



Wetlands
INTERNATIONAL

SAROVAR

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**SPECIAL ISSUE | WETLANDS FOR A
SUSTAINABLE URBAN FUTURE**

CONTENTS

From the President's Desk	1
Conserving Urban Wetlands: Imperatives and Challenges	3
Wetlands of National Capital Region	9
Bhubaneswar: Vanishing Wetlands of the Temple City	12
East Kolkata Wetlands: Metro's Choking Lifeline	13
Sasthamkotta: Kollam's Lifeline Needs a New Lease of Life	15
Ramsar CoP 13: Report Back from Dubai	20
Tools	23
World Wetlands Day 2019	27
News	29

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The Editorial Panel welcomes contributions of articles and information. These may be sent to: editor@wi-sa.org

Cover Photograph: Thane Creek Flamingo Sanctuary, Navi Mumbai **Photo Credit:** Sugandha Menda

Inside Cover Photograph: Tampara Wetland, Odisha **Photo Credit:** Dushyant Mohil

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A photograph of two ducks in flight over a wetland. The ducks are in the foreground, flying from left to right. They have speckled brown and white plumage, with bright blue patches on their wings and orange feet. The background is a soft-focus view of a wetland with tall reeds and water. The lighting is warm, suggesting late afternoon or early morning.

Wetlands International South Asia

Wetlands International South Asia Society (Regd.) (WISA) is a Non-Government Organisation with a mission to sustain and restore wetlands, their resources and biodiversity. WISA's office at New Delhi, India was established in 1996 as part of the Global Network Offices of The Wetlands International (WI) with a mandate to promote Wetland Conservation and wise use in South Asia region. WI is a global Non-Profit Organisation which works on Wetland conservation and restoration through 19 regional offices in over 100 Countries supported by headquarters based in the Netherlands. WI is also one of the 5 International Organisation Partners of the Convention on Wetlands (Ramsar Convention). In 2005, WISA was registered as a legal entity under the society's registration act of Government of India. The strategic direction and policies of WISA are set by a General Body which comprises eminent experts and conservation planners.

FROM THE PRESIDENT'S DESK

It gives me a great pleasure to place the fourth volume of our newsletter 'Sarovar' in your hands.

This volume focuses on urban wetlands based on the 2018 World Wetlands Day theme 'Wetlands for a sustainable urban future'. Healthy and biologically rich wetlands make cities and towns livable, through their role in groundwater recharge, buffering floods, filtering wastewater, enhancing landscape aesthetics, providing income generation opportunities and ultimately supporting overall human welfare.

India is on the course of rapid urbanization. As per estimates, as many as 377 million people inhabit her 8,000

urban centres. One-third of country's Gross Domestic Product is generated by just 13% of urban population, living on only 0.2% of land area. Experiences from the management of urban wetlands as East Kolkata Wetlands (West Bengal), Bhoj Wetlands (Madhya Pradesh) and Sasthamkotta (Kerala) indicate that ecosystem services and biodiversity values derived from urban wetlands can improve environmental sustainability in urban spaces.

The East Kolkata Wetlands are used to treat the entire city's sewage, and through an age-old practice of resource recovery, also used to produce over 15,000 MT of fish and 12,000 MT of vegetables annually. Several cities such as Bhopal and Kollam derive their principal water supply from wetlands. Recreational values linked with wetlands can be a significant source of revenue as can be seen in the backwaters of Kerala.

It is disheartening to note that expansion of urban spaces has created significant infrastructural, socio-spatial and ecological overloads, particularly on wetland ecosystems. The development of major urban centres, as Bengaluru, Delhi, Kolkata, Chennai, and Hyderabad have been associated with a concomitant decline in wetlands. As wetlands decline in urban spaces, so does the capacity of the landscape to provide ecosystem services for the people living around these areas. As more areas are concretized,

*River Yamuna Floodplains
at Okhla, New Delhi*



the runoff increases significantly, further making the areas vulnerable. Studies on increasing urban flooding risks in Bangaluru and Chennai have identified wetland encroachment as one of the main causative factors.

We hope that the articles and case studies presented in this newsletter trigger a healthy debate amongst the policy-makers, researchers and practitioners on ways and means of integrating conservation and wise use of wetlands within urban planning.

Wetlands International South Asia seeks to continue its endeavour to bridge the science, policy and practice divide that limits application of best practices and lessons for the conservation of urban wetlands. We seek your support in delivering our vision and mission.

The forthcoming issue of Sarovar will be on the theme 'wetlands and climate change'. I look forward to receiving your contributions to the newsletter on this theme, and suggestions for further improving our work.

Happy reading!



Dr Sidharth Kaul | President



CONSERVING URBAN WETLANDS: IMPERATIVES AND CHALLENGES

Urban development and wetlands conservation have been at cross-roads. In this article, Dr Sidharth Kaul (President, Wetlands International South Asia) and Dr Ritesh Kumar (Conservation Programme Manager) provide an overview of the status of urban wetlands, restoration measures adopted, challenges and way ahead.

Rapid urbanization forms an integral part of India's economic development. Since 1951, the number of town and cities in the country has more than doubled (from three thousand in 1951 to over eight thousand at present), and the urban population increased over six times (from 62 million to 377 million). The urban areas are also the engines of growth. The top 100 cities, with just 16% of the national population living on measly 0.24% of the country's land area, contribute over 40% of India's Gross Domestic Product.

Healthy wetlands play a crucial role in making cities and towns livable by helping in groundwater recharge, buffering floods, filtering wastewater, regulating microclimate, enhancing landscapes aesthetics, and providing livelihood opportunities. Countless plants and animals depend on wetlands for survival and maintenance of their germplasm. The 2011 National Wetlands Atlas of India estimates the extent of wetlands to be 15.26 million hectares. The atlas does not provide a separate estimate for wetlands located in urban and rural areas. A rapid assessment done by Wetlands International South Asia indicates that nearly 8% of the total wetland area is likely to be situated within the urban sprawls. The states of Uttar Pradesh, Tamil Nadu, West Bengal, Odisha, Andhra Pradesh and Telangana account for over half of the total urban wetland area.

Wetlands, through their wide-ranging ecosystem services and biodiversity, have since time immemorial served as urban areas' natural infrastructure. Cities as Bhopal (through Bhoj Wetlands in Madhya Pradesh), Kollam (through Sasthamkotta in Kerala), and New Delhi (through River Yamuna floodplains) are critically dependent on wetlands to meet their water supply requirements. The City of Kolkata filters its wastes through the maze of fish ponds located on its eastern periphery, transforming sewage's nutrients into fish and vegetables, and in that process generating livelihoods of nearly 20,000 peri-urban poor. In arid regions and the Deccan peninsula, there is a

rich history of constructing cascading wetland systems to store rainwater.

Urban wetlands are also significant cultural and recreational avenues. The backwaters of Kerala are visited by over 0.3 million tourists annually, generating an economy of around 6,000 million Indian Rupees. In North India, festivals as Chath, wherein devotees stand in wetlands to offer prayers to Sun, is a beautiful expression of the cultural connections communities have with water and wetlands.

Yet, as built up spaces within urban areas have increased, the wetlands have undergone a drastic decline. Analysis of published land use and land cover data from 22 cities by Wetlands International South Asia team indicates that during 1970 – 2014, every one square kilometre increase in built-up area matched up with a loss of 25 ha wetlands. The most rapid loss was seen in metros, namely New Delhi, Bangalore, Chennai, Mumbai and Hyderabad.

Wetlands have invariably been treated as wastelands. Several cities have waste dumps located within wetlands – for example, Chennai dumps its wastes in Pallikarnai, Kolkata in Dhapa landfill located within East Kolkata Wetlands, New Delhi in the area adjoining Bhalsawa and Guwahati in a waste dump located on the shore of Deepor Beel. With not more than one-fifth of country's municipal solid waste treated, wetlands have become the ultimate waste receptacles. Several of the wetlands are so degraded that their restoration is nearly impossible.

Loss of wetlands increases the vulnerability of urban areas

Urban areas tend to alter hydrological regimes in diverse ways. As built up surface increase, the runoff also increases. As the population becomes more concentrated, the demand for water, and the generation of wastewater also increases exponentially. This obviates the need for wetlands within urban landscapes, so as to provide a



natural buffer for storing runoff, recharging groundwater, treating wastewater, and regulating microclimate. Wetlands also dampen the heat island effect created in several urban spaces due to modification of land surfaces. As wetlands are lost, so are these vital functions, exposing the urban areas to multiple hazards.

The intensity and severity of urban floods are on the rise. With climate change, rainfall is becoming more intense, concentrated over short spells, and generating high runoff. As floodwater tends to accumulate in low lying areas as wetlands, infrastructure created on encroached wetland area and feeder channels become exposed to flooding risks. Reduced floodwater accommodating capacity leads to larger areas being impacted. This has been evidenced in several cases, such as Kashmir Deluge of September 2014, Chennai floods of November-December 2015, and more recently in the Kerala floods of August 2018.

Wular, downstream of Srinagar is the City's key flood buffer. Rampant conversion of wetlands for expansion of agriculture, settlements and plantation of willows has led to shrinkage of wetlands by over one-fifth since the 1950s. Wetlands lying between Srinagar and Wular, Batmaloonambal, Rakh-i-art, Rakh-i-Gandkash and others have all been built upon. Thus when the city was lashed with heavy rains in September 2014, in the absence of these crucial buffers, floods wreaked havoc killing over 500 people, injuring over 22,000 and damaging as many as 0.12 million houses. The Pallikarnai marsh, situated in the heart of Chennai City has shrunk extensively owing to ever-expanding real estate and industrial development. The lack of wetlands buffer was identified as a significant causative factor for the extensive damage during the floods of November – December 2015. In August 2018, when the southern state of Kerala faced unprecedented floods, including a sudden release of water from Idukki reservoir, the lowland areas wherein wetlands had been most rapidly converted, suffered maximum damage. Unfortunately, reconstruction efforts post-floods have not considered restoration of wetlands and its feeder channels as a response.

Groundwater accounts for over half of Indian urban water use. As the cities become increasingly dry and

short of water, the role of wetlands as groundwater recharge becomes critical. With declining wetlands, the cities have increasingly become parched, dependent on water imported from elsewhere and providing ground for water-tanker economies and intense water conflict zones. Bangaluru City is a case in point. Situated atop Deccan Plateau, the city derived its principal source of water supply from an intricate network of over thousand tanks. However, the ever-expanding City devoured and polluted its tanks, and in 2011, only about two hundred and fifty remained. Several of these are so polluted that they froth and burn for days together. The feeder channels bringing in water to the tanks have been infringed upon and choked. The City thus is forced to source much of its water from upstream Cauvery River. A fleet of water tankers, often operating illegally criss-crosses the city charging exorbitant prices from the residents.

