in India were caused by hydrometeorological extreme events. This trend is likely to persist and intensify in the coming times due to climate change and anthropogenic factors such as ecosystem degradation and poor land use planning. There is increasing evidence that ecosystem degradation, such as the rapid loss of natural wetlands, is a significant underlying driver of increasing water-related risks. Consequently, disaster risk reduction (DRR) approaches that incorporate Nature-based Solutions (NbS) have the potential to the support achievement of societal development goals, safeguard human well-being and enhance resilience of ecosystems.

India's National Disaster Management Plan (2019) recommends shifting focus from relief-centric approaches to proactive DRR measures. Adopting locally-relevant NbS is an important part of this transition, and can significantly help in securing development gains, reducing vulnerabilities to future risks, and increasing access to sectoral resources to implement risk reduction measures. The Disaster Management Act, 2005 mandates District Disaster Management Authorities (DDMA), headed by the Collector/ District Magistrate with an elected representative of the local authority as co-chairperson, as the planning, coordinating and implementing body for disaster management at the district level. The DDMA is also entrusted with the preparation of the District Disaster Management Plans (DDMP) in accordance with national and state level guidelines.

Wetlands International South Asia joined hands with the National Institute of Disaster Management (NIDM) to prepare a guidebook for DDMA to integrate NbS in their District Disaster Management Plans (DDMP). In its four sections, the guidebook provides an understanding of water-related risks and their causative factors, concepts of NbS and relevance for addressing water-related risks, steps for integrating NbS in DDMPs and creating an enabling environment for supporting implementation.

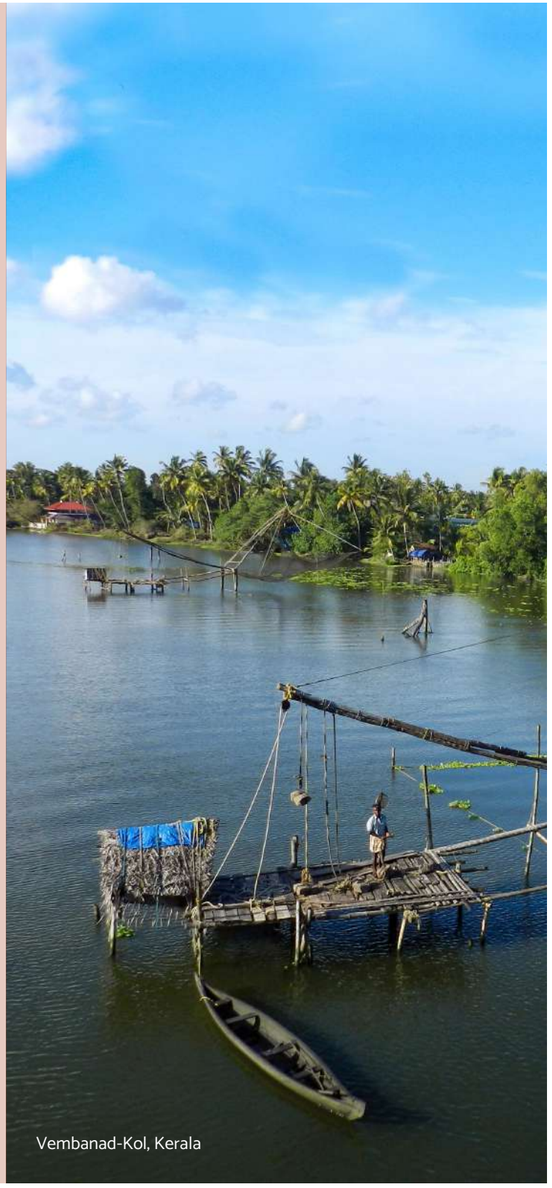
In the coming year, NIDM and Wetlands International South Asia are organizing a series of workshops with the DDMAs to provide handholding support for implementing the recommendations of the guidebook.

GEF Project on Sustainable Blue Economy

Coastal wetlands of India, ranging from intertidal mudflats to vast expanses of mangroves, coral reefs, lagoons, estuaries and deltas are critical natural capital for India's Blue Economy. The coastal ecosystems stand embedded within dense economic and physical infrastructure in the form of three global megacities, 15 major global and 46 feeder ports, 230 industrial centres, and over a fifth of the country's population living within the coastal areas. Yet, these ecosystems are under tremendous stress due to lopsided developmental planning which does not take into account their full range of values in decision making. Over the last decade, the area under natural coastal wetlands has declined by over 73,961 ha.

In 2022, Wetlands International South Asia in coordination with the MoEFCC submitted a project entitled 'Mainstreaming Natural Capital Values into Planning and Implementation for Sustainable Blue Economic Growth in Indian Coastal Districts' (BluNatCap) under the Biodiversity Focal Area with UN Environment Programme (UNEP) as the GEF Agency. The project concept was approved by GEF Secretariat on December 1, 2020, for an estimated grant of 3.04 million USD.

The 5-year BluNatCap project aims at 'enhancing biodiversity conservation and environmental sustainability of critical coastal landscapes in India by integrating natural capital (NC) and ecosystem services values in District-level blue economy strategy and spatial planning processes, and coastal sector operations. The project aims to demonstrate the application of System of Environment-Economic Accounting compliant NCA in two coastal landscapes to enable consideration of sectoral interdependencies (particularly infrastructure development, agriculture, fisheries, and tourism) in plans, programmes and investments. The focus on two coastal landscapes provides the opportunity to instigate beneficial and practical outcomes through the explicit embedding NC, BD and ES values at a district scale, whilst also providing a robust empirical knowledge and learning resource for upscaling to the national level. The two landscapes to be taken up under the project are the catchments and the coastal zone of Aghanashini estuary and its basin in Karnataka (spanning 135,000 ha within the districts of Uttara Kannada and Shimoga) and Vembanad-Kol, an estuary-floodplain complex in Kerala (spanning 1,555,400 ha within the districts of Allapuzha, Idukki, Ernakulam, and parts of Kottayam, Thrissur, Palakkad and Pathanamthitta).



Vembanad-Kol, Kerala

Building with Nature - Asia

Building with Nature Asia, a regional initiative by Wetlands International in collaboration with EcoShape and One Architecture, envisions accelerating climate adaptation by spurring a paradigm shift in water engineering in Asia towards large-scale adoption of Nature-based Solutions. Convening countries will adopt the Building with Nature approach at scale, thereby establishing at least 15 climate-resilient landscapes. By 2030, these will improve resilience for 30 million people in cities and settlements along vulnerable Asian coasts and rivers, support inclusive economic development, and co-benefits for biodiversity and society, for example in the field of fishery and recreation, CO_2 storage and landscape quality.

Building with Nature (BwN) is a design approach to developing Nature-based Solutions for water-related infrastructure such as flood defences, sustainable port development and for the restoration of ecosystems. It supports water infrastructure development by combining ecosystem restoration and infrastructure in an optimal mix, involving a participative planning process amongst government agencies, communities and the private sector.

Wetlands International South Asia has prepared a National level policy review document through a systematic assessment of BwN-aligned policy actions and financing frameworks that support India's national priorities and commitments to meet the broadest environmental, economic, and social goals. This review document lays down the enablers and barriers toward a BwN approach from a policy aspect along with identifying various convergence opportunities for securing funding for the implementations.

Landscape propositions accommodate and visualise context information from a range of sources and centers on the development of design propositions as the key tool for communication, stakeholder buy-in, and project structuring. The development of landscape propositions stimulates action bottom-up to develop sustainable and integrated multifunctional infrastructure at the landscape level. A landscape proposition for the identified pilot site, Tampara, a Ramsar Site in Odisha is being prepared under the initiative - this will be integrated with the wetland management plan to ensure stakeholder buy-in and implementation commitment from ongoing government programmes.

