SCHOOL OF WATER AND WASTE AAETI

NAMAMI GANGE

WEBINAR

Groundwater and Riverine System:

Challenges, Opportunities and Solutions for Rapidly Urbanizing Ganga Basin

Date: **4 August, 2021** Time: **11:30 AM to 1:00 PM (IST)** Venue: **Online (Zoom Platform)** Language: **English**

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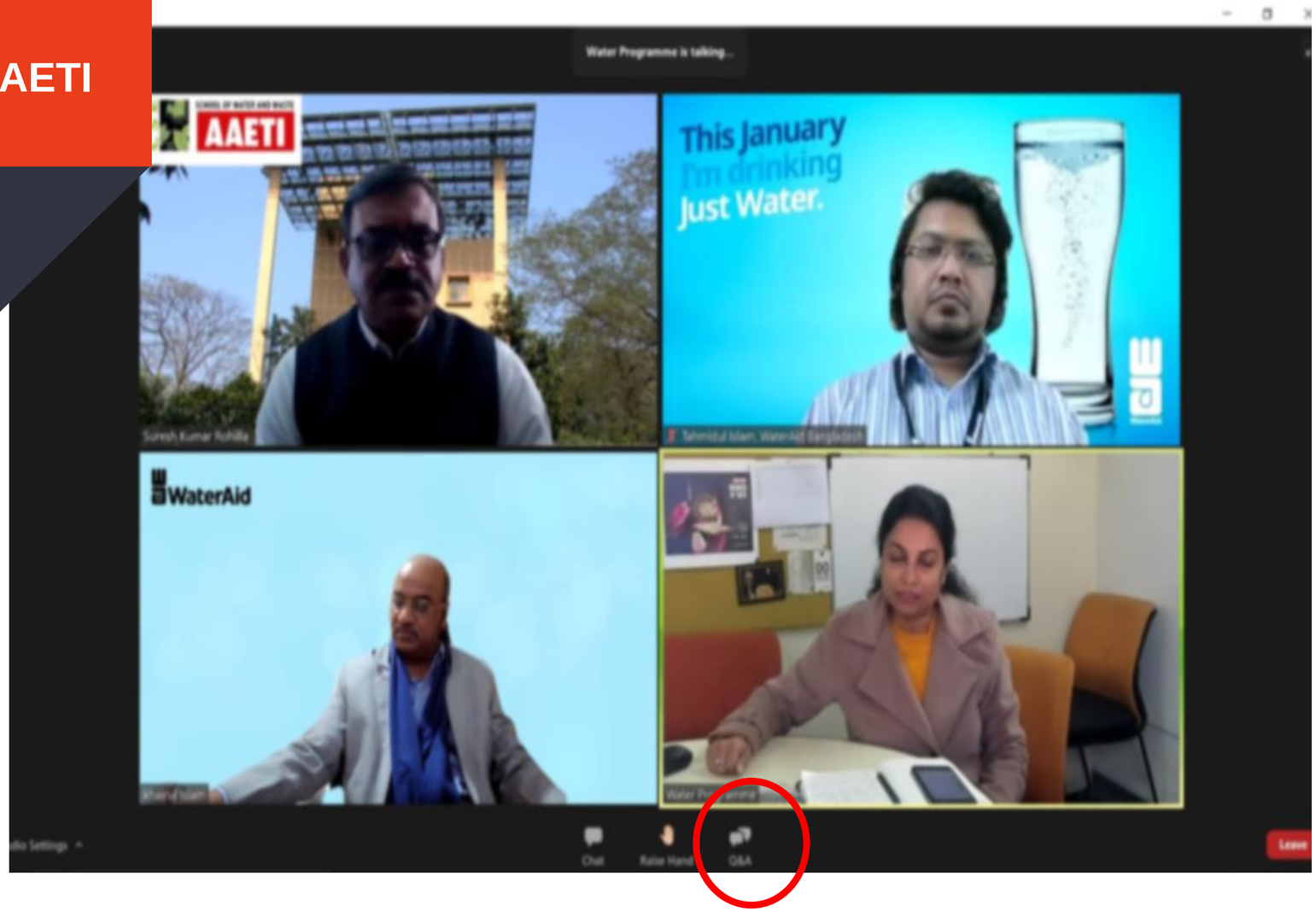
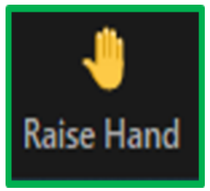


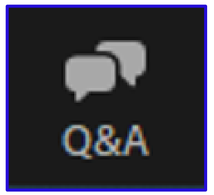
- Request to please keep your mic muted unless speaking.

