

Ranjana Ray Chaudhuri

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❖ Bio-note:

Ranjana Ray Chaudhuri is a faculty in the Coca-Cola Department of Regional Water Studies at the TERI School of Advanced Studies (TERI SAS), New Delhi, India. She is a water professional with 25+ years of experience in civil engineering projects, teaching and training. She is a civil engineer with master's in environmental engineering and PhD in Hydrology. She is a member of IWA and AWWA. Her area of expertise is broadly in urban water management including design of water and wastewater schemes, design of decentralized facilities for urban and rural areas, water budget modelling, water reuse and water efficiency, extreme event analysis, surface water quality modelling. She has worked on projects related to integrated water resource management (IWRM) for cities, peri urban areas and rural areas in India. She has designed academic courses on water audit and demand management, integrated watershed, and river basin management, applied hydrology and irrigation water management. She has worked as a resource person for development of WASH curriculum model for higher studies, WASH summer school, training of trainers (TOT) for the TERI SAS-TERI urban USAID project, rainwater harvesting in urban training. She was the faculty instructor for the Urban WASH innovative intervention component for developing student research initiatives.

❖ Education:

- Ph. D. in Hydrology from TERI School of Advanced Studies
- Master of Civil Engineering (Environmental Engineering), Delhi College of Engineering (now Delhi Technological University), 1992
- Bachelor of Engineering (Civil Engineering), Delhi College of Engineering (now Delhi Technological University), 1990

❖ Membership of professional associations:

- Member of India Sanitation Coalition Task Force
- Member of International Water Association (IWA)
- Member of American Water Works Association (AWWA)

❖ Area of Expertise

- Urban water management including centralised and decentralised water and wastewater systems
- Design of water audit, water efficiency and water budget plans
- Statistical modelling of extreme events
- Agriculture Water management

❖ Publications (Journals/Conferences)

- **Ray Chaudhuri, R.** and Sharma, P. (2020). "Addressing Uncertainty in Extreme Rainfall Intensity for semi-arid urban Regions: Case study of Delhi, India" *Natural Hazards*, 104:2307-2324 Springer. DOI : 10.1007/s11069-020-04273-5
- **Ranjana Ray Chaudhuri, Prateek Sharma, Arun Kansal** (2021). "Reducing the water footprint of megacities in Asia: Addressing water reuse and groundwater recharge -Case study of Delhi", accepted as book chapter to be published in the volume on urbanization in the Global south, Routledge publishers. ISBN 9780367553906 DOI: 10.4324/9781003093282
- **Ray Chaudhuri, R.** and Sharma, P. (2021). "An integrated stochastic approach for extreme rainfall analysis in the National Capital Region of India" *J. Earth Syst. Sci.* (2021) 130:16 Indian Academy of Sciences. <https://doi.org/10.1007/s12040-020-01510-0>
- **Ray Chaudhuri, R.** and Sharma, P. (2020). "Climate Risk to Resilience-Analyzing short duration extreme rainfall for water planning in the megacity of Delhi." *Journal of Disaster Advances*, published June 2020, E-ISSN: 2278-4543 Print ISSN: 0974-262X.

- **Ray Chaudhuri, R.,** Sherly, M. A., and Tarannum, F. (2019). “Waterscapes through Multi-stakeholder Approach for a Water-stress region in Delhi NCR, India”, ISH-HYDRO 2019 International Conference, Osmania University, India, 18-20 December 2019.
- **Ranjana Ray Chaudhuri,** Prateek Sharma, “A comparative assessment of uncertainty estimates of model parameters corresponding to different rainfall intensity levels using Bayesian framework”, 2nd International conference on Global Warming and Climate Change 2019, 3-4 October 2019, Bangkok.
- Goswami, A., **Chaudhuri, R. R.** (2019). CityRehydrate - Comprehensive toolkit for sustainable city water projects, Waterfuture Conference – Towards a sustainable water future, September 24-27, 2019, Bangalore, India.
- **Ray Chaudhuri Ranjana,** Sharma Prateek, Kansal Arun (2018). “ Need for framework for water reuse in megacities of Asia-a case study of New Delhi, India”, proceedings in the international conference on ‘The Challenges of governance in mega cities’, 25-26 October 2018, at ISEC, Bangalore, India.
- **Ranjana Ray Chaudhuri,** “Treated Wastewater Reuse-Need of the Hour”, AICE17, American Water Works Association-India Conference, 10-11 November, 2017, Mumbai, India.
- **Ranjana Ray Chaudhuri,** Syed Wamiq Ali Qazi, Shashank Pandey, “Influence of urbanization on soil infiltration rates-a case study”, Urban India-Vol 37(II), July-December 2017. <https://www.niua.org/urban-india/urban-india-2017-jul-dec>, UGC CARE group D journal.