Limited public policy response

Within the federal set-up, the Ministry of Environment, Forest and Climate Change (MoEFCC) is the nodal organization in the country for issues related to wetlands. With India becoming a party to the Ramsar Convention in 1982, and MoEFCC (the then MoEF) being established in 1985, a national programming framework for wetlands was institutionalized. MoEFCC established the National Wetland Conservation Plan (NWCP) in 1986 to provide an overarching national policy framework and financial assistance to the state governments for the implementation of site management plans. In 2001, the National Lake Conservation Programme (NLCP) was introduced to address pollution issues in urban and peri-urban water bodies through interception, diversion and treatment of pollution load. Besides these two schemes, funding for wetlands located within protected area are supported under the Integrated Development of Wildlife Habitats scheme, whereas the programme on Mangroves and Coral Reefs support conservation of coastal wetlands. As of December 2018, the network of sites of national and international significance included 250 wetlands. India has also designated 26 wetlands as Ramsar Sites, of which as many as eight are located within urban and peri-urban spaces.

Willow plantations inside Wular (Jammu & Kashmir) reduced capacity of the wetland to buffer floods



Besides the MoEFCC, funding support to wetlands is also provided under programmes of several other ministries. Since the tenth plan period, the Ministry of Water Resources, River Development and Ganga Rejuvenation, under its scheme entitled Repair, Rejuvenation and Restoration of Waterbodies, support State Governments in enhancing water holding capacity of these waterbodies. The Smart Cities Mission of the Ministry of Housing and Urban Affairs includes conservation of wetlands within its programming ambit, as part of urban sustainability measures. The Ministry of Agriculture and Farmers Welfare support programmes on inland and coastal fisheries as a part of food security programmes. When compared with the mandate of MoEFCC funded programmes, other ministries take into account a subset of wetland benefits and are essentially sectoral in nature.

The cumulative expenditure on wetlands conservation in the last four decades may not have exceeded two and half thousand crores, a meagre sum when compared with demand. A few large wetlands, notably Loktak (Manipur), Bhoj (Madhya Pradesh), Dal and Wular (Jammu and Kashmir) have cornered a significant share of this sum. Implementation of restoration measures has been of limited success due to various reasons, notably lack of integrated management planning to guide actions, funding to disconnected annual action plans, focus on symptoms rather than root causes of degradation, sectoral approaches, and limited science-management interface.

The usage of different terms and connotations for wetlands such as lake, lagoon, estuary, impounded area and several

other names further confounds management and promotes sectoral pursuits. Even being a signatory of the Ramsar Convention which uses a broader definition of wetlands encompassing a range of natural and human-made ecosystems, there is widespread usage of different terms, guidelines, and funding arrangements for wetlands within various central government ministries. Lack of consistency in national programming imposes a significant limitation on the adoption of integrated and holistic approaches for wetlands management.

Urban wetlands fast becoming contested spaces

The Government of India and the state governments have enacted a number of laws and regulations to protect wetlands. The most recent of these is Wetlands (Conservation and Management) Rules, 2017 under the Environment Protection Act, 1986. The rules constitute wetlands authorities within states and union territories as a nodal institution for policy, programming and regulation of wetlands. The Coastal Regulation Zone Notification issued under the same act also contains provisions for protecting coastal wetlands. Numerous central government acts such as The Indian Fisheries Act, 1987; The Indian Forest Act, 1927; The Indian Wildlife (Protection) Act, 1972; The Water (Prevention and Control of Pollution) Act, 1974; The Forest Conservation Act, 1980; The Biological Diversity Act, 2002; and The Coastal Aquaculture Authority Act, 2005 have provisions to restrict activities detrimental to wetlands. Several states have also enacted their rules and regulations on wetlands.



Rampant encroachment of Pallikarnai Marsh has rendered Chennai (Tamil Nadu) city vulnerable to floods

Despite these, wetlands, especially urban wetlands, continue to be encroached upon, polluted, and converted for alternate usages.

An analysis of cases pertaining to wetlands in National Green Tribunal since 2010 indicated that of the 33 cases, 25 related to urban wetlands. Commercial construction activities (14 cases), illegal dumping of waste (11 cases) and residential construction (8 cases) were the most rampant violations. There is a valid concern whether states, which have been entrusted to play a significant role as per the 2017 Wetlands Rules, would be able to make informed decisions for wetlands in the face of local political and development pressures. In several cases, even courts have favoured developmental activities over maintenance of wetlands, mainly in the absence of systematic evidence base and understanding of wetlands functions.

Major challenges

Continued degradation of wetlands, particularly urban wetlands underline ineffectiveness of existing measures and need to ramp up efforts across multiple sectors and involving multitude of stakeholders. Some of the significant challenges faced in conservation of urban wetlands are:

Weak regulation

Despite nearly over a decade of notification of a national regulatory framework, wetlands are yet to be accorded protection and regulation from developmental actions. The Wetlands (Conservation and Management) Rules, 2010

and the subsequent amendments are yet to be implemented in letter and spirit. Within land records, wetlands are often categorized under wastelands, and thus their conversion for developmental benefits becomes a natural policy response. This loophole has been widely exploited to reclaim wetlands and convert them for housing or other infrastructure development projects.

Sectoral approaches

Wetlands are often managed with singular sectoral approaches – such as for recreation and amenity values, fisheries, and water storage. This prevents incorporation of their full range of ecosystem services and biodiversity values and connectivity within the landscape scale management interventions. The complex drivers of wetlands degradation cannot be addressed by piece-meal sectoral approaches.

Limited capacities for integrated management

The responsibility of conserving wetlands is often spread through multiple departments, such as environment and forests, urban development, revenue, fisheries, and water resources. In several smart cities projects, the management of wetlands located within the boundaries of the city is placed with the concerned urban local body. Located at interface of land and water, wetlands require specialized management approaches, which are not addressed by sectoral pursuits of the government departments. Limited capacities within these departments makes design and implementation of integrated strategies and management plans an uphill task.



Focus on hard-infrastructure solutions

The dominant urban planning approaches in India so far have been infrastructure oriented, enabling tapping upstream sources for meeting water needs and sending waste and run-off to downstream reaches in the shortest possible time. The limitations of such approaches are evident in cities being parched, exposed to floods and droughts, and increasingly water insecure. Management of wetlands located within the boundary of urban areas is often missed out within these approaches.

Limited consideration of impact of urban development on wetlands.

Urban spaces have far large footprints than is commonly thought and perceived. The water and food security needs of an urban area are often met by altering wetlands within far upstream and downstream stretches. Urban development projects often fail to consider the overall impact on wetlands, and recommend appropriate redressal measures.

Lessons from other cities

Worldwide there are increasing trends of urban agglomerations integrating wetlands restoration within urban planning. The Sponge Cities model, adopted in several Chinese cities as Shanghai have replaced cemented pavements with wetlands, as an ecologically friendly alternative to traditional flood defences and drainage systems for the coastal city facing risks from rising sea levels. The Văcărești Nature Park, a 183-hectare urban

wetland of Bucharest, Romania's largest and most densely populated city, provides a green lung to the built-up city surrounding the site. Located on the edge of Vientiane, the That Luang Marsh, spanning 2000-hectare is being preserved and managed as a buffer against flooding and a provider of livelihoods to communities living around.

In Banten Bay area of Jakarta, a consortium of environmental organisations, including Wetlands International, and engineering firms are using wetlands as natural infrastructure solutions to prevent coastal erosion. The Room for the River Programme of the Netherlands and Germany is an ambitious river restoration programme, which includes rejuvenating floodplains and creation of additional wetland habitats to buffer the urban areas from flooding and risk of a dyke collapse. There are several other cases from around the globe which indicate the ways in which wetlands conservation could be weaved into urban planning, contributing to twin objectives of conservation as well as sustainable urbanization.

To promote conservation of wetlands within urban planning processes, the Ramsar Convention, in 2015, launched the Wetlands City accreditation scheme to encourage cities that are close to and dependent on wetlands, especially Ramsar Sites, to highlight and promote a positive relationship with these valuable ecosystems. In the 13th Conference of Parties meeting of the Convention held at Dubai in 2018, eighteen cities from seven countries – China, France, Hungary, Madagascar, South Korea, Sri Lanka and Tunisia – received the prestigious accreditation.



Ways ahead

The future of urban wetlands is closely linked to the extent to which these ecosystems are integrated within the urban developmental planning processes. Wetlands need to be recognized as natural infrastructure solutions for urban development. The following are some of the ways in which conservation and wise use of urban wetlands can be achieved:

Inventorying wetlands and including within land use records

The National Wetlands Atlas produced using data of 2006-07 is already a decade old. Given the rapid changes in wetlands, it is pertinent that all wetlands, including those located within urban and peri-urban boundaries, are inventorized, along with information on their spatial extent, ownership, current status, and key hydrological and ecological characteristics. Such an inventory is crucial to establish appropriate management baselines.

Recording wetlands as a separate land use class can be instrumental in thwarting the threats of wetlands encroachment and conversion. Efforts from the state of Uttar Pradesh, has managed to incorporate wetlands within the land use records and can be emulated with due consideration of replicability of this method and policy frameworks employed.

Conservation of urban wetlands, their catchments and protection of feeder channels

All urban wetlands need to be delineated and managed in an integrated manner, with due consideration of their ecological, hydrological and socioeconomic features and factors governing them. A catchment scale management is required to be put in place, so that land and water use decisions take into account the role of wetlands for human welfare. The feeder channels conveying water into the wetlands need to be made free of encroachments.

Developing capacity for integrated management of wetlands

Periodic capacity development programmes may be conducted for central and state government officials entrusted with the integrated management of wetlands. Comprehensive evaluation of wetlands, and their integration in sectoral development planning may be the significant elements of capacity development programmes. Hands-on training should be complemented with exposure visits and networking support to ensure that built capacity is not dissipated over time.

Addressing water needs of wetlands

As integral components of hydrological cycle, wetlands are critically important in regulating the quantity, quality and reliability of water as it moves in its various forms. Changes and degradation of wetlands particularly in their structure and functions can lead to significant changes in their flow pattern and chemical and microbiological character of water resources. At the same time, wetlands require sufficient water to maintain the desired level of their ecological health. Given the fact that most of the impacts of climate change in the country would be water-mediated, the role of wetlands in climate change demands urgent attention and integration in the mitigation and adaptation strategies. Environmental flows of all major urban wetlands need to be determined and implemented within the existing water resources planning and decision-making processes.

Integrating wetlands within urban planning

The Ramsar Convention, in its Resolution XI.11 has adopted principles for planning and management of urban and peri-urban wetlands. The resolutions recommend: a) thematic planning should be used as an essential tool to safeguard wetlands and their ecosystem services both within and beyond urban settlements; b) the consideration of wetlands within urban planning needs to be integrated fully with wider elements of spatial planning (such as Integrated River Basin Management, water resource management, the development of transport infrastructure, agriculture production, fuel supply, etc.), and c) Alternative locations need to be identified for planned urban developments (both formal and informal built development) which do not lead to wetlands, or other natural ecosystems, being degraded or lost. Developing synergies in implementation of various conventions such as Ramsar, Convention on Biological Diversity and Convention on Migratory Species, can greatly support mainstreaming of conservation agenda including wetlands in development planning. It is suggested that environmental appraisal committees at government level should invariably involve wetland experts to gather valid opinion about the area before the site is granted clearance for developmental projects.