STRENGTHENING WETLANDS MANAGEMENT

HIGHLIGHTS

- Management effectiveness tracking framework applied in five Ramsar Sites on pilot basis
- Integrated management plans for four wetlands initiated
- Compiled a meta-analysis of macroplastic pollution along with rapid risk assesment protocol

Management Effectiveness Tracking

Management effectiveness tracking is a diagnostic tool used by policy and decision-makers and site managers to assess the strengths and weaknesses of management systems and ultimately adapt management to align with changing environments. The GEF IMWBES Project has an objective to 'enhance management effectiveness of wetlands of national and global significance and integration in developmental programming'. Component 1 of the project includes developing a baseline on management effectiveness scores of Ramsar sites and wetland supported for integrated management under NPCA. It is envisaged that the scores can be used for adapting and revising management through the identification of specific management aspects which need attention.

During the year a draft MEE framework for Indian wetlands was developed (using Ramsar Convention's R-METT framework as a basis) and field tested in 5 Ramsar sites (Bhitarkanika, Point Calimere, Harike, Kabartal and Sasthamkotta). A larger scale application of MEE is planned in the coming two years. The outcomes of the evaluation will be used to strengthen site management.

Integrated Wetland Management Planning

One of the three components of the GEF IMWBES project aims at enhancing the capacity for integrated wetland management. Through the use of demonstration sites, Component 3 applies integrated wetland management approaches in three wetlands, namely Kabartal in Bihar, Harike in Punjab and Sasthamkotta in Kerala to facilitate learning and the development of best practices for up-scaling and wider implementation.

In the three sites, ecological character baseline and change since Ramsar Site designation has been completed. Handholding workshops were conducted for the Centre for Studies on Environment and Climate at the Asian Development Research Institute, Patna

which is providing field assistance and coordination with the concerned stakeholders and compiling the Integrated Management Plan of the wetland. Baseline capacity assessment of wetland managers and stakeholders was also completed. This information will be integrated in the final management plans which will be taken up for implementation under the MoEFCC's NPCA scheme in the coming three years.

At the request of MoEFCC, the IMWBES project implementation has included Gokul Jalashay, a floodplain wetland in the Buxar district of Bihar for integrated management.

Gokul Jalashay is an oxbow wetland spanning 125 ha within a catchment of 62,000 ha. The wetland serves as an essential source of water and flood buffer for 36 surrounding villages. Numerous species, especially waterbirds migrating within the Central Asian Flyway, use the wetland as a habitat. Changing hydrological regimes, intensive agriculture within and surrounding the wetland, poaching and sewage discharge are some of the major threats to this wetland.

The first field mission to the wetland was conducted during 7-9 February 2022 wherein the wetland boundary was delineated and primary stakeholders consulted on their views, rights and capacities with respect to wetland management. In the coming year, a detailed integrated management plan based on the evaluation of various wetland features and their governing factors will be prepared and submitted to the MoEFCC and Bihar State Wetland Authority for implementation.

Stakeholder consultation at Gokul Jalashay, an oxbow wetland in Bihar

Plastic Pollution in Wetlands: A Meta-Analysis

Wetlands International South Asia partnered with the UN Environment Programme in the CounterMEASURE II project 'Promotion of action against the marine plastic litter in Asia and the Pacific, understanding the current state of knowledge on wetlands and macroplastics is one of CounterMEASURE II's goals, in order to inform future research and management efforts aimed at reducing macroplastic pollution risks in wetlands. During the year, a meta-analysis on the assessment of macroplastic pollution in wetlands was finalized.

Of the 2,993 peer-reviewed publications analysed, only 91 dealt with the topic of macroplastic pollution in wetlands. Following are the major findings:

- Majority of the research (60%) is focused on wetlands in developed regions of the world despite Asia being the hotspot of plastic pollution and South Asia's transboundary rivers acting as highway for plastic pollution to flow from mountains to the oceans.
- A majority (75%) of the studies have a restricted focus on plastic transport and quantification. Macroplastics were dominant in most inland and coastal wetlands studied.
- Active sampling (involving physical sample collection using nets, trawls and other equipment) and visual observation are the most common methods used for plastic quantification in wetlands.
- Only 29 studies have investigated the impact of plastic pollution on biota with ingestion and entanglement being the most cited observations. The lethal and sub-lethal impacts of macroplastic pollution on different lifeforms in wetlands is yet to receive reserach attention. Similarly, the impact of macroplastic pollution on key ecosystem functions such as hydrological regime regulation have not been investigated in the reviewed studies.

Macroplatic pollution is emerging as one of the most significant stressors on wetlands. The meta-analysis indicates that the current body of knowledge on the impacts of macroplastic pollution on wetlands is fairly limited, especially in terms of impacts on the ability of wetlands to moderate water regimes, improved water quality and provide wetland products. There is also a pressing need for harmonising methods for plastic sample collection and categorisation so that the results from various studies are comparable. The meta-analysis will be published in the form of a peer-reviewed report and journal publication in the coming year.

Hydrological Assessment of Najafgarh Jheel

Najafgarh Jheel, a transboundary wetland shared between Haryana and NCT of Delhi, is a critical natural infrastructure for the region, buffering floods, treating wastewater, recharging groundwater and providing habitat to numerous plant and animal species. The high ornithological value of the wetland is indicated by the presence of 281 bird species, including several threatened ones (such as Egyptian vulture, Sarus Crane, Steppe Eagle, Greater Spotted Eagle, Imperial Eagle) and those migrating along the Central Asian Flyway. The wetland also supports heronries of Darters, Cormorants, Cattle Egrets and Ibises.

Despite being the source of several benefits and sustaining habitats of diverse species, Najafgarh Jheel has been highly fragmented and transformed, used as a waste receptacle, and infested with invasive species. The Sahibi River, to which Najafgarh Jheel was the natural floodplain, has been converted virtually into a drain. The decimation of wetlands has exposed the neighbouring settlements in Haryana and NCT of Delhi to high risks of pluvial flooding and reduced groundwater levels. Recent constructions within the wetlands, while impeding natural wetland functions, are precarious owing to high seismicity and liquefaction within the region.

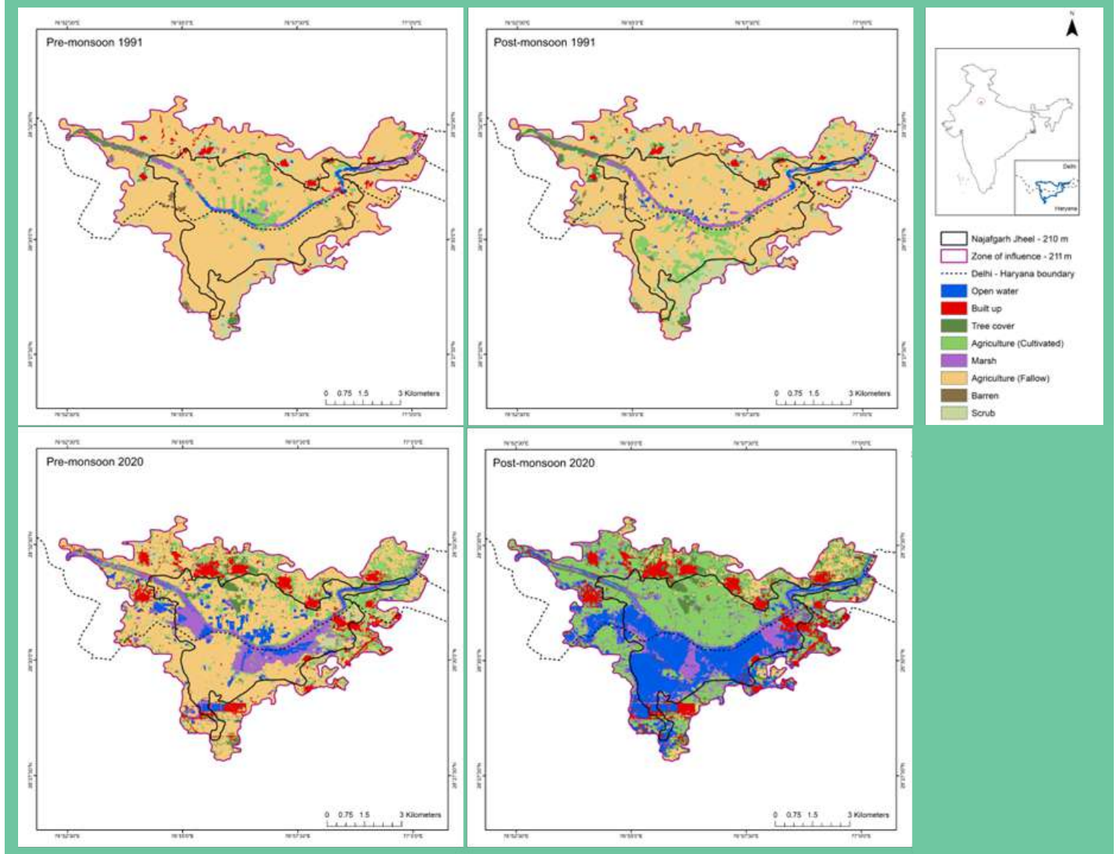
In 2020, as a part of a committee constituted by the Wetlands Authority of NCT of Delhi, Wetlands International South Asia developed a framework Environment Management Plan for the conservation of Najafgarh Jheel. The plan, however, used very limited data owing to time and resource constraints. Najafgarh jheel was identified as a priority wetland within Wetlands International South Asia annual plan to pursue integration in urban planning. In the current year work on hydrological regimes assessments were further developed.