❖ **Resource Personnel for Training programmes**

- Designed WASH Curriculum development workshop for introducing an interdisciplinary course University course at master’s level on Water, Sanitation and Hygiene at TERISAS from 21-23 June,2017
- Resource Person for Training of Trainers (TOT) under Urban WASH USAID project.
- Resource Person for WASH Summer School held at TERI SAS for Urban Local Body (ULB) officials on the following themes
 - Changing Sanitation & Hygiene Behaviour for overall Public Health Risk Reduction, 17-19 August,2016
 - Municipal Solid Waste Management, 21-23 June,2017

❖ **Selected Completed Projects:**

- **Integrated Water Resources Management for Gurugram District, India (June 2019-September 2019).**

Role: Co-Principal Investigator and Expert Team member for design interventions

The project aimed at recommendations for integrated water and wastewater management for selected villages and municipal council of Sohna block. The various objectives included review of the current status of the water projects, comprehensive mapping and qualitative and quantitative analysis of drinking water, surface water, groundwater and wastewater, geospatial analysis of cropping pattern and soil health along with recommendations on efficient water use for improved crop production and assessment of the feasibility of various sustainable watershed management practices and recommendations for a conjunctive use of surface and groundwater.

- **Landscape indicators for water-land-community security in mid Gangetic basin (December 2016-December, 2017) Solidaridad, Netherlands.**

Role: Expert Team member for sustainable water management strategies

The overall aim of the project is to develop a framework to be applied to mid Gangetic basin including scientific and socio-economic attributes to enhance security and resilience in the basin. I was responsible for analysing the drivers responsible for achieving sustainable water management in agriculture and sustainable industry in the basin. Detail analysis of soil and water is being carried out and linkages shall be established through eco system modelling.

- **Development of a framework for the local implementation of the SDGs, Case study of Delhi, India, ProSPER.Net, UNU-IAS (February 2018-October 2018).**

Role: Expert Team member for water and sanitation

The study tried to look into the local implementation of SDGs in a three-step process: a) mapping national and state policies, understanding the localization process and identifying stakeholders in implementation; b) stakeholder interviews to understand gaps, demands and supply issues; c) conducting stakeholder interviews for understanding governance challenges and identifying scope for capacity building. The key parameters for assessing service quality were: availability and accessibility; affordability; and quality of services provided in the prioritized sectors of health and water & sanitation.

- **Urban Water, Sanitation & Hygiene (WASH) (November 2014- September 2017), USAID**

Role: Expert Team member for drainage design interventions

The aim of this project is to develop capacity in the field of water, sanitation, and hygiene for urban areas. Development model course curriculum for WASH to be used in higher education to enhance skills in the water industry was designed, providing innovative solutions in water and sanitation sector for urban areas which are scalable was another important area of work. Developed pathway for treating wastewater as resource and allow reuse as a tool. Development of methodology and plan were key components of this project including decentralised methods of grey water treatment and recycling, rainwater harvesting facilities for interstate bus terminals, drainage mechanism for community toilets and redesign of public toilets at bus terminals and metro stations using optimization theory.

- **Member of review panel of water quality modelling** using RIBASIM software for river basins, with **Central Water Commission, India**.
- **Member of expert panel on Circular Economy Pathways** for Municipal Wastewater Management in India: A Practitioner's guide of 2030 Water Resources Group.
- Have worked in consultancy project on **storm water drainage plan** for Zirakpur, Punjab, development of CETP for hazardous wastes in Adityapur industrial zone, Jharkhand, and water distribution pipeline system for small cities around India in consultancy organizations during 2000-2008. Prepared environment management plan for Kanpur industrial area amongst others, carried out technical bid evaluation for contractors for WTP and STP.
- Design of engineering landfills and leachate collection system using geosynthetics in consultancy organizations during 1996-2000

❖ **Few recent Seminars/Workshops as discussant:**

- **Pavitra Ganga:** TERI in collaboration with the NMCG conducted a workshop to collate the issues of wastewater treatment and disposal along with possible sustainable solutions. The workshop was held at TERI on 27th February 2020.
- **River Restoration and Conservation:** The session was held at Vigyan Bhawan, Delhi under the National Mission for Clean Ganga on 7th December 2019. The session was about inclusion of cities in the restoration and conservation processes of rivers as they produce major share of wastewater.
- **Transboundary Rivers of South Asia (TROSAs) annual learning forum**-Discussed as panellist the need for transboundary research partners and collaboration in South Asia on 23 August,2019 in Delhi.
- Workshop on "Redefining Urban Water Space" on 28 Jan 2020
- **Indo German Dialogue on Sustainable Water Resource Management** -organised by Heidelberg University and TERI University (now TERI SAS), 3-4 October,2016, Delhi. Delivered a talk on role of soil infiltration capacity in reducing urban flooding

Declaration:

I do hereby declare that all the information given above is true to the best of my knowledge and belief.

Date: 10 September,2021



Signature