Strengthening wetlands governance

Urban wetlands need to be properly delineated and notified under various regulation, such as Wetlands (Conservation and Management) Rules, 2017. The State Wetlands Authorities need to prioritize conservation of urban wetlands, using a catchment approach, and securing full range of their ecosystem services and biodiversity values within sectoral planning. An effective and transparent monitoring system needs to be put in place to ensure that management plans bring desired improvement in wetlands ecosystem health.

Application-oriented monitoring and research

Without sufficient research inputs, no management plan can be successful. Research on functioning of wetlands, and linkages with landscape changes in catchments can greatly assist in identifying targeted interventions. Valuation can help better decision making related to use and management of natural resources, including wetlands, by making explicit how decision making would affect ecosystem service values, and expressing these value changes in units that allow for their incorporation in public decision making.

Participatory and adaptive management

Urban local bodies, resident welfare committees, civil society and community-based organizations need to be meaningfully engaged in management and restoration of urban wetlands. This could be done through sensitization, behavioural changes, communication, education and awareness campaigns, use of citizen science for monitoring and their involvement in management planning processes.

WETLANDS OF NATIONAL CAPITAL REGION

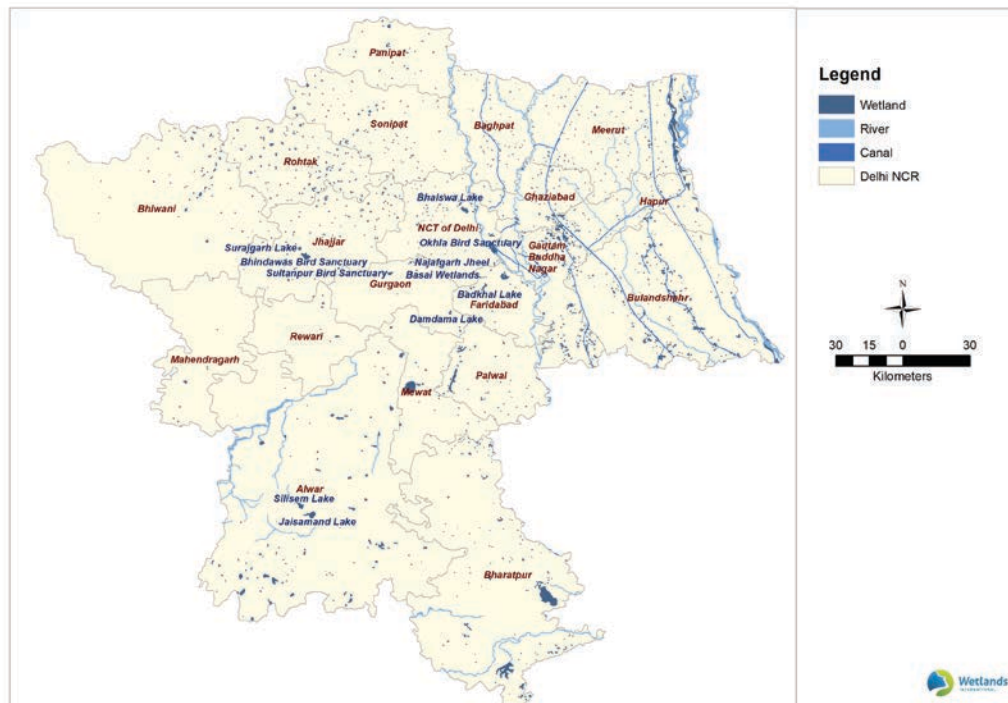
Edged out by development

Wetlands - Capital's blue lifeline

The National Capital Region (NCR), encompassing the National Capital Territory of Delhi, and surrounding districts from the neighbouring states of Haryana, Uttar Pradesh and Rajasthan, is bestowed with several wetlands in the form of river floodplains, lakes, marshes, barrages, reservoirs, and human-made waterbodies as johad, baoli, ponds and stepwells. These ecosystems form a significant component of the regions natural capital endowment. Barely accounting for 1.86% of NCR's land area, these wetlands perform several ecological functions such as groundwater recharge, flood buffering, water purification, providing habitat to a number of plant and animal species, and enhancing landscape aesthetics. The River Yamuna floodplains, accounting for around 60% of the wetland regime, are an incredible natural source

of water, even recharging on their own. The marshes and lakes of Okhla, Jahangirpuri, Najafgarh, Sultanpur, Bhadkal and Bhindawaas teem with waterbirds during winters, including several species migrating within the Central Asian Flyway. The economic value of a select set of ecosystem services from the River Yamuna floodplains has been assessed to be Rs. 406 million annually.

The historic city of Delhi, constructed and reconstructed over a thousand years, carefully managed its wetlands to ensure that water was available in plenty, and aesthetics of the city were maintained. A substantial number of natural wetlands in the Yamuna floodplains were formed by the post-monsoon receding of the river in depressions (oxbow lakes and meanders scours) some of which were quite large, including horseshoe lake at Bhalaswa and Sanjay Lake in the area currently known as Mayur Vihar. The floodplains of River Yamuna were preserved as a no-development zone. Historically, most of the villages of Delhi had johad and some villages having at least two to three.



Parched, yet no place in development

Unplanned urbanisation and thoughtless development of infrastructure have taken a heavy toll on these wetlands. Since the 1970s, while the built-up area within NCR has expanded 17 folds (from 126 km² to 2180 km²), wetlands have been lost at the rate of 220 ha annually. Lakes and marshes along the Mundela drain, Rithala and Bawana are no longer to be seen. Jahangirpuri marshes, which is reported to have an expanse more than 500 ha in the sixties, has been whittled down to 140 ha, rest having fallen causality to encroachments and conversions. One arm of Bhalaswa Lake has been engulfed by the adjacent landfill site.

The River Yamuna floodplains have been thoughtlessly exploited for social, religious and illegal sand-mining and as much as 40% area encroached upon, falling prey to various development projects (including those even supported by Government). With a burgeoning population, increasing water demand and fast shrinking wetlands regime, the NCR is increasingly becoming parched for water. Most of the groundwater blocks (78%) are overexploited. River Yamuna in Delhi continues to be one of the most polluted river stretches in the entire country, with literally all flows channelised into pipes, the flow in the river being mostly inputs from 22 drains! The river stretch has several pockets devoid of oxygen and high concentration of biological and chemical contaminants.

Almost 60% of sewage of Delhi remains untreated, finding its way into the Yamuna or its surrounding wetlands. Despite spending nearly Rs. 8.8 billion in the implementation of two phases of the Yamuna Action Plan, the condition of the river and waste management facilities in the Delhi remains deplorable. By 2021, the annual water deficit in the capital is projected to increase to 9,688 MCM. The footprint of water insecurity looms large on states as far off as Himachal Pradesh, wherein Renuka Dam is being constructed to augment water supply to Delhi. Disruption of Munak Canal in February 2016 is ample evidence of the vulnerability of current water infrastructure, and the need to retrain focus on conservation of wetlands for water security in the national capital.

Too little, too late

Despite wetlands' immense significance to the urban environment, precious little has been done to conserve the city's blue heritage. In parts, the current condition of wetlands of Delhi is symptomatic of limited integration of wetlands in urban planning. The ownership and responsibility of management of wetlands is spread across several government departments and agencies, such as environment, forest, irrigation and flood control, public works, Delhi Development Authority, Delhi Jal Board, Municipal Corporation of Delhi, Archeological Survey of India, Delhi Urban Shelter Improvement Board and Delhi State Industrial and Infrastructure Development Corporation.

The multiple and diffuse ownership creates an immense challenge in inter-agency coordination and ensuring the application of systematic approaches. Following a Hon'ble Delhi High Court decision, in 2011, the CEO, Delhi

Park and Garden Society were mandated as the nodal officer for the creation of a database on waterbodies of the NCT region. An apex body with the Chief Secretary, Government of Delhi was constituted to monitor the progress of conservation efforts. A complementing Steering Committee with Secretary (Environment and Forests) was also formed to intervene as and when required during the implementation of restoration programmes. The committee concluded that of the 1,011 waterbodies reported in the NCT region, only 971 could be traced, 168 had been encroached upon, and 117 had built up areas within these.

The widespread loss of wetlands has taken place despite several policy statements and planning processes highlighting the immense value of wetlands. The Master Plan for Delhi (2021) placed Yamuna floodplain in a distinct zone, restricting any form of construction in the floodplains, and allowing for measures for rejuvenation of the river.

For all other zones, all waterbodies above 1 ha in the area are to be protected, and prevented from any encroachment or infilling. The Water Policy of Delhi clearly recognizes that 'competitive land hunger would outweigh the benefit of wetlands, and target them for reclamation decreasing storage, recharge and ecological functions' and thereby recommends conservation of wetlands in an integrated manner. The Drainage Master Plan of Delhi (Draft, prepared in 2016 by Indian Institute of Technology, Delhi for Department of Irrigation and Flood Control) indicated a complementing role of wetlands as retention basins for absorbing floodwaters and thereby has recommended hydrological connectivity with the storm drainage systems.

The State Climate Action Plan (2009-12) identified wetlands restoration as a measure to enhance water and climate security and listed 620 wetlands for rejuvenation. In a survey of the waterbodies of the capital, only 49 were listed as being challenging to restore because of encroachment and other prevailing conditions. Continued degradation of wetlands despite the presence of these policy statements is an indicator of significant implementation gaps, political apathy and capacity limitations. It is but natural that wetlands restoration in NCR has been subject of various public interest litigations, through actions of civil society organizations such as Yamuna Jiye Abhiyaan.

Restoration measures for wetlands of Delhi and NCR region are precious few and far between. During 2003-11, the DDA in collaboration with the Center for Environmental Management of Degraded Ecosystems of Delhi University established the 457 acres Yamuna Biodiversity Park on the Yamuna floodplains near Wazirabad. The Natural Heritage Division of the INTACH has undertaken restoration projects on Delhi waterbodies, notably Hauz Khas Lake, Bhalsawa and Sanjay Lake, only the first of which has had some tangible impact. The Hauz Khas Lake was given a new lease of life by diverting treated sewage water and has gradually reverted to manage its water regimes. A similar approach has been followed for the restoration of Neela Hauz and proposed for Badhkal Lake in Faridabad. At local scale, initiatives such as the Jal Chaupal for the restoration of village ponds of Gautam Budha Nagar are promising community action models. The Delhi Pollution Control Committee in collaboration with DDA has developed a master plan for restoring a section of Jahangirpuri marshes in the form of Dheerpur Wetland Park; the project, however, is yet to see the

light of the day. In 2017, the Department of Irrigation and Flood Control initiated a detailed topographic and hydrographic surveys of all waterbodies in order to lead to an integrated plan for restoration and revival.