A systematic land use and land cover change assessment for the jheel area for 1991-2021 was carried out using satellite imageries from LANDSAT 5, 7 and Sentinel-2. The area under post-monsoon inundation has increased by 21%, built-up area by 9%, whereas agriculture has reduced by 30%. The analysis indicates that the rapid shrinkage of the wetland witnessed till the early 1990s has largely stabilised although the increase in built-up area is significantly altering the local hydrology.

Groundwater simulations were carried out using MODFLOW to understand the impact of the change in land use and land cover from 2000 – 2020 on the recharge rate and groundwater levels in the region. The simulations show that the presence of the wetland has helped maintain the groundwater levels closer to the surface around the wetland even with high volume pumping wells in Gurgaon city.

The work in the current year will focus on assessing the flood buffering capacity with respect to runoff generated in Gurgaon and adjoining regions of the wetland catchment. This analysis will be used as a basis of working with Wetland Authorities of NCT of Delhi and Haryana to implement measures for the conservation of this transboundary wetland.

Najafgarh Jheel, a trans boundary wetland between Delhi and Haryana



Landuse and landcover change in Najafgarh Jheel from 1991-2020

Support to State Governments

Wetlands International South Asia has been appointed as a member of the technical committees constituted by the State Governments of Bihar, Uttar Pradesh, Delhi and Madhya Pradesh. During the year, the following major decisions were made in these committees:

- Madhya Pradesh – Notification of Bhoj Wetlands under Wetlands (Conservation and Management) Rules, 2017 approved; Seven additional sites identified for notification
- NCT of Delhi – An inventory of 1,040 wetlands was initiated and the brief documents are at various stages of finalisation. Draft notifications of 4 wetlands have been completed.
- Bihar – Priority wetlands for notification and management listed. Management planning for these wetlands has been initiated.
- Uttar Pradesh – Issues related to the functioning of the Wetlands Authority were discussed, and modalities for financial operations were agreed.
- Himachal Pradesh - The HPSWA constituted an expert committee to review the implementation and effectiveness of activities undertaken under their Wetlands Conservation Programme at Pong Dam, Khajjiar and Rewalsar wetlands. Field visits were done during January 07-12, 2022, and specific recommendations for strengthening management implementation were made.

Director, Wetlands International South Asia was appointed as a committee member to draft an environment management plan for the restoration of Najafgarh Jheel. The plan, drafted in collaboration with INTACH, BNHS and Center for Environment Management of Degraded Ecosystems (CEMDE), was endorsed by the Delhi Government and submitted to MoEFCC. At the direction of the National Green Tribunal, an Inter-Ministerial Group has been constituted for final notification. The data and analysis of historical images done by Wetlands International South Asia have been submitted to the group.

Union Minister, Environment and Forest, Mr. Bhupender Yadav convened a meeting on Loktak in Imphal on January 3, 2022. Director made a presentation on management plan implementation. Recommendations regarding overhauling monitoring and governance arrangements, implementation of water allocation plan and constitution of the Technical Advisory Committee have been taken up for implementation.

ENGAGEMENT WITH CONVENTIONS

Expanding India's Ramsar Site Network

Wetlands International South Asia has been designated as a CEPA NGO partner by MoEFCC to support the implementation of the Ramsar Convention.

A policy decision has been made by the MoEFCC to expand the network of Ramsar Sites to 75 wetlands, coinciding with India's 75th year of Independence. Under the aegis of the GEF IMWBES project, Wetlands International South Asia provided support to the compilation and submission of the Ramsar Information Sheets of seven wetlands, that were declared as Ramsar Sites on World Wetlands Day 2022, namely, Thol Lake Wildlife Sanctuary, Wadhvana Wetland, Khijadia Wildlife Sanctuary, Haiderpur Wetland, Bhindawas Wildlife Sanctuary, Sultanpur National Park, Bakhira Wildlife Sanctuary. The project also supported documentation of 26 additional wetlands of international importance thereby expanding the Indian network of Ramsar sites to 75 sites spanning 1.32 million ha (~8% of the known wetland regime). An updated factbook of these 75 sites was also prepared. Wetlands International South Asia shall continue working with the MoEFCC, State Wetland Authorities and other stakeholders to strengthen the management of Ramsar Sites so that the ultimate objective of achieving wetlands wise use is realized.

Positioning Wetlands in Global Biodiversity Framework

In 2021, the Secretariat of the UN Convention on Biological Diversity (CBD) has released the first draft of a new Global Biodiversity Framework (GBF), to guide actions worldwide through 2030, to preserve and protect nature and its essential services to people. The Framework comprises 21 targets and 10 'milestones' proposed for 2030, en route 'living in harmony with nature' by 2050.

Wetlands, despite being crucial for meeting the biodiversity goals and being hotspots of species loss, have failed to figure in the GBF.

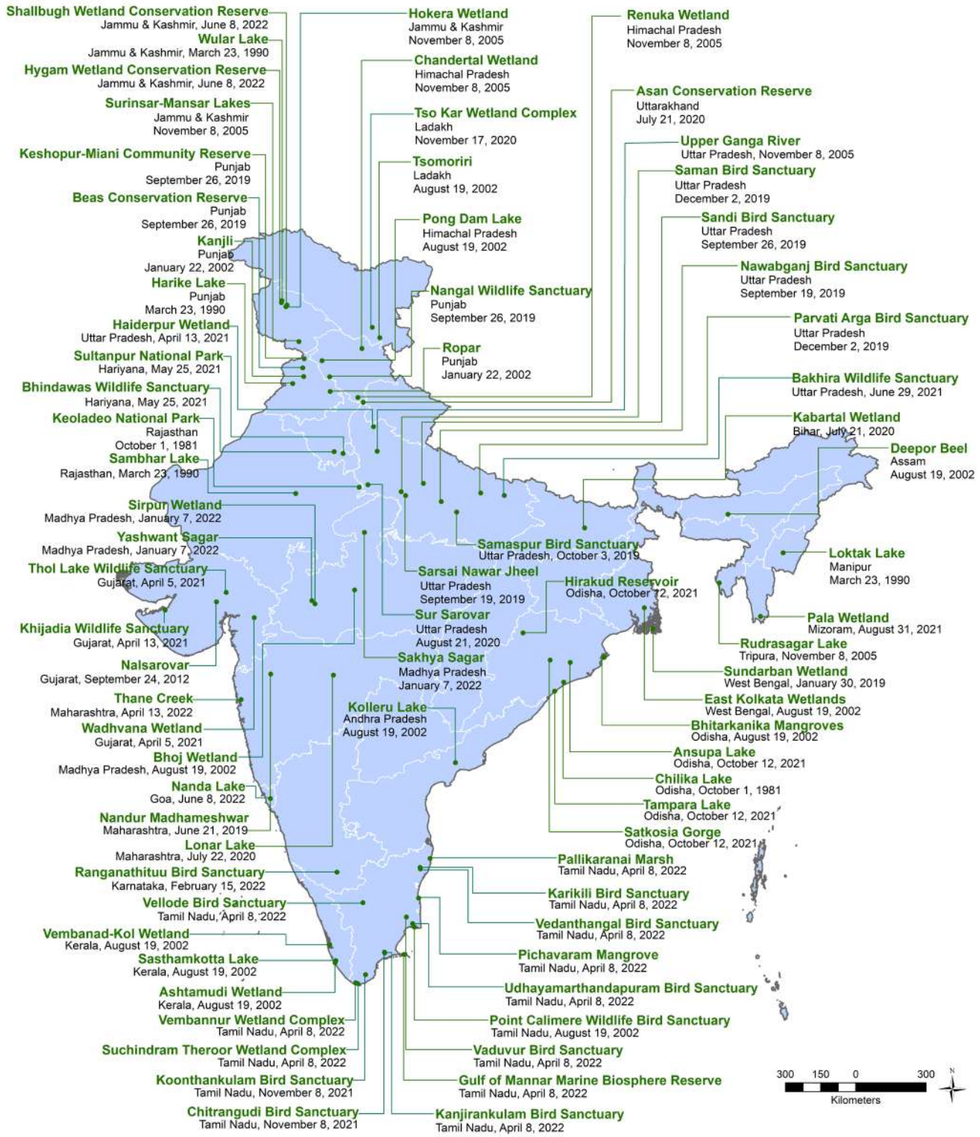
Wetlands International South Asia worked with the Wetlands International network to draft specific wetlands targets which could be considered within the GBF to adequately address the ongoing wetlands loss and degradation.