- We will be recording the webinar
- Allocated time for each discussant is **5-6 mins** and Q&A session is 15 mins at the end of the webinar

Watch the chat window where we will post biography & links to resources



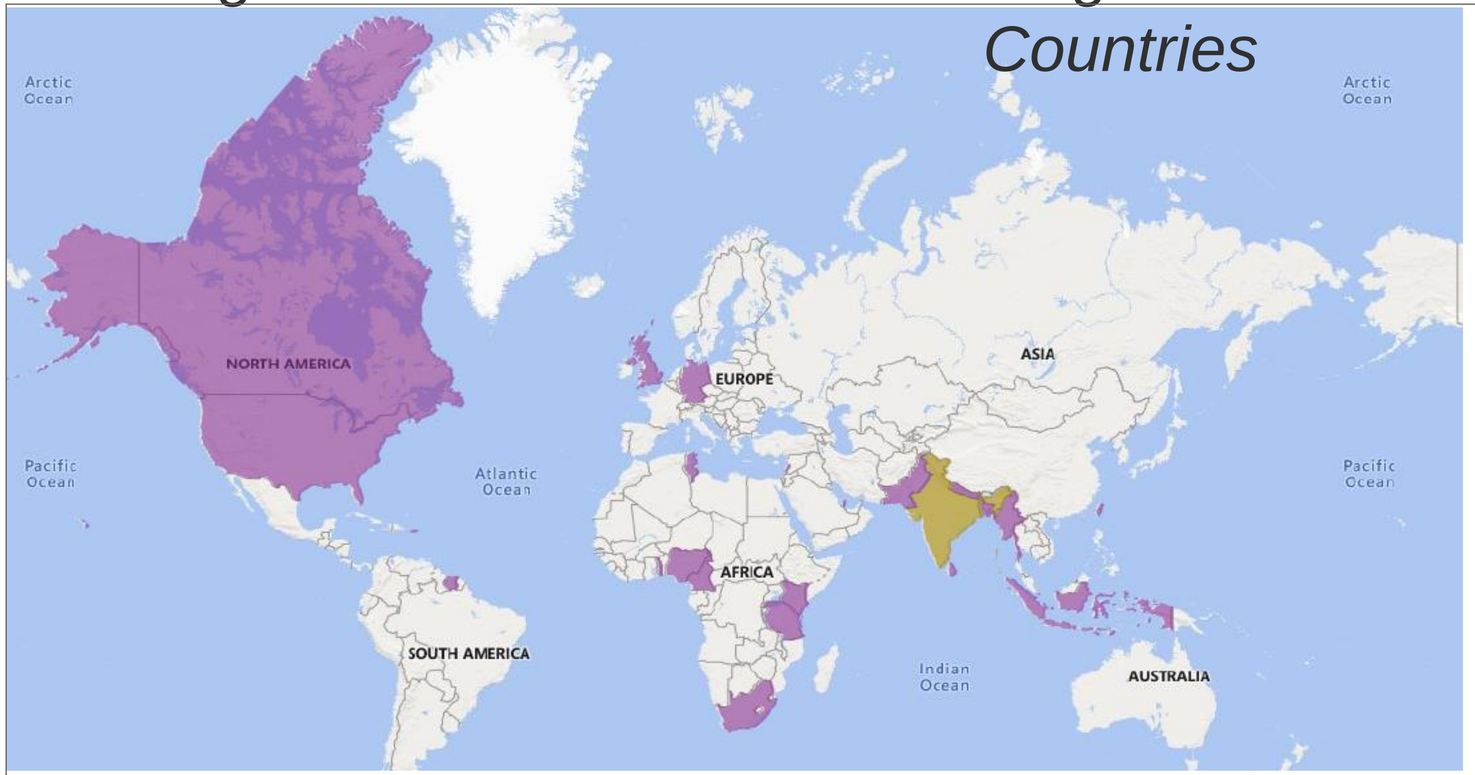
Raise your hand if you want to ask / share something