No wetland of NCR has been recommended for inclusion under the Ministry of Environment, Forest and Climate Change's National Programme for Conservation of Aquatic Ecosystems. Two wetlands of Haryana, Bhindawas and Sultanpur have received financial support to the tune of Rs. 40.16 million for restoration and tangible progress is yet to be achieved. The provisions of Wetlands (Conservation and Management) Rules, 2010 (and superseded by 2017 notification) have not been implemented in the region.

Way forward

In the milieu of several piece-meal actions, sporadic restoration successes and mounting information base, an integrated strategy for conserving wetlands of Delhi and NCR region have remained elusive. As the water crises loom large on the region, it is apt that the current

approaches and actions for conserving and managing wetlands are reviewed, collaboratively with all concerned stakeholders, and a unified vision developed for ensuring that full range of biodiversity and ecosystem service values provided by these wetlands are sustained in the long term. This will require actions at multiple levels. Urban planning departments would need to integrate wetlands within their development plans so that the consequences of increased built up spaces on wetlands are appropriately factored in. Management plans for restoring significant wetlands would need to be designed factoring in basin-level developmental activities. Enforcement of regulatory frameworks, such as Wetlands (Conservation and Management) Rules, 2017 is vital in securing wetlands boundaries from encroachment. An enabling role can be played by civil society, resident welfare associations and community-based organizations in restoring tanks and ponds. A massive awareness drive is required to sensitize policy makers and residents on the critical role played by wetlands in making the region water secure and habitable.

CONTRIBUTED BY: Sugandha Menda (*Junior Technical Officer, WISA*) and Dushyant Mohil (*Project Manager, WISA*)

The municipal corporation of Gurugram has chosen Basai as the site for a waste treatment plant



BHUBANESWAR

Vanishing wetlands of the Temple City

No description of an Indian city can be considered as complete without the wetlands historically associated with it, and Bhubaneswar is no exception. Bhubaneswar, the capital of Odisha known as the “Temple City” has more than 500 temples mostly confined to the old part of the city. The favorable physical environment created by surrounding rivers and streams along with undulating topography of Bhubaneswar has facilitated the existence of numerous water bodies which are a part of the excellent drainage network. Most of these are associated with temples and have mythology behind creation. Thus, they have become an integral part of the heritage, culture, rituals and lifestyle of urban residents of Bhubaneswar.

Each temple in this part of the city has one or more water body within its premises. Some are quite small while others represent huge expanse of freshwater. As regard to their origin, temple ponds are believed to have been created initially as vast depressions made by the removal of enormous amount of soil needed to build earthen ramps that were used for dragging the huge blocks of stone to heights corresponding to the mounting height of the temple under construction. After the completion of the temples, these depressions were shaped and lined with the surplus stone available and were converted into temple tanks for use during daily rituals and festive occasions.

Apart from these a lot of other natural and human-made and natural wetlands form an integral part of the drainage system of Bhubaneswar. Distributaries of Mahanadi River surround Bhubaneswar city and its fringe area from the northern, eastern and southern sides which are intricately linked to its drainage system. The rivers, Kuakhai and Daya, are fourth and third order distributaries of River Mahanadi, respectively. A network of channels and streams, which originate on the west of the city and flow across the city to the east, joins Kuakhai and Daya rivers and drains the city and its fringe area. From Kuakhai some water moves into the Gangua Nala that flows in the eastern side of the Bhubaneswar city through the Mancheswar escape. Wetlands are embedded in this intricate drainage network.

The first master plan of Bhubaneswar City spread over 16.48 km² was formulated in 1948 for a population of 40,000. The rapidly increasing population pressure, the rapid development of the town as a major centre of trade, commerce, technology and education; is resulting in rapid growth and expansion of the city. In this process of fast growth wetlands have become the soft target. The major threats to wetland resources of the town have been reclamation, uncontrolled discharge of wastewater,

pollution from point and non-point sources. But in the recent times, lakes could not be happily woven into the modern layouts of the Indian cities because of increasing pressure on land, high costs of managing a surface waterbody in a clean form when surrounded by urban sprawls, and apathy of the urban people for ecological integrity. It has been observed that there has been the progressive disappearance of wetlands from the city area of Bhubaneswar, from within the expanding municipal limits and from the neighbourhood. This shortsighted approach has been adversely impacting the drainage system of the city. Waterlogging, which was never heard of, has now become a regular feature during monsoon. Bhubaneswar is now known as the hottest city of India which is partly attributed to the rapid loss of wetlands known for their ability to moderate local climate.



CONTRIBUTED BY: Dr A. K. Pattnaik (Vice President, WISA)
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EAST KOLKATA WETLANDS

Metro's choking lifeline

The East Kolkata Wetlands (EKW), located on the eastern fringes of Kolkata city is an assemblage of sewage fed fish ponds spread over an area of 12,500 ha. The wetland complex sustains possibly the world's largest and oldest integrated resource recovery practice based on a combination of agriculture and aquaculture, which provides valuable water cleansing service to the residents of Kolkata City and livelihood support to a large, economically underprivileged population. The uniqueness of East Kolkata Wetlands has been recognised internationally by Ramsar Convention and several global platforms as a 'wetlands wise use practice'. In 2002, EKW was designated as a Wetland of International Importance under Ramsar Convention, thus committing the national and the state government in securing the wetland's ecological character.

EKW forms a part of the extensive inter-distributory wetland regime of the Gangetic Delta, which until last six-decades maintained an active connection with the Sunderbans Delta (thus the name Salt Lake). Being at the interface of

Kolkata City, the wetland is under severe anthropogenic stress in the form of land use change, siltation within the aquaculture ponds, and presence of toxic material in sewage inflow received into wetlands. Ineffective integration of the full range of ecosystem services and biodiversity values of these wetlands within urban and peri-urban planning processes has generated value EKW brings to the ecological security of the region.

Over the last three decades, several regulatory measures have been put in place to ensure the continued existence of EKW. Mapping of the conservation area boundary for the wetland area, including the waste recycling region, was done in 1985 by the State Planning Board, Government of West Bengal. Subsequently, the High Court of Kolkata passed an order in 1992 prohibiting changes in landuse

of the area and directed the state government to take recourse to legal cover to prevent any encroachment. The High Court direction also paved the way for enacting the East Kolkata Wetlands (Conservation and Management) Act, 2006, which *inter alia* provided statutory backing to the East Kolkata Wetlands Management Authority (EKWMA), and laid down its powers and functions. Notably, the provisions of the West Bengal Town and Country (Planning and Development) Act, 1979 and Fisheries Act, 1984 (amended in 1993) also include banning of conversion and filling up of the wetland site.

Several scientific studies on various aspects of the wetland have also been carried out by state government departments, research agencies, and others. However, these efforts have largely been restricted to academic exercises and no systematic approach to conservation and sustainable development of these wetlands has emerged.

The wetland ecosystem faces a grave threat to its ecological character thereby endangering the overall sustainability of the resource recovery practices which form the base of existence of the entire Kolkata City, and of the livelihoods of 0.2 million poor who depend on wetlands resources for sustenance. In the last few months, numerous construction projects have been proposed in the wetland area of which most contentious is a five-kilometre-long flyover piercing through the core of wetlands with 146 piers to be constructed within the wetlands complex.

Two other-projects, an ecotourism-based project name East Kolkata Wetland Park and a centre to highlight local agriculture also challenge the ecological stability of the system. Progressive shift in the land use within EKW mostly by unauthorised constructions on agricultural land or wetlands, or filling in waterbodies with unmatched rapidity has been continuously reducing the overall capacity of the wetlands to recycle wastes and attenuate floods. During 1970-2011, the area under fish farms has declined by over 18%, a large chunk of which has been converted to built-up land.

Functioning of this exceptional resource-recovery system is primarily dependent on the inflows sourced through the Kolkata Municipal Corporation. Of the total flows, more than 95% is siphoned off from the wetland to reduce waterlogging within the Kolkata. Lack of an effective mechanism to address enhanced silt accumulation within the wetland complex has led to a reduction in depths of channel network feeding into the wetlands, and abandonment of fish farms. Moreover, the sewage supplied to the system has increased concentrations of heavy metals

due to discharge of untreated industrial waste into the wetlands.

Changing hydrological regimes and land use patterns have also impacted the biodiversity of the wetlands. Recent estimates of waterbirds species recorded in the area have indicated a decline. The wetland which in early twentieth century teemed with a broad spectrum of brackish water and freshwater water fish, only supports cultivable freshwater species.

The sewage fed fisheries, for which the wetland is known globally, has been constrained due to inadequate management of water regimes, technology integration and weak marketing, post-marketing and value addition opportunities. Data on fish farms collected by the authority indicate relatively higher sewage access, productivity and net return to the large farmers as compared to the smaller ones. The current farm management systems report a skewed incentive towards the large private farmers, as against the small and medium-size cooperatives.

The lack of consensus among the policy makers, planners, wetland managers and environmentalists has left this unique ecosystem in a state of peril. In the absence of a holistic management plan various projects have been put forth in an ad-hoc manner that are threatening the survival of this unique ecosystem. The need of the hour is to prepare and implement a holistic wetlands management plan in consultation with various stakeholders.

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SASTHAMKOTTA

Kollam's lifeline needs a new lease of life

Kerala is bestowed with a range of inland and coastal wetlands which form the core of state's ecological and economic security. While accounting for only ~ 5% of the state's geographical area, the 0.16 m ha wetlands linked with its 44 rivers and 587 km long coastline provide a range of ecosystem services through supporting fisheries, agriculture, inland navigation, tourism,

groundwater recharge, regulating hydrological regimes and as habitats of rich biological diversity.

Three significant wetlands of the state, namely Vembanad-Kol, Ashtamudi and Sasthamkotta have been designated as Wetlands of International Importance under Ramsar Convention.

Located in Kunnathur Taluk of Kollam District, Sasthamkotta is the largest freshwater wetland of Kerala. Spanning 373 ha, the wetland is the principal source of water for nearly 0.7 million residents of Kollam City and its suburbs. Sastha temple, from which the wetland is believed to have derived its name is an important religious and cultural centre for the region. The striking beauty of Sasthamkotta's placid water surrounded by lush green hills has earned it the distinction of 'Queen of Lakes'. Sasthamkotta receives water primarily in the form of monsoon rainfall and surface runoff from its relatively small direct drainage basin of 629 ha.

During 1997 -2015 water withdrawal from Sasthamkotta was on an average 2.48 times the inflow. The increased abstraction happens amidst a declining trend in South-

west monsoon rainfall, which accounts for 48% of total rainfall.

Excessive sand mining within this region has led to complete breakdown of this connection to the extent that the two systems have become hydrologically isolated. The sand layer between Sasthamkotta and River Kallada, embedded within the alluvial sediments of Late Quaternary age, played a major role in the hydrology of the entire region by acting as a conduit of freshwater flows between the river and the wetland.

Construction of Velanthara embankment of the surface has limited flood pulse interactions with surface waters. Natural forests within the drainage basin have been all

replaced by plantation, which now accounts for two-thirds of its area. During 1988-2015, marshes and agriculture decreased by nearly 18% and 7% respectively, while plantation and settlements increased by nearly 17% and 11% respectively. Replacement of native species with Acacia and Eucalyptus trees has skewed the natural soil moisture regimes. Marshes around Sasthamkotta have been converted to agricultural fields.