Supporting Implementation of India's National Action Plan on Conservation of Migratory Species

Wetlands International South Asia collaborated with the MoEFCC and Wildlife Institute of India in organizing an online meeting of the Central Asian Flyway Range Countries to strengthen the implementation of Central Asian Flyway Resolution adopted at the 13th Conference of Parties Meeting of the Convention on Migratory Species. The online meeting held on October 6-7, 2021 was attended by nearly 100 participants representing 30 flyway range countries, experts and international and national NGOs working on the issues of flyways conservation.

Wetlands International South Asia, as a part of a committee constituted by the Ministry, assisted in developing an institutional mechanism for hosting the Central Asian Flyway Secretariat in India.

RAMSAR SITES OF INDIA



CITIZEN SCIENCE FOR WATERBIRDS

HIGHLIGHTS

- Mid-winter Asian Waterbird Census conducted in over 900 sites
- In collaboration with National Biodiversity Authority, a special waterbird count in 142 wetlands involving 600 Biodiversity Management Committee members conducted

Asian Waterbird Census 2022

The Asian Waterbird Census (AWC), a citizen science initiative, is jointly coordinated by the Bombay Natural History Society (BNHS) and Wetlands International South Asia in India. It fosters the participation of local conservation enthusiasts in monitoring waterbird diversity and wetland conditions.
The 2022 census was conducted during January-February 2022. Over 900 wetlands were covered in this census.

States	Number of sites
Arunachal Pradesh	7
Andaman & Nicobar islands	90
Andhra Pradesh	42
Assam	18
Bihar	19
Chhatisgarh	42
Delhi NCT	6
Gujarat	65
Haryana	2
Jharkhand	1
Karnataka	85
Kerala	144
Maharashtra	65
Meghalaya	1
Mizoram	2
Madhya Pradesh	43
Odisha	50
Pondicherry	17
Punjab	1
Rajasthan	4
Sikkim	3
Tamil Nadu	177
Telangana	32
Tripura	8
Uttarakhand	4
Uttar Pradesh	10
West Bengal	31

Collaboration with National Biodiversity Authority

In order to institutionalize waterbird monitoring in wetlands across the country and beyond the sites designated as protected areas, the AWC network partnered with the National Biodiversity Authority (NBA), a nodal statutory organization on matters relating to the conservation of biodiversity, sustainable use of its components and equitable sharing of the benefits. The AWC network at the national and state-level collaborated with the State Biodiversity Boards (SBB), Union Territory Biodiversity Councils (UTBC) and panchayat level Biodiversity Management Committees (BMC) to promote the participation of their members in wetland conservation and waterbird monitoring, and use the census to strengthen People Biodiversity Registers (PBR) as mandated under section 41(1) of National Biodiversity Act (2002).

A virtual training programme on the Asian Waterbird Census (AWC) for representatives of SBBs and UTBCs was organized by the National Biodiversity Authority, Wetland International South Asia and BNHS on 21st and 25th January 2022. The workshops were attended by over 300 participants representing 28 SBBs and 8 UTBCs.

A joint AWC under the guidance of AWC coordinators and SBB-UTBC officials was conducted in 142 wetlands of nineteen states and union territories. Over 600 BMC members and volunteers representing 112 organisations participated in the mid-winter waterbird counts. During the census, 1,22,588 waterbirds of 179 species were sighted. The census also reported several IUCN red-listed threatened species such as Baer's Pochard, Common Pochard and Lesser Adjutant, underlining its significance as an important biodiversity and habitat monitoring tool.

AWC volunteers in Gaya, Bihar

CAPACITY DEVELOPMENT

HIGHLIGHTS

- South Asia regional training workshop on wetland and water with representatives from four South Asian countries
- Capacity and training needs assessment of wetland authorities to identify priority training topics and preferred modes of training delivery

Capacity and Training Needs Assessment of Wetlands Authorities

As a foundational step toward establishing a structured national capacity development programme for integrated management of wetlands, a capacity and training needs assessment was conducted under the GEF IMWBES project. The survey was conducted electronically and responded by 17 states and UTs.

Preparation of integrated management plans, delineating zone of influence, managing wetland biodiversity and habitats, integrating climate risks in wetland management, and mobilizing finance for wetlands conservation were indicated as priority training topics. Physical and in-field training workshops are among the most preferred modes of training delivery.

South Asia Regional Training Workshop on Wetlands and Water Management

A three-day South Asian Regional Training Workshop on Wetlands and Water was co-hosted by Regional Ramsar Centre East Asia (RRC-EA) and Wetlands International South Asia from 9th to 11th November 2021 on a virtual platform. The training programme had representatives from Bangladesh, Bhutan, India and Sri Lanka along with expert speakers from worldwide.

The training workshop was held under the aegis of MoU between Wetlands International South Asia and Ramsar Regional Centre for East Asia for collaboration on promoting the wise use of wetlands in South Asia through capacity development and supporting the application of recent scientific and technical advancements in wetlands management.

Day 1 began with an introduction to concepts and approaches to integrated wetlands and water management. Participants from India and Sri Lanka also shared their views on the management and challenges of wetlands; Bhoj Wetland in India and Ramsar Sites in Sri Lanka.

Day 2 kicked off with a session on tools and approaches that emphasised the integration of catchment level planning with a focus on nature-based solutions and green engineering approaches as a hybrid of hard and soft infrastructure to enhance the resilience of communities. The participants from Bangladesh and Sri Lanka shared their reflections on the use of integration tools and the need of creating an enabling environment for Sundarbans and Beddagana Wetland Park respectively.

Day 3 held sessions on governance for wetlands and water management, wherein monitoring hydrological regimes of wetlands and the role of wetlands as nature-based solutions for water management and challenges with implementation in Indonesia were covered. Participants from Bangladesh shared their experiences in governing and managing the Tanguar Haor Ramsar Site emphasizing the challenges and complexities associated with the same.

The concluding remarks invited reflections from participants around site management, science and knowledge base, and governance and policy with respect to water and wetlands management. The workshop ended with a way forward to conducting such training sessions in the future on different wetland concepts to bring forth a collaborative effort to manage Ramsar Sites in South Asia.

