

Suddhasil Bose, Ph.D.

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D.O.B: 03.07.1992

Location: Kolkata, India

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Research Interest

Urban Ecology, Water Resource assessment, Watershed management, Sustainable Development, Spatial analysis, Evaluation of ecosystem services, Nature based solutions, Water Quality analysis, Application of Machine learning, Application of Advanced GIS and Remote Sensing techniques, Environmental and Social impact assessment, Urban Flood Risk Assessment, Sustainable Urban Planning, Urban Water Security, Climate Resilience, urban environment analytics, Natural Resource Management, Environmental Impact Analysis, Social Impact Analysis, Geospatial Machine Learning, Hydro informatics

Present Position

Adamas University
Assistant Professor-I
Department of Geography
School of Basic and Applied Sciences

Barasat, India
September, 2025 –

Research Experience

Indian Institute of Technology Roorkee
Research Associate-III

Roorkee, India
November, 2024 – June, 2025

Indian Institute of Technology Roorkee
Research Associate-I
Water Resources Department & Management
Project: Integrative and fit-for-purpose
water sensitive design framework
for fast growing livable cities (NWO-DST)
P.I: Professor M.L. Kansal

Roorkee, India
July – October 2024

Education

Jadavpur University Kolkata, India
PhD in Science June 2019 – September 2023
School of Water Resource and Engineering
Title: Urbanization and Its Impact on
Groundwater Resources: A Case Study
Guide: Professor Asis Mazumdar

Jadavpur University Kolkata, India
PGDip in Geoinformatics April 2019 – October 2020
under Computer Aided Design Centre
Division: 1st

University of Calcutta Kolkata, India
M.Sc in Geography September 2014 – October 2016
Division: 1st

University of Calcutta Kolkata, India
B.Sc in Geography July 2011 – August 2014
Minor in Economics & Sociology
Division: 2nd

Scholarship

Scheme of Scholarship for college and university students, 2011
MHRD, Govt. of India (E.C No: 2006)
for out performance in Higher secondary Examination

Award

Scheme of University Grant Commission, 2017
MHRD National Eligibility Test, awarded as
Junior Research Fellow, 2017
(UGC Ref No: 3322/NET-Jan2017)

Publications

Research Article

Identification of suitable zones and sites for rainwater harvesting to ensure urban water security in Songea, Tanzania

Mitthan Lal Kansal & Suddhasil Bose & Frank Tembi

Journal of African Earth Sciences, (2026)

DOI: <https://doi.org/10.1016/j.jafrearsci.2025.105886>

Policy framework for water sensitivity in the secondary cities of India: visions and options

Mitthan Lal Kansal & Suddhasil Bose

Water Policy, (2025)

DOI: <https://doi.org/10.2166/wp.2025.063>

Ecosystem services importance in stormwater management and flood risk mitigation through InVEST model—a case study on MCD zones of Delhi

Mitthan Lal Kansal & Suddhasil Bose

Sustainable Water Resources Management, (2025)

DOI: <https://doi.org/10.1007/s40899-025-01202-x>

Exploring groundwater quality dynamics: a holistic study of Kolkata and its peri-urban surroundings

Suddhasil Bose, Subhra Halder and Asis Mazumdar

Sustainable Water Resources Management, (2024)

DOI: <https://doi.org/10.1007/s40899-024-01168-2>

Remote sensing insights for sustainable development: Water quality and landscape dynamics in Mirik Lake, Darjeeling District, West Bengal, India

Subhra Halder and Suddhasil Bose

Cleaner Water, (2024)

DOI: <https://doi.org/10.1016/j.clwat.2024.100024>

Changing urban land types and its locational impact on groundwater resources: a case study on Megacity Kolkata

Suddhasil Bose, Asis Mazumdar and Snehamanju Basu

Environment, Development and Sustainability, (2024)