Untreated waste discharge from shoreline settlements and industries have increased. During non-monsoon periods, pockets of low dissolved oxygen are formed around Velanthara embankment, Bharanikavu Town and Sasthamkotta Town. Despite significant sanitation coverage, the levels of coliforms (both total and faecal) have been found to be beyond the permissible limit across all stretches of the lake.



Natural forests in Sasthamkotta catchment
have been converted into plantations

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Low primary production, low nutrient concentrations and hydrological fragmentation are some of the factors leading to lower species richness in Sashamkotta, as compared to adjoining marshes and Ashtamudi Estuary located in the downstream. Within fish species there is a significant decline in the population of *Horabagrus brachysoma* and *Etroplus suratensis*, whereas *Tachysurus malabaricus* and *Macrobrachium* are believed to have been nearly eliminated. The already meagre fishery is under stress due to unsustainable fishing practices as the harvest of broods and disturbance in breeding areas. Removal of natural shoreline vegetation as Screw Pine is also a significant stressor, as their roots served as nesting grounds for many fish species. Invasive macrophytes as *Salvinia* and *Eichhornia crassipes* are increasingly occurring along the shorelines.

Key management issues

Designation of Sasthamkotta as a Ramsar Site commits the Ministry of Environment, Forest and Climate Change, Government of India and Government of Kerala to take measures for wetland wise use in order to maintain full range of ecosystem services and biodiversity values in the long run. This following management issues constrain achievement of these commitments.

High risk of adverse change in ecological character

Shrinkage in inundation regime, the progression of shoreline towards a marsh dominated stage, and impaired connectivity with Kallada River are adversely impacting ecological character. Frequent emergence of pockets of low water quality and stress on species habitats further

accentuate the pace of change. At the same time, the abstraction of water from the wetland to meet water supply requirements have been on the increase, without consideration of ecosystem implications.

Increasing climate vulnerability

Trends of declining south-west rainfall are also likely to accentuate ongoing changes, and increasing the risk of terrestrialization, unless appropriate interventions to maintain hydrological regimes are made.

Pollution Control Board notification of 2010. The provisions of Wetlands (Conservation and Management) Rules, 2017 are not fully complied with. The zone of influence as required to be specified under the rules has not been designated, nor a listing of regulated activities done.

Monitoring and evaluation

There is no system in place to comprehensively assess the status of wetland, and the impact of various interventions. Along similar lines, effectiveness assessment of current management is also required to be able to enhance existing management arrangements.

Towards Integrated Management

In line with wise use commitments, the Center for Water Resources Development and Management (CWRDM) formulated a management plan for Sasthamkotta in 2001, which was approved for implementation by MoEFCC with funding being made available to undertake catchment conservation and training and awareness programmes. However, a prolonged phase of drying in 2009-10, prompted the State Government to call for a revision of management plan, specifically taking into account hydrological aspects. The revised plan however was not approved by the Ministry and further clarifications sought on the proposed action plan. In 2012, the Department of Environment and Climate Change initiated a reformulation of the management plan, building on

Absence of any mechanism for ensuring sectoral coordination

While a number of sectoral programmes are being implemented in the region around Sasthamkotta, there is no mechanism available to ensure cross-sectoral coordination at the level of lake's drainage basin to prevent any adverse change. The State Wetland Authority Kerala has been constituted only recently and the terms of reference and action programme concerning Sasthamkotta and other priority wetlands is yet to be articulated. .

Weak enforcement of regulations

While there are ample regulatory mechanisms in place, their enforcement continues to be a challenge. Field investigations indicated a rampant violation of Kerala

the existing work, but ensuring conformity to MoEFCC requirements as well as that of Ramsar Site management planning recommendations of the Convention. Wetlands International South Asia and CWRDM were jointly entrusted with the task of preparation of the management plan.

Integrated management of Sasthamkotta requires strategies that can ensure provisioning of societal benefits while ensuring the maintenance of its natural functioning and biodiversity. Given the role of hydrological processes in governing the ecological character of Sasthamkotta, there is a need to mainstream its full range of ecosystem services and biodiversity values in management of River Kallada Basin management, to achieve wise use outcomes.



The following strategies have been identified for restoring the ecological health of Sasthamkotta:

Creating an institutional setup for integrated management

Integrating management of Sasthamkotta requires a dedicated institution for coordinating implementation of sectoral action plans, maintaining an overview of wetland status and trends, promoting stakeholder engagement and representing concern related to the wetland in sectoral planning. It is envisaged to constitute a Sasthamkotta Management Unit under the aegis of State Wetlands Authority Kerala for integrated management of Sasthamkotta. An important task of the unit will be to ensure mainstreaming of the full range of ecosystem services and biodiversity values of Sasthamkotta within the sectoral planning for agriculture, fisheries, rural development, tourism, forestry and wildlife and others.

Stakeholder led management

In line with the wise use philosophy, implementation of management plan is envisaged to be stakeholder led. Proactive measures would be taken to seek community consent and endorsement for specific actions, involve communities in implementation and post intervention monitoring. The local self-governments would be the key institutions driving wetland management.

Integrated wetland monitoring and assessment system to guide management

As a dynamic ecosystem, Sasthamkotta is prone to changes in response to a number of anthropogenic as well as natural drivers. Having a system to detect such changes, in particular, human induced adverse change in ecological character, is critical for success of management. Equally important is the need to periodically assess the effectiveness of management in terms of ability to achieve wise use with broad stakeholder participation. An integrated wetland inventory assessment and monitoring system is therefore proposed to be put in place to address the diverse information needs for managing Sasthamkotta and undertake mid-course correction if any. A research strategy to address the gaps in existing knowledgebase and assess future risks will form an integral part of the system. It is proposed that CWRDM is mandated to manage the monitoring system with systematic reporting to Sasthamkotta Management Unit.

Harmonizing water abstraction with ecological condition

Hydrological assessments underline the need to link any water abstraction with ecological condition of the Sasthamkotta, particularly, stability of its hydrological regimes. It is therefore proposed to link water abstraction from Sasthamkotta to the quantum of rainfall received. The management plan also includes a proposal for alternate water supply to Kollam City, as reduction in water off-take in Sasthamkotta will result in reduced water availability to the city.

Enforcing regulation

The Wetlands (Conservation and Management) Rules, 2017 provide the necessary regulatory framework for management of Sasthamkotta as it is designated as a Ramsar Site. The Rules require clear demarcation of wetland boundary and its zone of influence, and prohibiting a number of detrimental activities including

reclamation, discharge of untreated wastes and effluents, solid waste dumping, construction of permanent nature and any activity likely to have adverse impact on ecosystem. The 2010 Notification of Kerala State Pollution Control Board, prohibit a range of polluting activities within 500 m periphery of the lake and agriculture activities within 100 m periphery of the lake.

Mining of sand from alluvial plains of Kallada River has also been banned by the State Government. The management plan envisages enforcement of the aforementioned regulations with the identified agencies, in order to maintain and improve ecological health of Sasthamkotta. Notably, controlling pollution is urgently required to slow down transition of Sasthamkotta towards a marsh dominated stage.

Integrating Sasthamkotta in Kallada River Basin management

The ecosystem services of Sasthamkotta have a critical role in functioning of River Kallada. Conversely, land and water related human activities within River Kallada Basin can have significant influence on ecological character of Sasthamkotta and associated wetlands. It is of utmost importance to recognize the value of Sasthamkotta within management of river basin and integrate these into water sector planning

In October 2017, the State Wetlands Authority reviewed the management plan in its meeting of the Steering Committee and endorsed for implementation. The management plan has been submitted to the MoEFCC for funding support.

Kerala was ravaged by the unprecedented floods in August 2018. An analysis of flood inundation maps reveals that parts of landscape wherein wetlands were extensively converted, were the ones to suffer maximum damages. As measures of urban reconstruction and flood risk reduction are being identified and implemented for Kerala, it is essential that the role of wetlands is brought to fore, and integrated as “ecosystem-based solutions”. Kerala leads the country in capacity building and empowering of Panchayat Raj Institutions; these need to be capacitated on “ecosystem-based solutions”.

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RAMSAR CoP 13

Report back from Dubai



رامسار اتفاقية الأراضي الرطبة
Ramsar Convention on Wetlands
الأراضي الرطبة من أجل مستقبل حضري مستدام
Wetlands for a Sustainable Urban Future
DUBAI - COP13 - 2018 - أكتوبر

Every three years, representatives of the governments of each of the Contracting Parties to the Ramsar Convention meet as the Conference of the Contracting Parties (COP), to agree on a work programme and budgetary arrangements for the next triennium and consider guidance on a range of ongoing and emerging environmental issues. The thirteenth meeting of CoP was held from 22-29 October 2018, in Dubai, United Arab Emirates. Over 1360 participants representing 143 of the 170 parties to the Convention, as well as the International Organization Partners (IOPs) of the Ramsar Convention, UN agencies, intergovernmental organisations and non-governmental organisations attended the meeting. The theme of the CoP was 'Wetlands for a Sustainable Urban Future' drawing attention to the crucial role wetlands play in ensuring sustainable urbanization.

Wetland City Accreditation

In line with the CoP theme, the first ever designation of Ramsar Wetlands Cities took place in the Dubai meeting. The accreditation follows from CoP X (2015) Resolution of recognising cities with a special designation to encourage conservation and wise use of urban and peri-urban wetlands. Twenty three applications were received of which 18 were finally recommended, and mayors and municipal authorities given accreditation certificates at the meeting. The cities include: Changde, China; Changshu, China; Dongying, China; Haerbin, China; Haikou, China; Amiens, France; Courteranges, France; Pont Audemer, France; Saint Omer, France; Lakes by Tata, Hungary; Changnyeong, Republic of Korea; Inje, Republic of Korea; Jeju, Republic of Korea; Suncheon, Republic of Korea; Mitsinjo, Madagascar; Colombo, Sri Lanka; and Ghar el Melh, Tunisia.

The Global Wetlands Outlook

The CoP also marked the release of the first of its kind assessment of status and trends in wetlands in the form of Global Wetlands Outlook 2018 report. The report reaffirmed the rapid rate of loss of natural wetlands – natural inland and coastal/marine wetlands declined by nearly 35% during 1970 and 2015, almost three times the rate of known forest loss. In contrast, human made wetlands, largely reservoirs and rice paddy, almost doubled over this period. The increase in human made wetlands has not compensated the losses in natural wetlands. As a result, since 1970, nearly one quarter of wetlands dependent species are threatened with extinction, particularly within the tropics. Drainage and conversion, pollution, the introduction of invasive species, extraction activities, and other actions affecting the water quantity and frequency of flooding have been cited in the report as the major direct drivers of change. These are in turn influenced by indirect drivers, related to the supply of energy, food, fiber, infrastructure, tourism and recreation.