Development of a Protocol for Rapid Assessment of Plastic Pollution Risks In Inland Wetlands

During 2021-2022 under the ambit of the CounterMEASURE II project 'Promotion of action against marine plastic litter in Asia and the Pacific', Wetlands International South Asia, in collaboration with the UN Environment Programme, developed a protocol for rapid assessment of macroplastic pollution risks in inland wetlands. The protocol has the following three steps:

1. Stressor identification and characterization – This step focuses on obtaining and integrating information on the wetland and its catchment, sources of plastic pollution, and types of plastics affecting the wetland ecosystem.

2. Risk identification and assessment – This step evaluates the likely extent of adverse changes or impacts on the wetland. The data for wetland ecological character description (ECD) is derived from field visits, existing literature, and the Ramsar Site Information Sheet (RSIS) of the wetland. From the ECD, a prioritized list of wetland features is prepared based on set criteria, which include ecological, social, and institutional factors.

3. Risk management – This is the final decision-making process and uses the information obtained from the risk identification and assessment processes in the step above to attempt to minimize risks without compromising wetlands services and/or values. Risk management for addressing macroplastics relies on both reactive and proactive measures.

The protocol was pilot tested in Chahdwala, a small riverine wetland of 4 ha in Uttar Pradesh's Bijnor district. The peer-reviewed protocol will be published in the current year and incorporated as a separate module within the capacity development programmes for wetland managers and stakeholders.

COMMUNICATIONS AND OUTREACH

Celebrating World Wetlands Day

Marking the first World Wetlands Day since official recognition at the United Nations, Wetlands International South Asia celebrated the global event in the form of a public webinar on the theme 'Wetlands Action for People and Nature'. The webinar was attended by participants from all across India and abroad and was also live-streamed.

World Wetlands Day is celebrated annually to commemorate the adoption of the Ramsar Convention on Wetlands of International Importance on February 2nd, 1971 in the Iranian city of Ramsar. 2022 marks the 50th year of the adoption of the Convention.

Padma Bhushan Dr. Bindeshwar Pathak, Founder, Sulabh International Social Service Organisation graced the occasion as the Chief Guest while Prof. Robert Costanza, Professor of Ecological Economics, Institute for Global Prosperity, University College London, delivered the special address. Dr. Shailesh Nayak, Director, National Institute of Advanced Studies, Indian Institute of Science was the Guest of Honour. Dr. Ritesh Kumar, Director, Wetlands International South Asia moderated the event.

The following were the key takeaways from the discussions;

- There is an urgent need to upscale investment of financial, human and political capital to the cause of restoration of degraded wetlands.
- A dedicated social mobilization process is required for bringing individuals and society on board to conserve wetlands.
- Ecosystem service values of wetlands need to be assessed to support informed decision-making at various levels. The conventional economic estimates insufficiently captured ecosystem services and natural capital inter-dependencies, and thereby did not give the right cues to the market for internalizing environmental stresses.
- Knowledge gaps pertaining to wetlands and climate risks needs to be addressed on priority to ensure the integration of wetlands in climate response actions. There is a pertinent need for setting robust monitoring systems for assessing climate risks for wetlands.

Sarovar

Wetlands International South Asia publishes a newsletter Sarovar with a focus on seminal themes related to wetlands management in South Asia. In February 2022, Volume 8 of the newsletter on the theme Wetlands and Water Management was published and released at the World Wetlands Day seminar. The volume contains 9 articles on the theme written by international and national experts.

The newsletter is available on the Wetlands International South Asia website. Over 300 print copies were also mailed to State Wetland Authorities, central government ministries, wetland site managers and CSOs.

Bringing Wetlands to School Children and Teachers

Wetlands International South Asia has been actively engaging with schools as a knowledge partner and supporting teachers with online resources on wetlands. Over 2,000 students have been educated on wetlands, their importance and the need for conservation through interactive online sessions. A training workshop for teachers on wetlands conservation was also organized in collaboration with the Wetland Authority of Delhi. The objective of the training was to equip teachers with ideas, activities and knowledge to introduce wetlands in classroom discussions. In the online training concepts and ideas around wetlands were presented to aid teachers in mainstreaming wetland education in the school syllabus.

GOVERNANCE

HIGHLIGHTS

- Governing Body expanded with induction of three experts with specialisation in water and gender, sustainable urbanisation and investment banking
- General Body approved Annual Report and Audited Accounts in their annual meeting of September 2021
- General Body expanded with inclusion of six new members

Wetlands International South Asia is registered as a Non-Government Organization under the Societies Registration Act of the Government of India. The Society is governed under a three-tier structure. The strategic directions and policies of the organization are set by a General Body which comprises eminent experts and conservation planners. The overall management of the society is vested in its Governing Body. The Office Bearers, comprising the President, Vice President, Treasurer and Secretary maintain oversight of the implementation of various decisions and programme operations. The Director, appointed by the Governing Body, serves as the principal institutional representative of Wetlands International South Asia and responsible for implementing the strategy and activities of the organization.

Annual General Body Meeting

The 14th Annual Meeting of the General Body was held on September 29, 2021 virtually and attended by 17 members (and 10 requests for leave of absence). The annual report and audited financial statements for the period April 2019 – March 2020 were adopted.

Induction of New Members in Governing Body

In the 13th Annual General Body Meeting, a decision to expand the membership of Governing Body was taken to enhance the diversity of skillsets, gender and age. Following three members were inducted during the year:

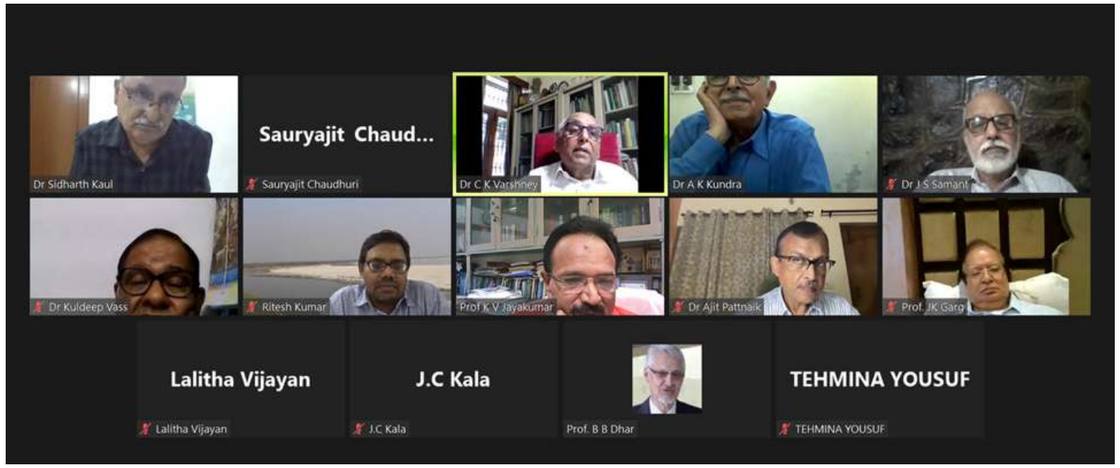
Dr. Sara Ahmad (Founder, Living Waters Museum; and Adjunct Professor, Centre for Water Research, Department of Humanities and Social Sciences, IISER-Pune)

A PhD in Environmental Sociology and an MPhil in International Relations from Cambridge University (England), Dr. Sara was the senior program specialist with International Development Research Centre's agriculture and environment programme. She has worked on the political economy of water in India for over two decades with various non-governmental organisations on communities vulnerable to drought, flood, and coastal storms. She was also the Chair of the International Gender and Water Alliance, and was a part of the steering committee of the forum for policy dialogue on water conflicts in India.