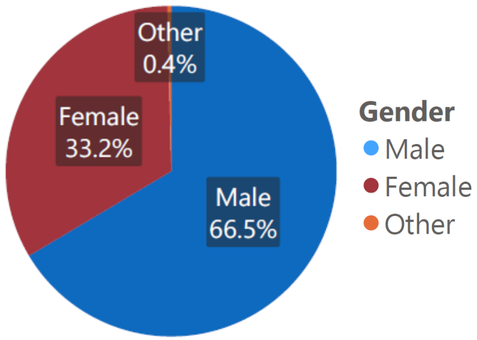
Submit your questions to the speakers in the Q&A window instead of chat box.

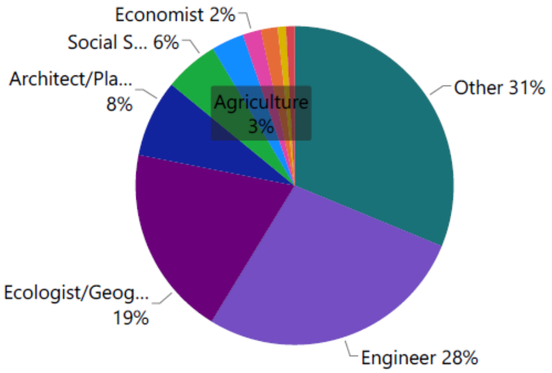
Registration Statistics (updated)

Registration Statistics: 1070+ Registrations from 295 cities across 24 Countries

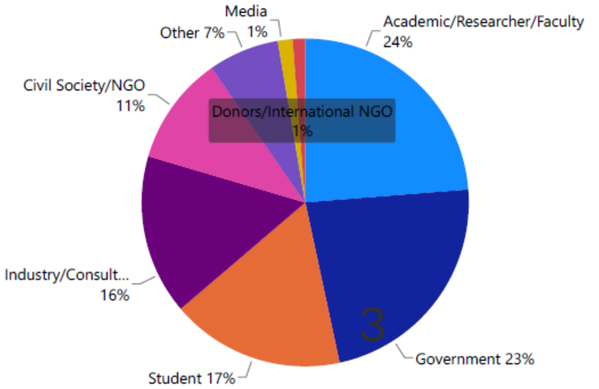


Professional Background





Type of Organisation



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Webinar: Groundwater and Riverine System: Challenges, Opportunities and Solutions for Rapidly Urbanizing Ganga Basin

Aim:

Capacity building, awareness and action research for promoting sustainable urban groundwater management for improved river health in Ganga basin cities.

Objectives:

- To develop better understanding of the urban groundwater and its connection with riverine system
- To discuss challenges, opportunities and solutions for rapidly urbanizing Ganga basin.

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Moderator

Dr Suresh Kumar Rohilla
Senior Director
School of Water and Waste
srohilla@cseindia.org

Dr Rohilla has over 25 years of work experience and leads the water programme at Centre for Science and Environment, New Delhi. He is Head of the CoE in Urban Development Sustainable Water Management Area of the Ministry of Urban Development and the National Key Resource Centre of the Ministry of Drinking Water Supply and Sanitation, Government of India.

He holds a doctoral degree from Queen's University Belfast and post-graduation degree(s) from Jawahar Lal Nehru University and School of Planning & Architecture, New Delhi. He is recipient of the British Chevening Indian Young Environmental Manager Fellowship (2001), Fulbright Nehru Environmental Leaders Programme Fellow (2012) and Government of Netherlands Fellowship (2014). He has been an affiliated Visiting Professor / Researcher at University of California – Berkeley in U.S.A.