Recommended actions include enhancing the network of Ramsar Sites and other wetlands protected areas, integrating wetlands into planning and policy making of post 2015 development agenda, strengthening legal and policy arrangements, integrating diverse perspectives into wetlands management, applying incentives for communities and business and improving overall knowledgebase on wetlands extent. The full report can be downloaded from the Ramsar Convention website at the link <https://www.global-wetland-outlook.ramsar.org/outlook>.

Improving the Effectiveness of the Convention

The Conference had a rather heavy start with consideration of two resolutions asking major shifts in Ramsar Convention governance, towards increasing the role of Contracting Parties and their nominees in decision making processes. The United States introduced the proposal to retire multiple groups. Switzerland presented a draft resolution to restore the strategic role of the Standing Committee in substantive matters, and reduce the focus on procedural issues. The two resolutions were discussed at length in the contact groups. Several parties expressed unease on the fleeting changes and dismantling the current structure without clarity on benefits, representation issues and overall transition costs. As a way forward, the parties agreed to consider the proposal in the next meeting and agreed to establish an effectiveness working group. The working group has been tasked with reviewing the existing governance structure, and recommend revisions that would further enhance effectiveness, including cost-effectiveness, and recommend implementation strategy.

The Status of Ramsar Sites

Wetlands designated to the List of Wetlands of International Importance forms an essential element of Convention implementation. With over 2,300 designated wetlands, the network of Ramsar Sites by far represents the most extensive network of protected areas designated for management purposes. Yet, the management of Ramsar Sites has been a consistent challenge for various reasons, and the Contracting Parties have been adopting suite of resolutions at each CoP to address these.

At Dubai, the parties adopted a resolution on the status of Ramsar sites, thus agreeing to regular updation of Ramsar Information Sheets, and the value of online information. Notably, the Ramsar Information Sheets which provide the status and trends in the Ramsar Sites have pending updates from as many as 69% of the sites. A resolution on Ramsar Advisory Mission (proposed by Burkina Faso) calling for an increased number of such missions was adopted so that Contracting Parties could gain access to technical advice for addressing degradation of sites listed under Montreux Record (a list of Ramsar Sites undergoing or having undergone an adverse change in their ecological character). Parties also adopted a resolution on Ramsar Regional Initiatives as a mechanism for strengthening capacity and enhancing outreach on wetlands, and furthering the implementation of the Ramsar Convention Strategic Plan.

United Arab Emirates' proposal for formal recognition of World Wetlands Day by the United Nations General Assembly received support from all member countries.

The resolution on rapid assessment of wetlands ecosystem services to assist in management planning (proposed by South Korea) further enhances the suite of technical guidance on wetlands management planning.

Advancing agendas related to wetlands and climate change

In recent years, climate change has been a significant theme of resolutions adopted by the CoP, and the trend continued in this meeting as well. Specific attention was drawn on carbon sequestered by coastal wetlands (blue carbon) and peatlands.

The Contracting Parties adopted Australia's proposal to promote conservation, restoration and sustainable management of coastal blue carbon ecosystems, despite initial debates on lack of a single adopted definition of usage of the term 'blue carbon'. The resolution encourages parties with coastal blue carbon ecosystems within their territories to integrate carbon fluxes related to these ecosystems within the national greenhouse gas inventories. Parties also agreed to prevent degradation of these ecosystems as part of climate change mitigation and adaptation measures.

The peatland conservation agenda within the Convention was further bolstered by the adoption of two resolutions (moved by the European Union). The first of these calls for the restoration of degraded peatlands for achieving climate change mitigation and adaptation, and is largely a reaffirmation of similar resolutions adopted in the past conferences. The resolution on guidance for identifying peatlands as potential Ramsar Sites for global climate change regulation speaks to embedding peatlands within Ramsar Site designation criteria.

The resolution on sustainable urbanisation, climate change and wetlands (proposed by UAE) brings to fore the role urban and peri-urban wetlands in supporting climate change mitigation and adaptation in urban spaces. Tunisia led resolution on cultural values, indigenous peoples and local communities, and climate change mitigation and adaptation in wetlands emphasises on human dimensions, particularly those of indigenous and local communities in developing climate change solutions.

Wetlands and Agriculture

Agriculture by far remains one of the most significant drivers of wetlands degradation, yet the agenda on agriculture wetlands interactions has seen a cautioned approach by the Contracting Parties. Food security concerns and agriculture subsidies have been very major departure elements. While some success was made in the past by recognition of rice paddies as wetlands, and adoption of guidelines on sustainable agriculture – wetlands interactions, minimal progress on an overall has been made. During the Dubai CoP, the issue resurfaced with a draft resolution on the topic by the Czech Republic. The contracting parties reaffirmed the need to promote sustainable agriculture practices that secured wetland ecological character.

Specific Wetlands Habitats

The Philippines introduced the draft resolution on conservation and wise use of intertidal wetlands and ecologically associated habitats aimed at strengthening

international cooperation mechanisms. A resolution on enhanced conservation of sea turtle breeding, feeding, and nursery areas, and the designation of key areas as Ramsar Sites (proposed by France and Senegal) was adopted.

China drew attention to the role of small wetlands in delivering ecosystem services, and presented a draft resolution for their conservation and management, acknowledging that further guidance is required for laying down specific criteria for small wetlands. Resolutions on according priority attention to wetlands of arctic and sub-arctic region (moved by Sweden) and Wetlands of West Asia (moved by Iraq) were also adopted.

The Human Dimensions of Wetlands Management

The wetland wise use principle, which is at the core of the Convention, recognises that restricting wetland loss and degradation requires incorporation of linkages between people and wetlands, and thereby emphasises that human use of these ecosystems on a sustainable basis is compatible with conservation. The CoP has increasingly been considering human dimensions of wetlands management by adopting resolutions enabling wise use. In CoP 13, the agenda was further progressed by the adoption of a resolution on gender and wetlands, proposed by Colombia. The resolution encourages Contracting Parties in mainstreaming a gender perspective in the implementation of the Convention.

Senegal proposed a draft resolution on wetlands, peace and human security. The resolution built on the fact that degradation of wetlands often formed the root cause of human conflict in several areas, and thus restoration and management of wetlands needed to be considered within the part of solutions for addressing human security issues. Despite extended discussions, the parties could not reach consensus on the draft, and finally, the resolution was withdrawn. Senegal would pursue the matter at the forthcoming meeting of the Standing Committee.

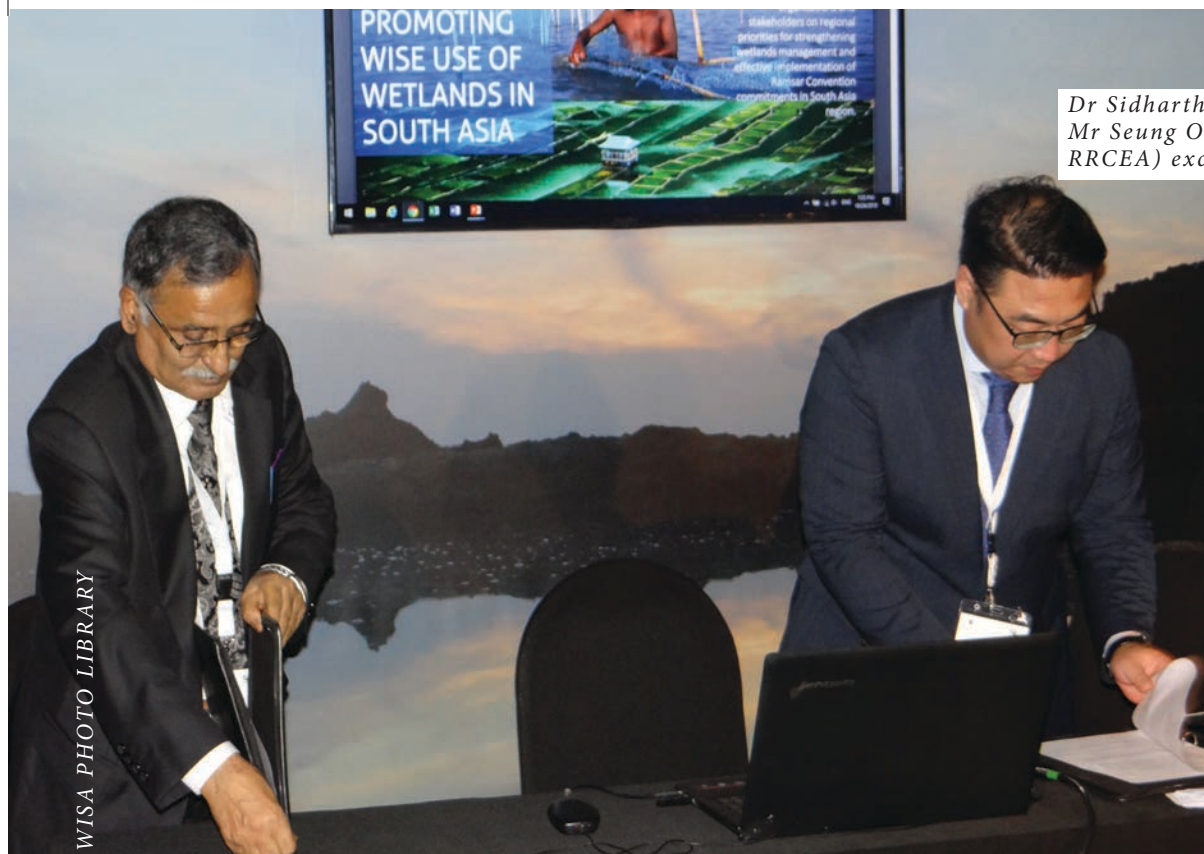
India at the CoP

The Indian delegation was led by Mr A K Jain, Additional Secretary, MoEFCC. Wetlands International South Asia worked closely with the Ministry to shape up the national position on the various draft resolutions. Intervention by the India were formally recorded on eight draft resolutions, pertaining to enhancing Convention's effectiveness, rapid assessment of wetlands ecosystem services, gender and wetlands, agriculture in wetlands, conservation and wise use of intertidal wetlands, conservation and management of small and micro wetlands, and enhanced protection and management of sea turtle breeding, feeding and nursery areas. Acting in unison, Australia, India and Uruguay pressed on the Contracting Parties to delete references related to removal of perverse subsidies endangering wetlands, on the basis that these were matters of sovereign decisions. On the resolution on intertidal wetlands, India pointed out that mangrove plantation should not encroach upon mudflats and other coastal wetlands, which have significant habitat values of their own. Other intervention were majorly directed at the Scientific and Technical Review Panel, seeking scientific assessments and guidance on using ecosystem services assessment to detect long term changes

in wetlands' ecological character, creating an inventory of gender tools, developing criteria for small wetlands, and developing new methods for conservation of turtle habitats.



Dr Sidharth Kaul (President, WISA) and Mr Seung Oh Suh (Executive Director, RRCEA) exchanging MoU



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Side Event on Promoting Wise Use of Wetlands in South Asia

Wetlands within South Asia region bear several commonalities regarding ecological connectivity, water and land management regimes governing their status and development contexts. Significant opportunities exist within the region for sharing lessons, experiences and challenges in wetlands management, so that management and governance solutions tailored to the regional context could be evolved.