Professor Harini Nagendra (Director of Research Center at the Azim Premji University; and Lead, University's Center for Climate Change and Sustainability)

Professor Harini Nagendra is an ecologist and Professor of Sustainability. Over the past 25 years, she has been at the leading edge of research examining conservation in forests and cities of South Asia from the perspective of both landscape ecology and social justice. For her interdisciplinary research and practice, she has received a number of awards including the 2009 Cozzarelli Prize from the US National Academy of Sciences, the 2013 Elinor Ostrom Senior Scholar award, and the 2017 Clarivate Web of Science award. Her publications include the books "Nature in the City: Bengaluru in the Past, Present and Future" (Oxford University Press, 2016) and "Cities and Canopies: The Tree Book of Indian Cities" (Penguin, 2019, with Seema Mundoli) as well as recent papers in Nature, Nature Sustainability, and Science.

Harini Nagendra writes a monthly column 'The Green Goblin' in the Deccan Herald newspaper, and is a well-known public speaker and writer on issues of urban sustainability in India. Professor Nagendra has been a Lead Author on the IPCC Assessment Report 5 report, and a past Science Committee member of DIVERSITAS and the Global Land Programme. She engages with international science and policy



through her involvement as a Steering Committee member of the Future Earth Programme for Ecosystem Change and Society, and the Future Earth Urban Knowledge Advisory Network.

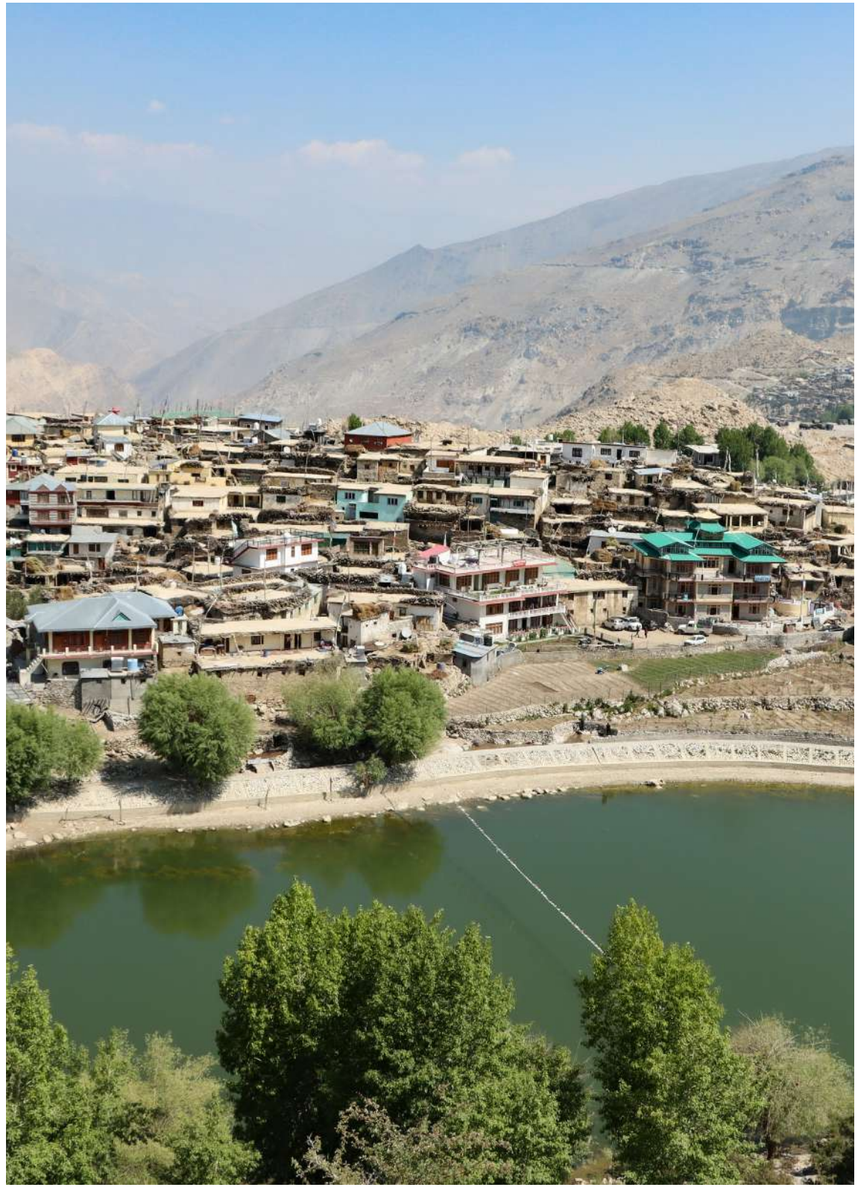
Mr. Pijush Sinha (Investment Banker and Social Entrepreneur)
Pijush Sinha is a financial sector expert. An alumnus of the Indian Institute of Management – Lucknow, Pijush helped Avendus on organizational systems including business strategy, corporate development, Human Resources and Finance, and created institutionalized systems and culture to enable Avendus to become a high-growth organization built around meritocracy and orientation to excellence. He has led the Outsourcing investment banking practice of Avendus Capital and was responsible for the P&L and growth of the same. He originated and executed M&A and financing transactions in the Outsourcing and Technology industries, successfully completed 20+ transactions valued at US$ 500Mn+. Pijush also ran the Avendus-Akanksha mentorship program, enabling children to get a perspective of life beyond their regular education.

Meetings of Governing Body

The Governing Body met twice to consider management issues arising from the decisions of the General Body as well as from the implementation of technical programmes. The twentieth meeting of the Governing Body was held on April 26, 2021 virtually. The procurement policy of the organization was approved. The Annual Plan for 2021 was also discussed and approved. The twenty-first meeting of the Governing Body was held on September 23, 2021 virtually wherein the Governing Body approved the annual report and audited financial statements for presentation at the Annual General Body Meeting. The Silver Jubilee Year Celebrations were also reviewed and suggestions were given to enhance outreach and impact.

Meetings of Office Bearers

The Office Bearers met 6 times during April 2021 – March 2022 to assess the implementation of decisions taken in various meetings of the Society, review technical programmes and prepare agendas for the meetings of Governing Body and the General Body.



Meeting of Nominated Members

A meeting of Nominated Members was held on April 5, 2022 virtually to get their feedback on ways to make the wetland conservation programme more effective and meaningful. The members were apprised of significant work done during the year and a review of the technical programmes along with the conservation of small wetlands was discussed and reviewed.

New General Body Members

In 2021, the General Body approved membership and networking strategy so as to allow the organization to widen its geographical presence, engage with diverse stakeholder groups and gain access to additional capacities and skill sets.

Following were inducted to the General Body during 2021-22;

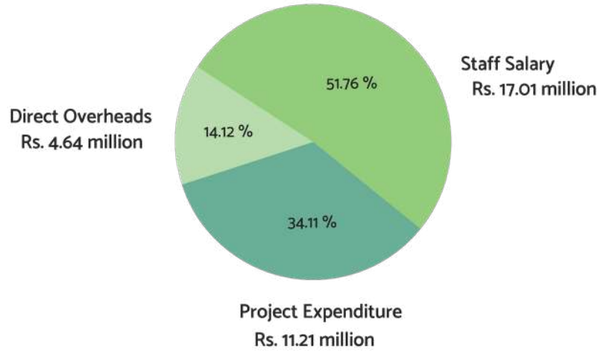
- Dr. Sara Ahmed, Founder, Living Waters Museum (Member, Governing Body)
- Dr. Harini Nagendra, Professor, Azim Premji University (Member, Governing Body)
- Mr. Pijush Sinha, Board Member, Avendus Finance Private Limited
- Dr. Suresh Chandra Gairola, Indian Forest Service (IFS) (Retired); Maharashtra Cadre
- Mr. Raghavendra Sesandra Nanjundappa, Staff Software Engineer, Informatica
- Dr. Manoj P. Samuel, Executive Director, KSCSTE-Centre for Water Resources Development and Management (CWRDM)

ACCOUNTS AND AUDIT REPORT

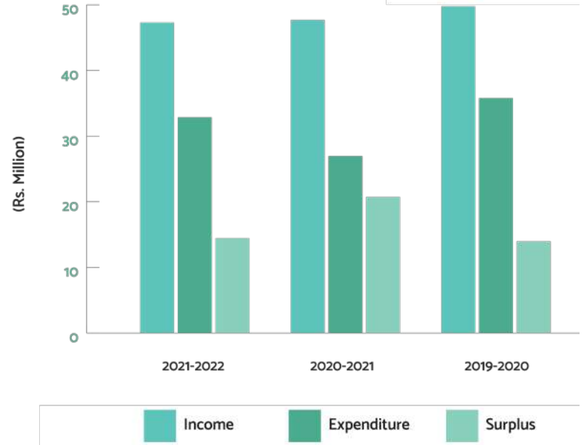
During the period April 2021 – March 2022, a total income of Rs. 47.31 million was received. Of this, Rs. 41.88 million was on account of project funds received from 8 donor agencies, and the balance, Rs. 5.43 million as interest earned on the reserves. Funds received from Wetlands International – Head Quarters for implementation of Upscaling Eco-DRR India Program project was the major source (34 %) during the year.