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Webinar Agenda (4th August, 2021)

Time	Topic
11:30 – 11:35	**Welcome Note and Context Setting-** ***Dr Suresh Kumar Rohilla, CSE***
11:35-11:40	**Inaugural Address- Shri Rajeev Ranjan Mishra,** DG, NMCG
11:40- 12:30	**Depleting Groundwater Leading to Ganga Drying- Prof. Abhijit Mukherjee,** IIT Kharagpur
12:30-12:45	**Discussion**
	Discussants : **Prof. Venkatesh Dutta,** SEES, Babasaheb Bhimrao Ambedkar University, Lucknow : **Dr. V. K. Chaurasia,** Joint Adviser (PHEE), CPHEEO,MoHUA, GoI : **Dr. Ashok Ghosh,** Chairman, Bihar State Pollution Control Board
12:45 – 12:55	**Q&A Session**
12:55- 01:00	**Vote of Thanks**

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River Ganga Basin Cities - Key Issues & Challenges

Ganga basin has 2,009 statutory towns, with an urban population of 165.2 million, as per Census of India 2011 includes 100 + Class I cities, and at least 6 metropolitan cities including National Capital Territory of Delhi, state capitals Lucknow, Patna, Dehradun.

Urban built-up area has increased approximately 44% from 10,512 sq. km. in 2005-06 to 15,138 sq. km.

Widening water demand – supply across different sectors resulting several river stretches in river Ganga with non existent flow as well as overexploited aquifers.

Urban Lakes and ponds are deteriorating and being encroached resulting alarming, impacting both quality and quantity of water in drains and rivers, and the incapability to manage moderate and extreme rainfall events.