Wetlands International South Asia organised a side event on promoting wise use of wetlands in South Asia to identify opportunities for regional collaboration and exchange. The first panel discussion within the National Focal Points of India, Bhutan, Bangladesh, Nepal, Sri Lanka and Myanmar surmised that the countries within the region had established national programmes seeking to strike a balance between biodiversity conservation outcomes and meeting livelihood needs of the dependent communities. However, management approaches were inadequate to address increasing fragmentation of hydrological regimes, intensifying land and water use practices and growing dependence on wetlands resources for livelihoods. The panel endorsed the idea of a regional platform for supporting the exchange of knowledge and management practices. The second panel, constituting representatives of Ramsar Regional Center East Asia, International Water Management Institute and Wildfowl and Wetlands Trust, highlighted the enabling role of the international NGOs in facilitating exchange and building capacity of wetlands managers in the application of latest knowledge and scientific advice.

During the side event, Wetlands International South Asia and Ramsar Regional Center East Asia signed a Memorandum of Understanding to promote wise use of wetlands in South Asia through capacity development, and supporting application of recent scientific and technical advancements in the management of wetlands. The MoU was signed by Dr Sidharth Kaul (President, Wetlands International South Asia) and Mr Seung Oh Suh (Executive Director, Ramsar Regional Center East Asia, South Korea).

real barrier. The release of Global Wetlands Outlook and regional outlooks give credence to the fact that the overall information on status and trends on wetlands has improved over a period, including information on the drivers of change. The need of the hour, therefore, is to translate the recommendations into positive and affirmative actions for wetlands conservation. The role of mechanisms as Ramsar Advisory Missions and Ramsar Regional Centers acquires higher prominence in enabling better monitoring of Ramsar Sites and providing handholding support to wetlands managers.

At national level, several actions emerge from the meeting. A commitment has been made to update all pending Ramsar Information Sheets by the next Standing Committee meeting. This includes reporting on the status of two sites placed on Montreux Record (namely Loktak and Keoladeo National Park). The commitment to implement the Ramsar Strategic Plan 2016-24 would need to be backed up with developing national targets and aligning the same with implementation of the national programmes. The various technical resolutions would need to be embedded with site management planning and implementation, in collaboration with state governments. New advancements in wetlands inventorying and mapping would be brought in the implementation of the externally aided projects, to benefit wetlands managers and state governments.

By the next CoP, the Ramsar Convention will turn fifty years. As a pre-Rio multi-lateral environmental agreement, Ramsar is well-considered as a harbinger of integrated thinking on water in general and wetlands in particular. As water is increasingly becoming a contested resource, Ramsar has a unique opportunity to promote the role of wetlands as providers of water. However to take this role, the Convention would need to get over the internal reorganization challenges as quickly as possible and reaffirm a strong technical agenda, backed by sound science and political support of the Contracting Parties.

CONTRIBUTED BY: Dr Ritesh Kumar (Conservation Programme Manager, WISA)

Conclusion

In summary, the Conference of Parties saw advancement of agendas related to wetlands and climate change and management of habitats of high ecological significance. The Global Wetlands Outlook presents a very sobering picture of international and national efforts of wetlands conservation. With over three hundred recommendations and resolutions adopted in the various CoP meetings thus far, implementation rather than further scientific advice is acting as the

TOOLS

Rapid assessment of wetland ecosystem services

To achieve wise use of wetlands the Ramsar Convention calls upon wetland managers to recognise important functions and multiple values of wetlands ensuring that their role is reflected and contributes to the global policy processes such as the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction and the Paris Agreement on climate change. To achieve the mission of the Ramsar Convention as laid out by the Strategic Plan 2016-2024, a priority area of focus recognises the need to enhance information about ecosystem functions and the ecosystem services that wetlands provide to people and nature.

At the 13th Ramsar Conference of Parties meeting at Dubai, a resolution on rapid assessment of wetlands ecosystem services was adopted. The resolution calls upon contracting parties to synergize the conventions language with other environmental agreements and increase efforts to communicate values of ecosystem services in other sectors, plans, regulation and advocate for integration within land use plans and sectoral policies.

Time, resources, access, capacity and participation of local communities have limited wetland management practitioners attempts to recognise the functions and include the multiple benefits of wetlands ecosystem services within policies and planning. To overcome such limitations and barriers for including the multiple value of wetland ecosystem services into decision making and planning, Ramsar Convention has developed an approach “rapid assessment of wetland ecosystem services” (RAWES) as an example to facilitate assessment of wetland ecosystem services which are less time intensive, with limited resources and can be applied to different spatial scales.

The approach is simple to apply and requires only one-two persons to conduct the assessment which can typically take less than two hours. The approach puts the onus on the assessor to define the wetland but asks the assessor to define the condition of the wetland at the time due to the dynamic nature of a wetland.

The RAWES approach is flexible allowing users to assess entire wetlands or specific habitats within wetlands and modify the list of ecosystem services as found appropriate. The method encourages interaction with stakeholders so that assessments are informed by local perspectives and indigenous knowledge ensuring all services are recognised. Through a simple training the assessor is encouraged to recognize a set of ecosystem services and assign degrees of importance. The tool can be usefully applied by managers while formulating management plans or developing communication and education products. RAWES does not replace the need for comprehensive biophysical, socioeconomic and institutional assessments required to for a fuller assessment of status and trends in wetlands ecosystem services.

Ecosystem Services Shared Value Assessment

The perceptions, attitudes and preferences humans hold for ecosystem services are important elements for engendering changes in the way's stakeholders engage with management of wetlands. In an attempt to understand behavioural dimensions of ecosystem services for integration in wetland management planning and decision making, an Ecosystem Services Shared Value Assessment (ESSVA) tool developed by International Lake Environment Committee (ILEC) was piloted during the year under Partners for Resilience (PfR) programme for assessing stakeholder perceptions, attitudes and preferences for wetland ecosystem services.

The tool uses a structured questionnaire to engage with stakeholders in discussion regarding management of ecosystem services. Behavioural data is elicited through a structured questionnaire having seven sections. The first two sections contain questions on the demographic and socio-economic data aspects of the household, and relationship with the wetland. The third section has questions on identification and ranking of various ecosystem services, considered relevant by the responding households. The causes and impacts of impairment of ecosystem functions are assessed next, both in terms of human health, cultural values and economic consequences. Questions on responsibilities and ownership are included in the fifth section, followed by section on role in basin governance and possible improvement. The questionnaire uses pictures depicting various options, thus enabling the respondent to relate each choice to a visual state. A primary purpose of the questionnaire is to engage the stakeholder in discussions regarding management of ecosystem services, from the respondent's frame of reference.

Tampara, a freshwater wetland on the east coast of Odisha State was selected as a demonstration site, wherein Wetlands International South Asia is formulating an integrated management plan for wetland wise use. The wetland, spanning 409 ha within a basin of 2,200 ha, is the primary source of water for over 25,000 households living in Chattarpur Municipality, and irrigation in and around. The lake is also an important source of fish, and aquatic aromatic Pandanus, sustaining livelihoods of over 700 households.

Overall, 1% of the basin population living within eight of the 15 basin villages were selected for ESSVA questionnaire survey. The households were selected based on stratified random sampling to ensure an appropriate representation of stakeholder occupations, geographical location and asset ownership. The questionnaire was developed through focal group discussions in three villages conducted during February 2018, and further modified through pilot testing in 30 households. The surveys were conducted during March – April 2018 by a group of trained surveyors.

The communities identified 19 ecosystem services (6 provisioning 6 regulating and 7 cultural services) as being derived from the wetland. When eliciting as a group, the respondents ascribed statistically significant higher values for 5 of the 6 provisioning services. Similarly, differences in mean scores for disaster risk reduction functions and select cultural services (religious values, aesthetic values, and education values) were statistically significant.

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24

Factor analysis of demographic, socioeconomic and environmental relationship data led to identification of eight variables which accounted for 68% variability within the data. Direct use of wetland and location within basin accounted for 19% of variance, occupation and distance from the wetland accounted for 18% of the variance, gender and ecosystem awareness 17% of the variance and age and income explained 14% of the variance. The rankings ascribed to provisioning services mapped with the occupation categories (a fisher ranked fishing as the highest and a farmer to the provision of water for irrigation). However, communities which had a lesser direct dependence on the wetlands for livelihoods (such as business owners, wage labourers and private sector employees) ranked the regulating and cultural services as a highest preference.

Spatial location was observed to have a distinct influence on ecosystem service preferences. Awareness of ecosystem services amongst upstream communities was higher in the upstream reaches as compared with downstream reaches (99% significance). In general, the scores for provisioning and regulating services were higher for the communities located in the downstream, whereas the scores for cultural services were comparable. Scores ascribed to provisioning and regulating services by communities living within 500 meter from the lake shoreline than those living further away.

While all communities ranked the impact from wetland degradation on their health and economy to be high, the scores of the upstream communities were higher. The upstream communities also ascribed the possibility of improvement of wetlands ecosystem health to the higher than the downstream communities.

Regarding roles in the management of wetland, communities having a direct dependence on the wetland ranked their role as an individual to be higher as compared to that of the municipality or the state and central government. Communities with lesser direct dependence on wetlands (those engaged in businesses and private service) felt that the state government had a major role to play in ensuring that wetland ecosystem services are sustained.

Technocratic and expert-driven assessments of ecosystem services are likely to render a simplistic view of ecosystem services, without indicating underlying social factors which have a bearing on the perceptions, preferences and attitudes towards ecosystem services. Gaining such a nuanced understanding is crucial to engage communities systematically in management for wise use of wetlands. Through the use of tools such as ESSVA, it is possible to dive deeper into factors which define the relationship communities have with wetland ecosystem services and use the assessment outcomes to develop a shared view of ecosystem services, trends therein, and possible restoration options.

CONTRIBUTED BY: Dushyant Mohil (Project Manager, WISA)





WORLD WETLANDS DAY 2019

Wetlands: The key to coping with Climate Change

February 2 is World Wetlands Day. This day marks the adoption of the Convention on Wetlands and is an opportune moment for promoting, creating awareness and ensuring positive actions for the conservation of wetlands. In the Ramsar's 13th Conference of Parties meeting, a resolution was adopted for recognition of this day by the United Nations General Assembly.

The 2019 theme for World Wetlands Day is 'Wetlands and Climate Change'. The theme brings to fore the essential role wetlands have in mitigating climate change as well as assisting humanity to adapt to the climate change impacts. Recent climate change assessments predict stresses on wetlands, through atmospheric and sea surface temperature increase, changes in hydrology and sea-level rise, and deepening of direct and indirect drivers of degradation. Yet wetlands have a crucial role in buffering society against the impacts of climate change through their role in the carbon cycle, climate adaptation and resilience. Conservation and wise-use of wetlands and preventing loss and degradation of these ecosystems is essential in meeting climate goals, yet is insufficiently considered in climate policy and planning processes.