The total expenditure incurred during the year towards various programmatic activities was Rs. 32.86 million. Direct overheads stood at Rs. 4.64 million, forming 14.13 % of total expenditure. Project expenses were Rs. 11.21 million, including Rs. 17.01 million towards staff salary. On a net, a surplus of Rs. 14.45 million was accrued. The total reserves at the end of the financial year stood at Rs. 102.82 million, which is an increase of Rs. 18.06 million over the last year. Overall, the expenses made under projects were fully covered by project incomes. Similarly, the overheads were also well covered by the incomes accrued under staff time

TOTAL EXPENDITURE (APRIL 2021 - MARCH 2022) RS. 32.86 MILLION



INCOME, EXPENDITURE AND SURPLUS (RS. MILLION)



Balance Sheet

All figures in Rupees

PARTICULARS		2021-2022	2020-2021	2019-2020
SOURCE OF FUNDS				
CAPITAL ACCOUNT		1,410,796	1,410,796	1,410,796
GENERAL RESERVE				
	Opening Balance	84,761,088	70,775,308	54,639,371
	Add Transfer during the year	18,063,528	13,985,780	16,135,937
	Closing Balance	102,824,616	84,761,088	70,775,308
INCOME & EXPENDITURE ACCOUNT				
	Opening Balance	24,967,649	18,216,406	20,366,562
	Add Surplus during the year	14,450,472	20,737,023	13,985,781
	Less Transfer to General Reserve	(18,063,528)	(13,985,781)	(16,135,937)
	Closing Balance	21,354,593	24,967,649	18,216,406
CURRENT LIABILITIES		8,171,963	6,942,247	21,144,651
TOTAL		133,761,968	118,081,780	111,547,160
APPLICATION OF FUNDS				
Fixed Assets				
	Opening Balance	2,033,108	1,915,971	897,438
	Additions during the year	1,071,871	632,780	1,498,555
	Less : Sale	(49,580)		(100,000)
	Less: Depreciation	(648,871)	(515,644)	(380,022)
	Closing Balance	2,406,528	2,033,108	1,915,971
CURRENT ASSETS, LOANS, ADVANCES, DEPOSITS& CASH BALANCES		131,355,437	116,048,669	109,631,191
ROUNDING OFF DIFFERENCE		3	3	-2
TOTAL		133,761,968	118,081,780	111,547,160

Income and Expenditure Statement

All figures in Rupees

PARTICULARS		2021-2022	2020-2021	2019-2020
INCOME				
	Project Income	41,881,202	41,819,495	43,969,771
	Other Income	5,430,587	5,891,603	5,829,017
TOTAL		47,311,789	47,711,098	49,798,788
EXPENDITURE				
OVERHEAD COSTS				
	Salary	17,015,011	1,25,20,972	1,00,67,214
	Office running expenses	2,727,243	23,47,000	2,262,758
	Governance expenses	162,000	180,000	689,013
	Organisational Tax	1,107,303	707,297	-
	Depreciation	648,871	515,644	380,022
PROJECT COSTS				
	Sub-contractor/Project Grant	8,513,375	9,268,356	12,194,340
	Travel Costs	653,668	75,050	1,416,893
	Project Material	69,179	59,270	92,456
	Communication	131,097	128,044	113,384
	Financial Charges	163,145	10,256	1,153,433
	Publications	969,724	907,286	1,103,940
	Training/Workshops/Meetings	700,701	254,901	6,339,555
TOTAL		32,861,318	26,974,075	35,813,008
SURPLUS DURING THE PERIOD		14,450,472	20,737,023	13,985,780
TOTAL		47,311,789	47,711,098	49,798,788

OUTLOOK 2022 AND BEYOND

In 2022 , a major emphasis will be on finalising the Wetlands International South Asia strategy for the coming ten years, with a focus on increasing impact on the condition of wetlands through synergized programmes that catalyse affirmative actions, investments and partnerships. The strategy will also align with the wetlands target set out in Wetlands International Network Strategy 2021-2030.

Despite an increase in area, there is very limited investment in addressing the threats to the sites and preventing adverse change in ecological character. Wetlands International South Asia will seek to champion the need for upscaling investment in integrated wetland management and monitoring wetland ecosystem health. The organisation will provide support to formulation and implementation of management plans based on request received from State Governments. A management effectiveness assessment, initiated in the previous years will be rolled out to more Ramsar Sites as a means to support adaptive management.

The work on Himalayan Wetlands will be further deepened by engaging with more Himalayan States (such as Arunachal Pradesh), building capacity of wetlands managers in integrated management, and catalysing investments in wetlands monitoring and management.

Wetlands International South Asia will also work to deepen engagement on consideration of wetlands as Nature-based Solution for challenges posed by extreme events. The body of work done in Odisha and Bihar, and manual prepared on the subject in collaboration with National Institute of Disaster Management will be used to build capacity of disaster management professionals in including wetlands conservation within DRR plans and progammmes.

It is also envisaged to initiate a State of Indian Wetlands Report in 2023. This responds to the absence of a comprehensive analysis on the condition of Indian wetlands and their drivers of degradation, there is no systematic evidence generated on the sufficiency of conservation actions. The Report will be generated on the lines of Global Wetlands Outlook, and will use a number of datasets to establish trends in wetlands area and ecosystem health, major drivers of degradation, evaluation of current response options and future scenarios.

IN THE COMING YEAR WE WILL WORK TO SIGNIFICANTLY STRENGTHEN COMMUNICATION AND OUTREACH ON WETLANDS WITH A SPECIFIC FOCUS ON YOUTH AND CHILDREN.

We will continue to work for establishment of a South Asia Platform for wetland managers. The Ramsar 14th Conference of Parties meeting in Geneva will be an opportune moment to discuss the idea of the regional platform with national focal points and oter international organisations.

In the coming year we will work to significantly strengthen communication and outreach on wetlands with a specific focus on youth and children. We will also work on integrating wetlands in formal education curriculum.

The organization has also reviewed its reserves policy, and will be investing in wetlands conservation projects. These projects will be selected on the basis of their criticality for wetlands conservation from an impact perspective, alignment with core objectives and strategy of the organization, ability to create high visibility, and the deployed resources serving as catalytic funding and help the organization scale up footprint.

2022 is a crucial year for International Biodiversity Policy, particularly as the parties to the Convention on Biological Diversity will negotiate the post 2020 Global Biodiversity Framework and linked targets. With a hope that wetlands will receive a fair consideration in the framework, an important task would be to seek wetland related targets and programmes within the revised National Biodiversity Targets. Wetlands International South Asia aims to work with the MoEFCC and other stakeholders to ensure this consideration.

With increasing complexities surrounding wetlands in the country, it is no longer sufficient to work through a single office in New Delhi - it is pertinent we are present in crucial landscapes so as to influence local development. We therefore envisage to expand our presence through regional offices for Himalayan Wetlands Programme and Coastal Wetlands Programme.

The organization will also be shifting to a new office premises - this is to accommodate a growing staff strength as well as need for a more professional work environment. The new space is being designed to accommodate upto 40 people.