Inadequate sewage treatment (incl. conveyance) and reuse of treated wastewater

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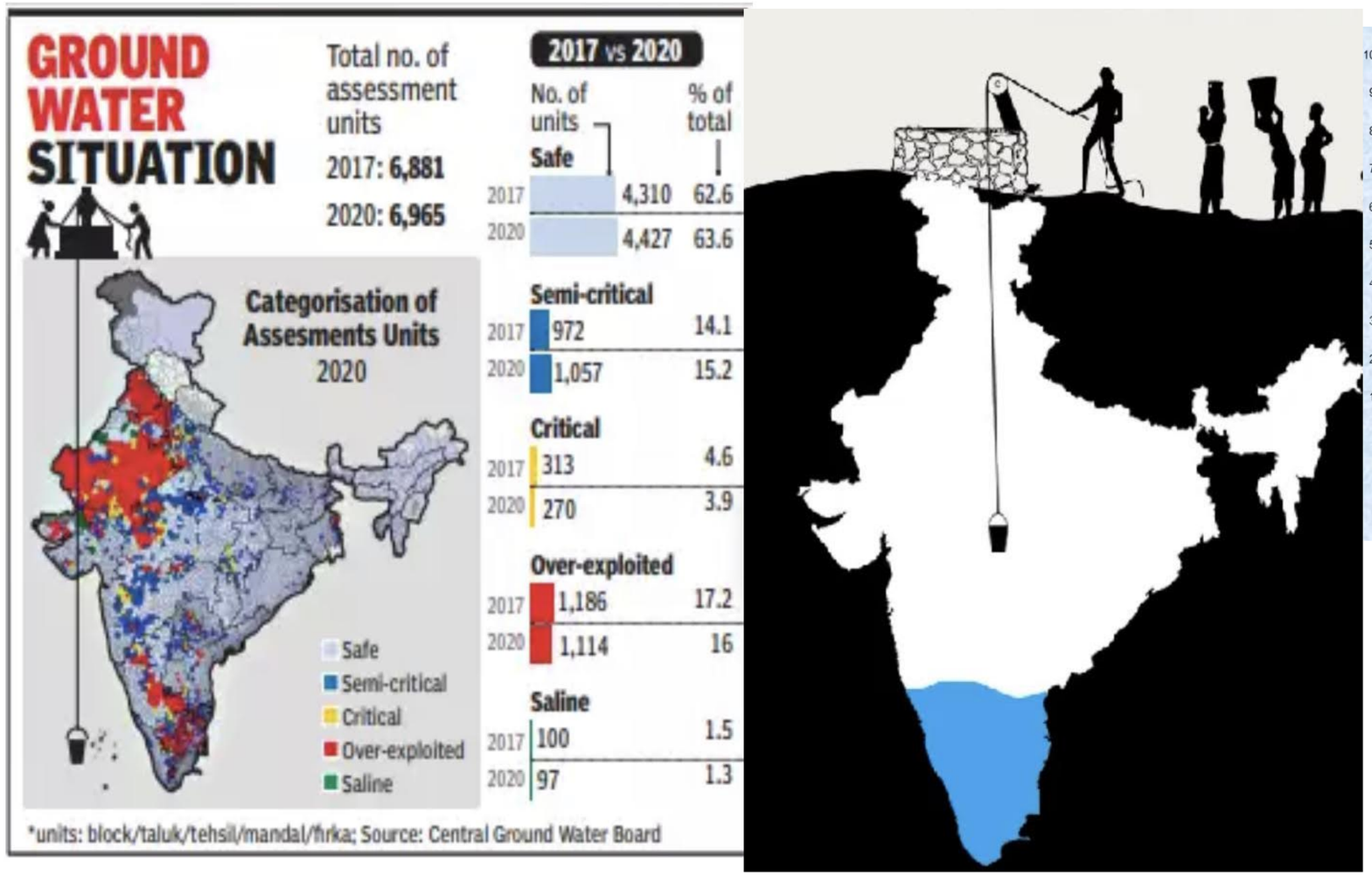
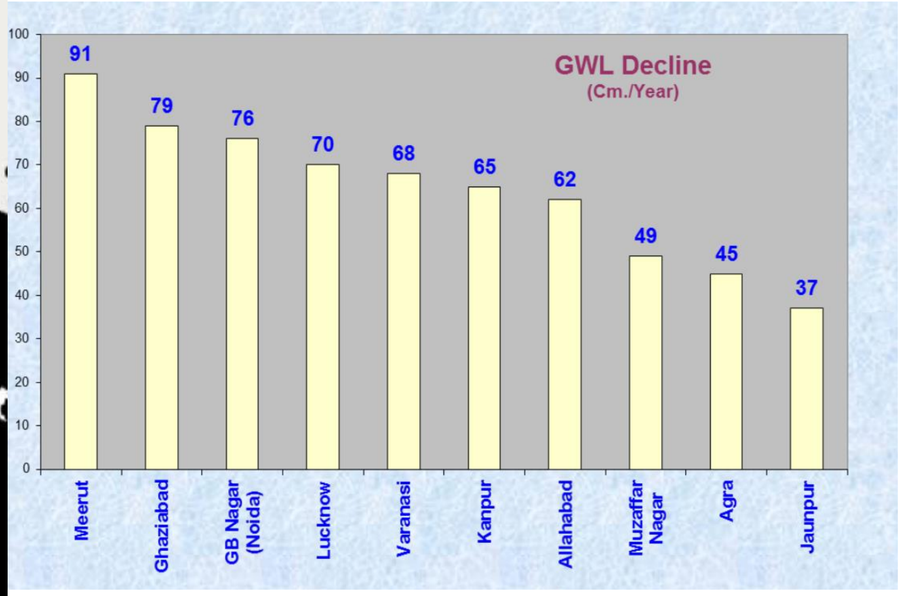
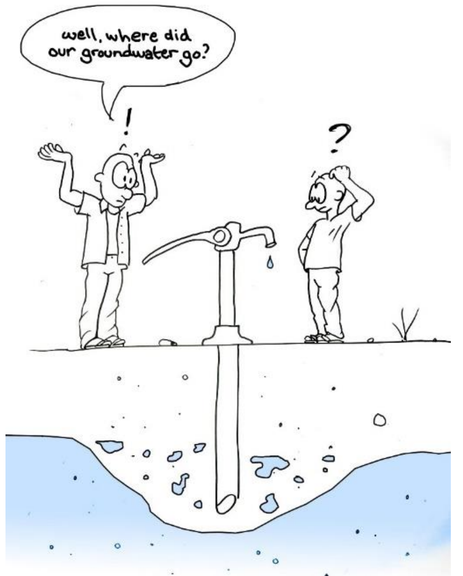