DOI: <https://doi.org/10.1007/s10668-024-05095-2>

Comparative study on remote sensing-based indices for urban ecology assessment: A case study of 12 urban centers in the metropolitan area of eastern India

Subhra Halder and Suddhasil Bose

Journal of Earth System Science, (2024)

DOI: <https://doi.org/10.1007/s12040-024-02321-3>

Addressing water scarcity challenges through rainwater harvesting: A comprehensive analysis of potential zones and model performance in arid and semi-arid regions—A case study on Purulia, India

Subhra Halder and Suddhasil Bose

HydroResearch, (2024)

DOI: <https://doi.org/10.1016/j.hydres.2024.04.001>

Environmental risk analysis of a Ramsar site: a case study of east Kolkata wetlands with PSR framework

Subhra Halder, Subhashish Das and Suddhasil Bose

Environmental Monitoring and Assessment, (2024)

DOI: <https://doi.org/10.1007/s10661-024-12585-3>

Groundwater sustainability in the face of urban expansion: A case study on Kolkata's ongoing challenge

Suddhasil Bose, Asis Mazumdar and Subhra Halder

Groundwater for Sustainable Development, (2024)

DOI: <https://doi.org/10.1016/j.gsd.2024.101162>

Monitoring decadal ecological degradation in Kolkata metropolitan area using comprehensive ecological evaluation index: A vision towards sustainable urban planning

Suddhasil Bose and Subhra Halder

Advances in Space Research, (2024)

DOI: <https://doi.org/10.1016/j.asr.2024.01.057>

Sustainable flood hazard mapping with GLOF: A Google Earth Engine approach

Subhra Halder and Suddhasil Bose

Natural Hazards Research, (2024)

DOI: <https://doi.org/10.1016/j.nhres.2024.01.002>

Ecological quality assessment of five smart cities in India: a remote sensing index-based analysis

Subhra Halder and Suddhasil Bose

International Journal of Environmental Science and Technology, (2023)

DOI: <https://doi.org/10.1007/s13762-023-05270-4>

Urban flood risk assessment and mitigation with InVEST-UFRM model: a case study on Kolkata city, West Bengal state (India)

Suddhasil Bose and Asis Mazumdar.

Arabian Journal of Geosciences, 16, 320 (2023)

DOI: <https://doi.org/10.1007/s12517-023-11412-2>

Evolution of groundwater quality assessment on urban area-a bibliometric analysis

Suddhasil Bose, Asis Mazumdar and Snehamanju Basu

Groundwater for Sustainable Development (2023)

DOI: <https://doi.org/10.1016/j.gsd.2022.100894>

Identification of crop suitable land using geospatial techniques and assessment with socio-economic factors—case study from India.

Suddhasil Bose and Subhra Halder

Asia-Pacific Journal of Regional Science (2023)

DOI: <https://doi.org/10.1007/s41685-023-00274-x>

Book Chapter

Evaluation of community response and resilience on climate change: a bibliometric analysis

Suddhasil Bose and Subhra Halder

Climate Change, Community Response and Resilience (2023)

DOI: <https://doi.org/10.1016/B978-0-443-18707-0.00001-1>

College Street Book Market: An Observation about Informal Sector in Kolkata

Suddhasil Bose

Perspective on Inclusive Urbanism Exploring Marginality in Kolkata, (2019)

ISBN: 978-81-925563-7-6

Conference Proceedings

Solar-Powered Pumped Storage System for Hydropower Generation

Shaurya Varendra Tyagi, Mukesh Kumar Singhal, Mitthan Lal Kansal, Venkataramana Sridhar, and Suddhasil Bose

World Environmental and Water Resources Congress 2025

DOI: <https://doi.org/10.1061/9780784486184.062>

Monitoring Change in Urbanization and Green Space for Eastern Indian Cities in 30 Years-A Comparison between Kolkata and Bhubaneswar