WETLANDS INTERNATIONAL SOUTH ASIA SOCIETY MEMBERS

List as on August 31, 2022
Total Members: 33

Founder Member ★
Nominated Member ▲
General Member ●
Institutional Member ■

Dr. Sidharth Kaul ★
Former Advisor (Wetlands), Ministry of Environment and Forests, Government of India (President)

Dr. Ajit K. Pattnaik ★
Former Principal Chief Conservator of Forests, Government of Odisha (Vice President)

Dr. J. K. Garg ▲
Director, Tribhuvan College of Environment and Development Sciences - Nalanda University Centre (Honorary Treasurer)

Dr. C. K. Varshney ▲
Professor Emeritus, Environmental Sciences, Jawaharlal Nehru University and Distinguished Adjunct Professor, AIT, Bangkok (Member, Governing Body)

Dr. Asad Rahmani ★
Former Director, Bombay Natural History Society, Mumbai (Member, Governing Body)

Prof. Erinjery J. James ★
Pro-Vice Chancellor, Karunya Institute of Technology and Science, Coimbatore, Tamil Nadu (Member, Governing Body)

Dr. Sara Ahmed ▲
Founder, Living Waters Museum (Member, Governing Body)

Dr. Harini Nagendra ▲
Professor, Azim Premji University (Member, Governing Body)

Mr. Pijush Sinha ▲
Board Member, Avendus Finance Private Limited (Member, Governing Body)

Ms. Jane Madgwick ★
Chief Executive Officer, Wetlands International Global office, The Netherlands (Member, Governing Body, ex-officio)

Dr. Ashok K. Kundra ★
Former Secretary to the Ministry of Mines and Special Secretary, Ministry of Environment and Forests, Government of India

Mr. J. C. Kala ▲
Advisor, Amity Institute of Global Warming and Ecological Studies
Former Secretary, Ministry of Environment and Forests, Government of India

Mr. Sudhir K. Pande ★
Former Director General (Forests), Ministry of Environment and Forests, Government of India

Dr. N. S. Tiwana ★
Former Chairman, Central Pollution Control Board, Government of India

Prof. B. B. Dhar ▲
Former Director, Central Institute for Mining Research, Council of Scientific and Industrial Research

Prof. Kailash C. Malhotra ★
Professor Emeritus, Indian Statistical Institute, Kolkata, West Bengal


Lonar Lake, Maharashtra

Prof. M. N. Murty ▲
Former Director, Institute of Economic Growth, New Delhi

Dr. J. S. Samra ★
Former Chief Executive, National Rainfed Area Authority, Planning Commission, Government of India

Prof. K. V. Jayakumar ▲
Professor and Dean, Civil Engineering Department, National Institute of Technology, Warangal, Andhra Pradesh

Dr. K. K. Vass ▲
Former Director, Central Inland Fisheries Research Institute, Kolkata, West Bengal

Mr. Thokchom Manihar ★
Former Project Director, Loktak Development Authority, Manipur

Dr. J. S. Samant ▲
Trustee, Development Research Awareness and Action Institution, Kolhapur, Maharashtra

Dr. Lalitha Vijayan ▲
Honorary Director, Salim Ali Foundation, Thrissur, Kerala

Dr. N. B. Narasimha Prasad ▲
Former Executive Director, Centre for Water Resources Development and Management, Kozikode, Kerala

Ms. Archana Chatterjee ▲
Programme Manager, IUCN – India, New Delhi

Mr. V. S. R. Krishna ★
Advocate, Supreme Court of India, New Delhi

Dr. Rahul Ratnakar Mahamuni ●
Lecturer, Department of Environmental Science,S.B.E.S.College of Science, Aurangabad, Maharashtra

Dr. Ajeet Kumar Singh ●
Guest Faculty, Department of Environmental Science, Kuvempu University, Shankaraghatta, Bihar

Dr. Tehmeena Yousuf ●
Associate Professor, Higher Education Department, Union Territory of Jammu and Kashmir

Dr. Suresh Chandra Gairola ●
Indian Forest Service (IFS) (Retired); Maharashtra Cadre

Mr. Raghavendra Sesandra Nanjundappa ●
Staff Software Engineer, Informatica

Dr. Manoj P. Samuel ■
Executive Director, KSCSTE-Centre for Water Resources Development and Management (CWRDM)

Dr. Ritesh Kumar
Director, Wetlands International South Asia (Secretary, ex-officio)

WETLANDS INTERNATIONAL SOUTH ASIA OFFICE

List as on August 31, 2022

6 + 16 = 22

Dr. Ritesh Kumar, Director

Technical Unit

Senior Technical Officers

- Dr. Asghar Nawab, Programme Head (Ecology)
- Mr. Dhruv Verma, Senior Technical Officer (Wetland Conservation)
- Mr. Harsh Ganapathi, Senior Technical Officer (Ecohydrology)

Technical Officers

- Ms. Kalpana Ambastha (Natural Resources Management)
- Dr. Satish Prasad (Landscape Planning)
- Mr. Kamal Dalakoti (GIS and Remote Sensing)
- Ms. Nehha Sharma (Socioeconomics)
- Mr. Arghya Chakrabarty (Biodiversity)
- Mr. Zafar Abbas Zaidi, Communications Manager

Junior Technical Officers

- Ms. Preethi Vasudevan (Water Management)
- Ms. Dayadra Mandal (Water Management)

GEF Project Team

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- Mr. Avinash Kumar Saroj, Accountant
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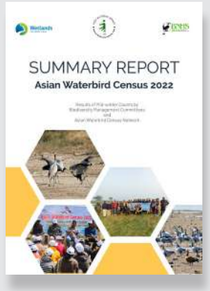
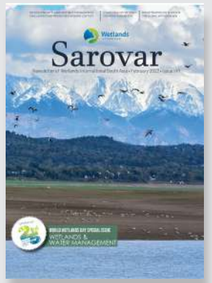
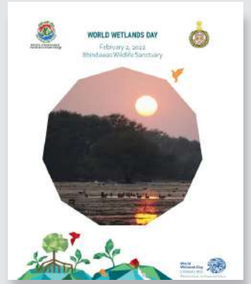
PUBLICATIONS



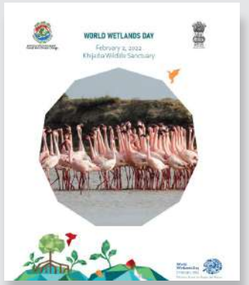
Asian Waterbird Census 2022: Summary Report



Sarovar Volume 8 Wetlands & Water Management



Significance, Services and Threats of Bhindawas Wildlife Sanctuary Brochure



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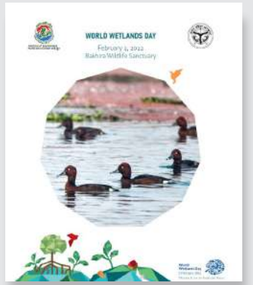

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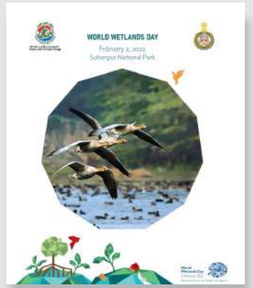
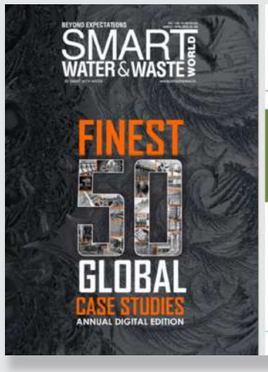
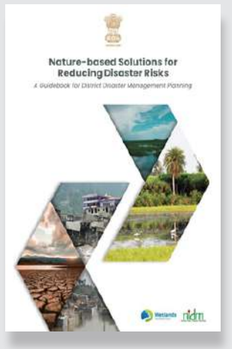


Significance, Services and Threats of Sultanpur National Park Brochure



Case study "Connect Cities to their Lifelines: Retain, Restore and Preserve Urban Wetlands" published in SMART Water & Waste World Magazine

Nature-based Solutions for Reducing Disaster Risks



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