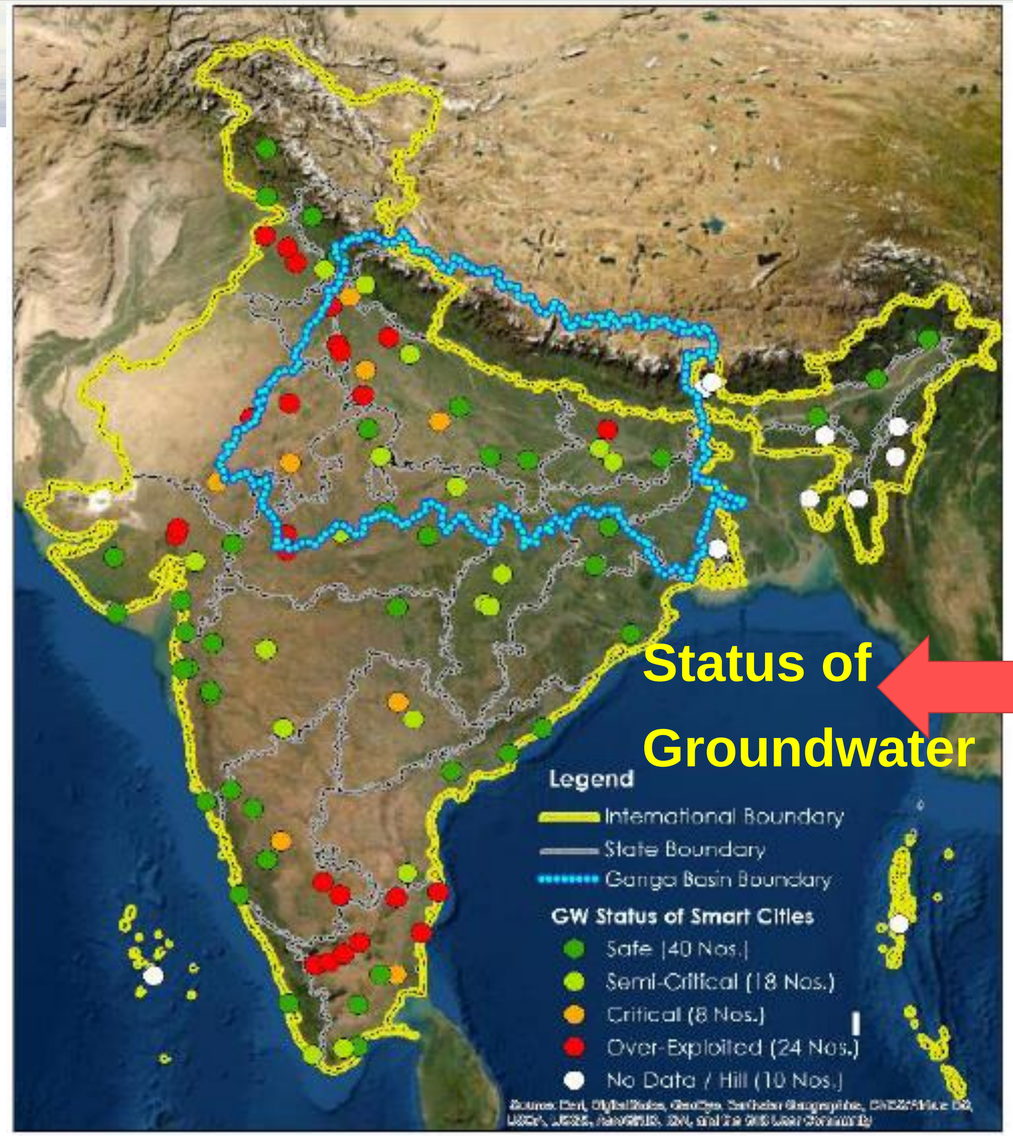
Average Yearly Decline of GW in major cities in Uttar Pradesh