Suddhasil Bose, Asis Mazumdar and Snehamanju Basu

IOP Conference Series: Earth and Environmental Science (Vol. 1164, No. 1, p. 012013). IOP Publishing.(2023)

DOI: <https://doi.org/10.1088/1755-1315/1164/1/012013>

Review on Present Situation of Groundwater Scenario on Kolkata Municipal Area

Suddhasil Bose, Asis Mazumdar and Snehamanju Basu

IOP Publishing IOP Conf. Series: Earth and Environmental Science 505 (2020) 012022 (2020)

DOI: <https://doi.org/10.1088/1755-1315/505/1/012022>

Conference Presentation

Monitoring Change in Urbanization and Green Space for Eastern Indian Cities in 30 Years-A Comparison between Kolkata and Bhubaneswar

Geospatial Science for Digital Earth Observation (GSDEO) (2021)

Indian Society of Remote Sensing (ISRS), Adamas University— <https://science.adamasuniversity.ac.in/gsdeo2021/>

An overview on urban water supply-a case study on Kolkata

International Conference on Sustainable Water Resources Management under Changed Climate (2020)

School of Water Resources Engineering, Jadavpur University

Review on Present Situation of Groundwater Scenario on Kolkata Municipal Area

6th International Conference on Environment and Renewable Energy,(2020)

Hong Kong Chemical, Biological & Environmental Engineering Society— <http://www.icere.org/2020.html>

Emerging Kolkata with its migrating population making change to labour market

12th World Congress of The RSAI, *Spatial systems: Social Integration, Regional Development and sustainability (2018)*
Regional Science Association, India— <https://www.rsai.org.in/pages/world-congress>

Brief about thesis

Urbanisation and its impact on Groundwater Resources- A Case Study

Abstract: The study examines the profound impact of urbanization on groundwater resources, focusing on Kolkata, India. The rapid growth of urban areas, characterized by poorly planned expansion, has led to increased demand for water resources, particularly groundwater. Using geoinformatics and satellite data, the study spans three decades (1990-2020) to assess the evolving urban-groundwater interaction. Findings reveal that densely built-up northern Kolkata experienced a significant decline in groundwater levels, while green spaces in the south helped maintain water levels. The study also highlights deteriorating groundwater quality due to urbanization, especially in landfill areas. Urgent measures such as mass awareness, artificial recharge, and rain-water harvesting are recommended to address impending concerns like land subsidence, seawater intrusion, and health issues in Kolkata. [\[Full Thesis\]](#)

Teaching experience

Visiting Faculty

October, 2023–Present

Department of Geography (Kanyashree University)

Topic: Geospatial Analysis, Analyses of Satellite Images, Analyses of Satellite Images, Urban Morphology and Structures, Ecosystem and Ecology, Water Resource Management

Responsibilities: Teaching, assistance in GIS laboratory, assistance in examination process

Participation

Online Course on Geospatial technology for hydrological modelling 2021

Indian Institute of Remote Sensing, Dehradun

Indian Space Research Organisation 2018

Outreach Programme for Eastern Region
Regional Remote Sensing Centre-East, ISRO

Workshop on Quantitative & Qualitative Technique in Geospatial Sciences 2018

Department Of Geography, University of Calcutta and ILEE, Kolkata

National Workshop on Geospatial Data Analysis Using Open Source Software 2018

Department of Geography, Adamas University

Skills

Softwares

Soundness in Virtual Work Environment
GIS software like ArcGIS, Quantum GIS and ENVI
Web based platform Google Earth Engine
Remote Sensing Software like ERDAS Imagine
Expertise in Microsoft office

Programming

Proficient in: Python programming language
R programming language .
Familiar with Latex, JavaScript and SQL.

Language Proficiency

English, Hindi, Bengali

Other interests

Music, Writing & Photography.

References

Dr. M.L. Kansal

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Indian Institute of Technology Roorkee, India
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Dr. Asis Mazumdar

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