Wetlands help in the mitigation of climate change by acting as natural carbon sinks. They are touted to contain 12% of the global carbon pool and play an important role in the global carbon cycle. Coastal wetlands – mangroves, tidal mudflats, seagrass beds, famed as “blue carbon ecosystems” act as significant carbon sinks. Seagrass beds sequester around 10 per cent of all ocean sequestered carbon annually. Coastal wetlands have an essential role in reducing the vulnerability of communities to rising seas and coastal hazards, through their role in sediment capture, vertical accretion, erosion reduction and wave attenuation.

It is also pertinent to ensure that wetlands are not subject to risks of ‘maladaptation’ – adaptation practices and interventions in one sector leading to enhanced vulnerability for other. For example, increasing water storage through the construction of more hydraulic structures may severely alter the natural hydrological regime of wetlands, and enhance their vulnerability. It is therefore pertinent that adaptation options account for the full range of wetlands ecosystem services, and not just ones which are related to carbon or water.

A key direction in supporting the integration of wetlands in climate change responses is provided in Ramsar Convention Resolution X.24 on Climate Change and Wetlands adopted at the tenth Contracting Parties

meeting. Specific recommendations include:

- Wise management of wetlands to reduce multiple pressures they face and thereby increase resilience to climate change, and to take advantage of significant opportunities to use wetlands wisely as a response option to reduce the impacts of climate change
- Ensure that necessary safeguards and mechanisms are in place to maintain ecological character of wetlands, particularly with respect to water allocation for wetlands ecosystems
- Promote restoration of wetlands as an important aspect of policy related to wetlands
- Promote integrated coordination in developing and implementing national policies related to water management, energy production, agriculture and human health in order to ensure that sectoral objectives are mutually supportive in addressing the likely negative impacts of climate change
- Pay attention to the potential of incentive measures and funding mechanisms under climate change adaptation and mitigation activities to support sustainable use and restoration of wetlands as well as support local livelihoods and contribute to poverty eradication.

Wetlands International South Asia shall be organizing a keynote lecture and public seminar to mark the occasion. Please watch our website <https://south-asia.wetlands.org> for further details on the event.

CONTRIBUTED BY: Nehha Sharma (Technical Officer, WISA)

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AGAINST CLIMATE CHANGE.



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**World
Wetlands Day**
2 February 2019

Wetlands and climate change



28

NEWS

Colombo accredited as wetland city by Ramsar Convention


Colombo is recognised now as wetland city by the Ramsar Convention. Eighteen cities from seven countries – China, France, Hungary, Madagascar, South Korea, Sri Lanka and Tunisia – received the prestigious accreditation during a boisterous ceremony at the 13th Conference of the Parties Meeting of the Ramsar Convention (COP13) in Dubai. The Wetland City Accreditation scheme encourages cities in close proximity to and dependent on wetlands – especially designated Ramsar Wetlands of International Importance – to promote the conservation and wise use of urban and peri-urban wetlands, as well as sustainable socio-economic benefits for local people.

Colombo Wetland Complex (CWC) comprises several contiguous wetland areas spreading over 1,900 ha. Wetlands of Beddagna, Thalawatugoda, Kimbulawela, Madiwela, Kolonnawa, Crow Island, Talangama, and Beira of the CWC represent freshwater marshes, lakes and paddy fields, prominent features of the complex.

The wetlands of Colombo provide a range of ecosystem services and our vital in protection from floods holding up over 39% of storm water. The wetland park within CWC serves as good examples of inclusivity and participation of local communities. According to the wetland management strategy of CWC, over 87% of all the wetland areas currently provide food to the citizens of Colombo. Efforts by the government and other stakeholders have led to a number of policies, legislation and regulatory instruments that support wetland conservation and are a testament to the efforts taken in safeguarding the integrity of the wetlands. CWC is exemplary wetland management strategy where wetlands are integrated within development practices.

A Ramsar regional initiative for Indo-Burma Region

The Indo Burma Ramsar Regional Initiative (IBRRI) is a new initiative of the Ramsar Convention to support the effective implementation of Ramsar Strategic Plan in five lower Mekong countries Cambodia, Lao People's Democratic Republic, Myanmar, Thailand and Vietnam.



*Wetlands are a natural buffer
for the City of Colombo*

The regional initiative aims to:

- promote science and technical cooperation for research on management and wise use of wetlands
- develop management plans and regulatory/management tools for wetlands
- promote regional dialogues on wetland conservation policy
- support capacity building initiatives by developing training and educational programmes and raising awareness on wetlands.

The Strategic Plan for the Regional Initiative for 2019-2024, developed as an outcome of Annual Meeting held in August 2018, is structured along five objectives, namely: a) Facilitate and promote wetland knowledge and experience sharing, b) Support integrated management of Ramsar Sites and other wetlands and ensure conservation of key wetland species in the region, c) Assist with the development and/or strengthening and implementation of policy framework taking into account wetland management and conservation across sectors at all levels, d) Support wetland communication, capacity building, education, participation and awareness, and e) Ensure sound and sustainable governance and management of the Regional Initiative.

Wetlands International South Asia is a member of the technical committee of the initiative, and has assisted in development of the strategic plan.

Regional workshops to build capacities of Indian wetlands managers

Wetlands management cuts across disciplines, sectors and stakeholders. Building the capacity of wetlands managers is therefore crucial for ensuring that wetlands are managed sustainably. Wetlands International South Asia is working with the Wetlands Division of the Ministry of Environment, Forest and Climate Change to train government officials entrusted with the management of wetlands in application of best practices and integrated approaches.

Wetlands Division of the Ministry of Environment, Forest and Climate Change is conducting regional capacity development workshop for wetland managers across different states in India. Three such workshops have been conducted during 2018 for the states of the eastern region (held at Botanical Survey of India, Kolkata) north-east (held at Sikkim) and south (held at Coimbatore). These workshops are significant engagement and learning opportunities for wetland managers and policy planners.



Dr Balachandran (BNHS), Dr Ritesh Kumar (WISA), Ms Manju Pandey (Joint Secretary, MoEFCC) and Dr Ajit Pattnaik (Vice President, WISA) at Tsomgo, Sikkim during regional workshop.

India adopts a national plan for Central Asian Flyway

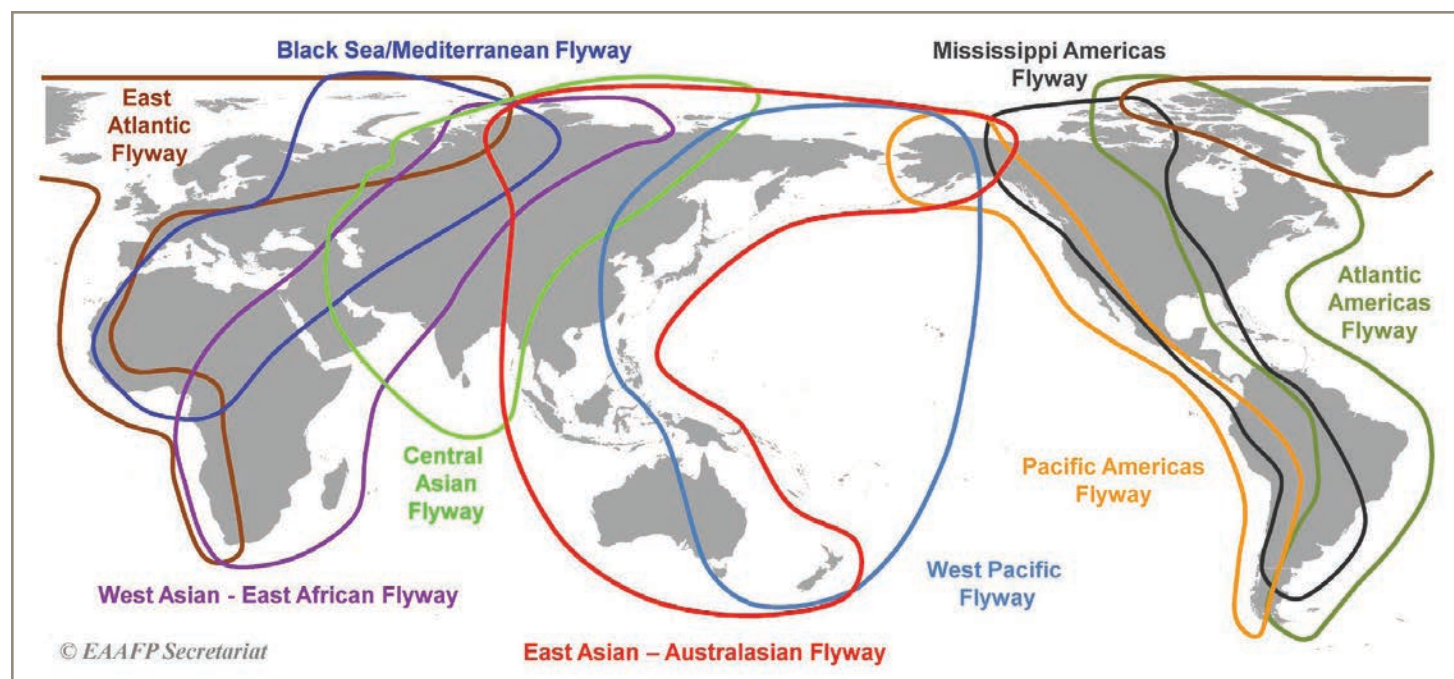
In 2005, Wetlands International had supported organisation of a meeting of range countries to endorse the proposed Central Asian Flyway Action Plan for conservation of migratory waterbirds and their habitats. One of the committed actions was the development of national action plans by the range countries. In 2018, the Ministry revisited its engagement in the Convention on Migratory Species and offered to host the 13th Conference of Parties meeting in India. As a part of various measures, it was also decided to draft a National Action Plan for the Central Asian Flyway.

Wetlands International South Asia was part of a three-member committee set up by the MoEFCC to draft the National Action Plan.

The long-term goal of the National Action Plan is to arrest population decline and secure habitats of migratory bird species. In short-term, the action plan seeks to halt the downward trends in declining meta-populations and maintain stable or increasing trends for healthy populations by 2027.

Six objectives of the action plan are: a) Halt and reverse decline of migratory birds; b) Reduce pressure on critical habitats by management based on landscape approaches; c) Develop capacity at multiple levels to anticipate and avoid threats to habitats and species undergoing long-term decline; d) Improve database and decision-support systems to underpin science-based conservation of species and management of habitats; e) Sensitize stakeholders to take collaborative actions on securing habitats and species; and, f) Support trans-boundary co-operation to secure migratory bird species and habitats in range countries.

The action plan was adopted by the Ministry of Environment, Forest and Climate Change in September 2018, and shall be implemented over 2018-2023. Wetlands International South Asia shall continue to support the implementation of the action plan, particularly in the areas of wetlands management planning using landscape approaches, and capacity development of wetlands and wildlife managers.



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FOR PEOPLE AND NATURE.



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