

Jindal School of Environment & Sustainability
cordially invites you to the

GUEST LECTURE & WORKSHOP

Since 2016, the National Institute of Urban Affairs (NIUA) and the National Mission for Clean Ganga (NMCG), Ministry of Jal Shakti (MoJS), have been working collaboratively to advance river-sensitive urban development, in alignment with the Hon'ble Prime Minister's visionary call to reimagine India's river cities. Managing urban rivers represents an emerging paradigm in India. The rejuvenation of rivers cannot be achieved without corrective and comprehensive actions undertaken by cities within their jurisdictions.

The river-city connection is a symbiotic relationship that must be nurtured, particularly to enable long-term and transformative solutions for river rejuvenation. With the support of NMCG, NIUA developed the Urban River Management Plan (URMP) Framework to help river cities systematically and holistically plan interventions to revive and sustainably manage rivers within their administrative limits.

To further this mission, we aim to strengthen engagement with academic institutions, particularly under the umbrella of the River Cities Alliance (RCA). In line with this objective, a two-member team will visit the School of Environment and Sustainability, O.P. Jindal Global University, Sonipat, on **28th October 2025** to deliver a guest lecture and conduct a student workshop.

TUESDAY, 28TH OCTOBER 2025

11:00 AM to 3:00 PM

**Room no. M87, Aruna Abhey Oswal Academic Block
O.P. Jindal Global University, Sonipat-131001**

INTRODUCTION BY THE DEAN >>>

11:00 am – 11:15 am



Prof. (Dr.) Abhiroop Chowdhury
Dean
Jindal School of
Environment & Sustainability

GUEST LECTURE >>>

11:15 am – 12:45 pm

**Urban Rivers, Challenges and
Management Aspects**

WORKSHOP >>>

01:30 pm – 03:00 pm

**Water Body Rejuvenation for Urban
River Management, Session on
Urban Water Body Diagnostic Tool**

VOTE OF THANKS >>>

03:00 pm – 03:05 pm

GUEST LECTURE | 11:15 AM – 12:45 PM

on



Urban Rivers, Challenges and Management Aspects

Rivers are circulatory systems; they are a dynamic ecosystem. Urban rivers are vital ecological corridors that support biodiversity, provide essential ecosystem services, and contribute to the cultural and economic fabric of cities and provide critical resources for human settlements. However, rapid urbanisation, industrialisation, and unsustainable land-use practices have profoundly altered their natural flows and degraded water quality. Understanding the challenges faced by urban rivers requires an interdisciplinary lens—drawing from ecology, hydrology, urban planning, and social sciences. In this lecture, we will examine the key characteristics of urban rivers, challenges and explore frameworks for their sustainable management and ecological restoration.

SPEAKER

Moumita Karmakar

**Senior Programme Associate
Water and Environment Vertical at the
National Institute of Urban Affairs (NIUA)**



Moumita Karmakar has joined the Water and Environment vertical at the National Institute of Urban Affairs (NIUA) as a Senior Programme Associate. Moumita is an environmental scientist, aquatic ecologist and paleolimnologist with over 10 years of multidisciplinary experience across academic, research, and applied environmental domains in India and abroad.

Before joining NIUA, Moumita, led field-based and laboratory research focused on microscopic analysis of freshwater algal communities, development of AI-powered microalgal classification systems, and sediment coring for lake bioremediation projects across the Delhi-NCR, Gautam Buddha Nagar and Haryana for a start-up company. Previously held academic roles at Shiv Nadar Institution of Eminence between 2017 and 2023, including Assistant Professor in the Water Science and Policy Programme.

Her research career began in North America, where she held positions as a Postdoctoral Fellow at the University of Moncton, Shippagan campus, Canada, and as a Research Assistant at Queen's University (Canada) and Kent State University (USA). Her Ph.D. research at Queen's University focused on reconstructing Holocene climate variability and its ecological impacts on boreal lakes using fossil diatoms and chironomids, earning her multiple awards including the Queen's Graduate Student Award, the Graduate Dean's Doctoral Field Travel Grant, and the American Quaternary Association Student Travel Award. She has authored and co-authored peer-reviewed publications in international journals and has presented her work at national and international conferences.

Beyond academia, Moumita is actively engaged in science communication, contributing multiple thought pieces to *Down To Earth* on issues such as algal blooms, microplastic pollution, and waterbody conservation.



Faculty Coordinator

Dr Rahul Devrani

Assistant Professor,
Jindal School of
Environment & Sustainability

WORKSHOP | 01:30 PM – 03:00 PM

on



Water Body Rejuvenation for Urban River Management, Session on Urban Water Body Diagnostic Tool

Rivers, lakes, ponds, and wetlands in cities are all part of the same water system. A river is like the main channel, while smaller water bodies play important roles like storing water, recharging groundwater, supporting biodiversity, and keeping the city's climate cooler. These water bodies help in flood control, provide water for various uses, offer spaces for recreation and cultural activities, and support local livelihoods. However, despite these many benefits, water bodies in cities are disappearing fast. Many are shrinking, becoming polluted, or getting completely encroached upon. In India, the AMRUT 2.0 Mission of the Ministry of Housing and Urban Affairs (MoHUA) lists the rejuvenation of water bodies as one of its key priorities, aiming to improve both water supply and the environmental quality of cities. The diagnostic tool developed by National Institute of Urban Affairs (NIUA), UNESCO, New Delhi and National Mission for Clean Ganga (NMCG) is based on assessing the current status of urban water bodies in terms of four dimensions: Physical, Chemical, Biological, and Management. The tool uses an indicator-driven approach, comprising both outcome-based and process-based indicators to evaluate the four dimensions.



SPEAKER

Jyoti Verma

**Civil Engineer and Environmental Planner from
CEPT University; Senior Research Specialist at NIUA**

Jyoti Verma is a Civil Engineer and Environmental Planner from CEPT University, working as a Senior Research Specialist at NIUA. She has over nine years of experience in water, sanitation, and river rejuvenation. She is passionate about water and the environment, and believes that even small changes can make a big difference. Her work helps urban decision-makers adopt a systems-thinking approach to address environmental challenges. She played an essential role in establishing the River Cities Alliance (RCA), a one-of-a-kind platform for river cities comprising 144 cities across India. She has also contributed in the development of toolkits and frameworks that can be adopted by all the urban agglomerations, such as the toolkit for preparing a city-level action plan for the reuse of treated used water, Standard Operating Procedure (SOP) for conducting river-sensitive gatherings along the river banks.

She also worked on developing a rapid impact assessment framework for the Drink From Tap (DFT) mission in Odisha. The framework helped evaluate system efficiency, consumer perception, and sustainability in 24 cities across Odisha to measure the impact of the 24x7 drink from tap water supply. Furthermore, she also worked on ecosystem-based adaptation practices, which involved conducting urban flood vulnerability assessments, designing Nature-based solutions, and engaging with local stakeholders to identify traditional practices for urban water management for the Bhubaneswar city in Odisha.

Prior to NMCG, she worked with WSUP Advisory India and got the opportunity to contribute to the country's most ambitious program Swachh Bharat Mission Urban. Her work was primarily focussed on making Visakhapatnam City Open Defecation Free (ODF) for which she worked on the development of ODF plan for the city, Faecal Sludge and Septage Management (FSSM) plan, technical feasibility assessment of pumping station and Sewer Treatment Plant (STP) for upgradation of pumping station for septage disposal as co-treatment.



Faculty Coordinator

Dr. Ayushi Srivastava

Lecturer,
Jindal School of
Environment & Sustainability