All over country the overexploitation of GW is recorded

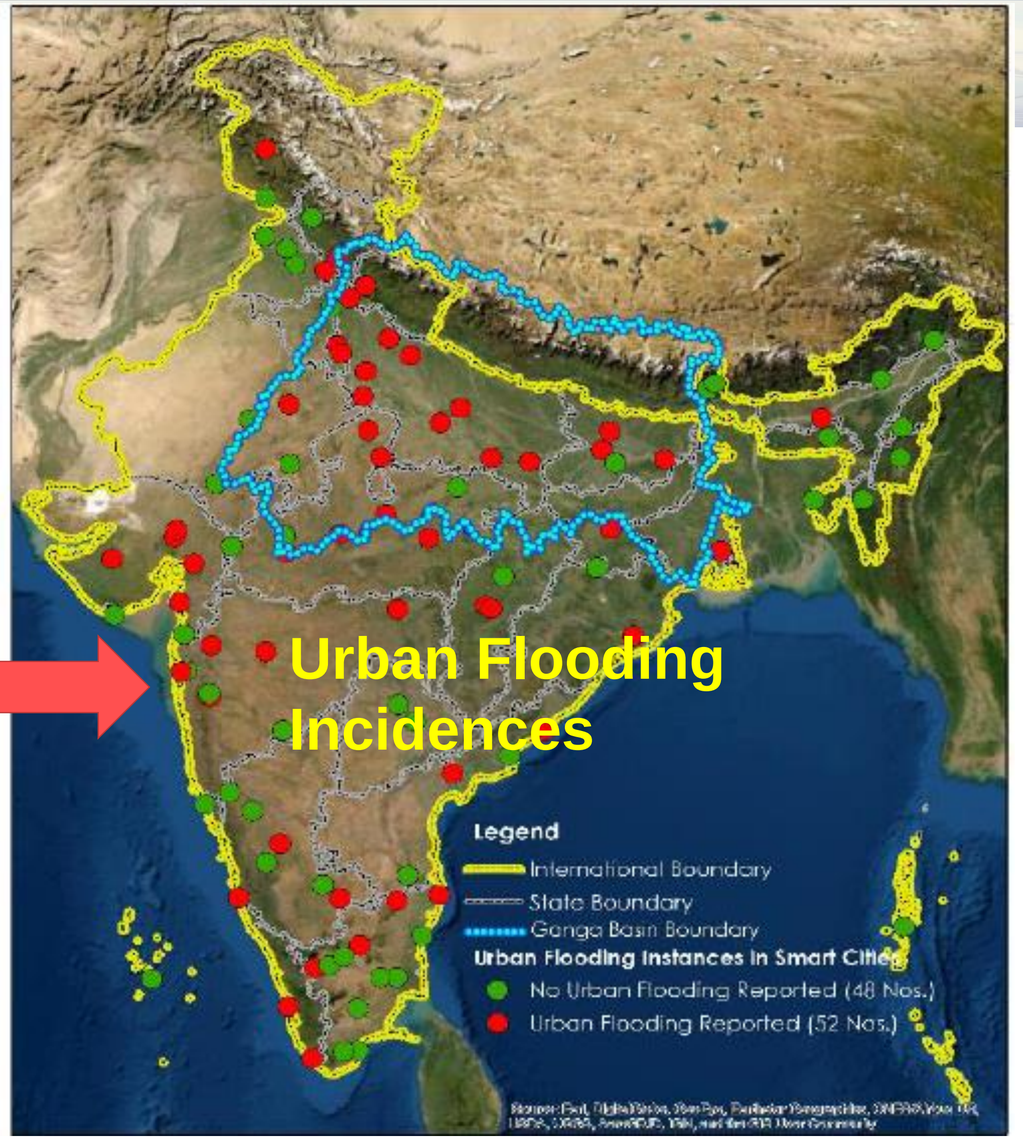
Human Settlements – extracting GW at 20 feets are now extracting water from 250-300 feet b.g.l.

Co- existence of Overexploited Groundwater & Urban Flooding



Status of Groundwater

Urban Flooding Incidences



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Urban Water Management in Major Cities in India

Ganga Basin Cities – under various National / State Programme

Map highlighting NMCG Main Stem States Uttarakhand, Uttar Pradesh, Bihar, Jharkhand & West Bengal

All Urban & Rural areas under Swachh Bharat Mission, Jal Jeewan Mission & Jal Shakti Mission
And

Out of 500 AMRUT cities, 261 are in Ganga Basin

Out of 100 Smart Cities, 31 are under Ganga Basin

Out of 118 NMCG Priority towns /cities (in the main Stem States) -
54 AMRUT Cities & 8 Smart cities

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Water Sensitive Cities - Approach

- **Protecting** local waterbodies (**lakes, ponds and wetlands**) for supplementary water sources **incl. urban groundwater management**

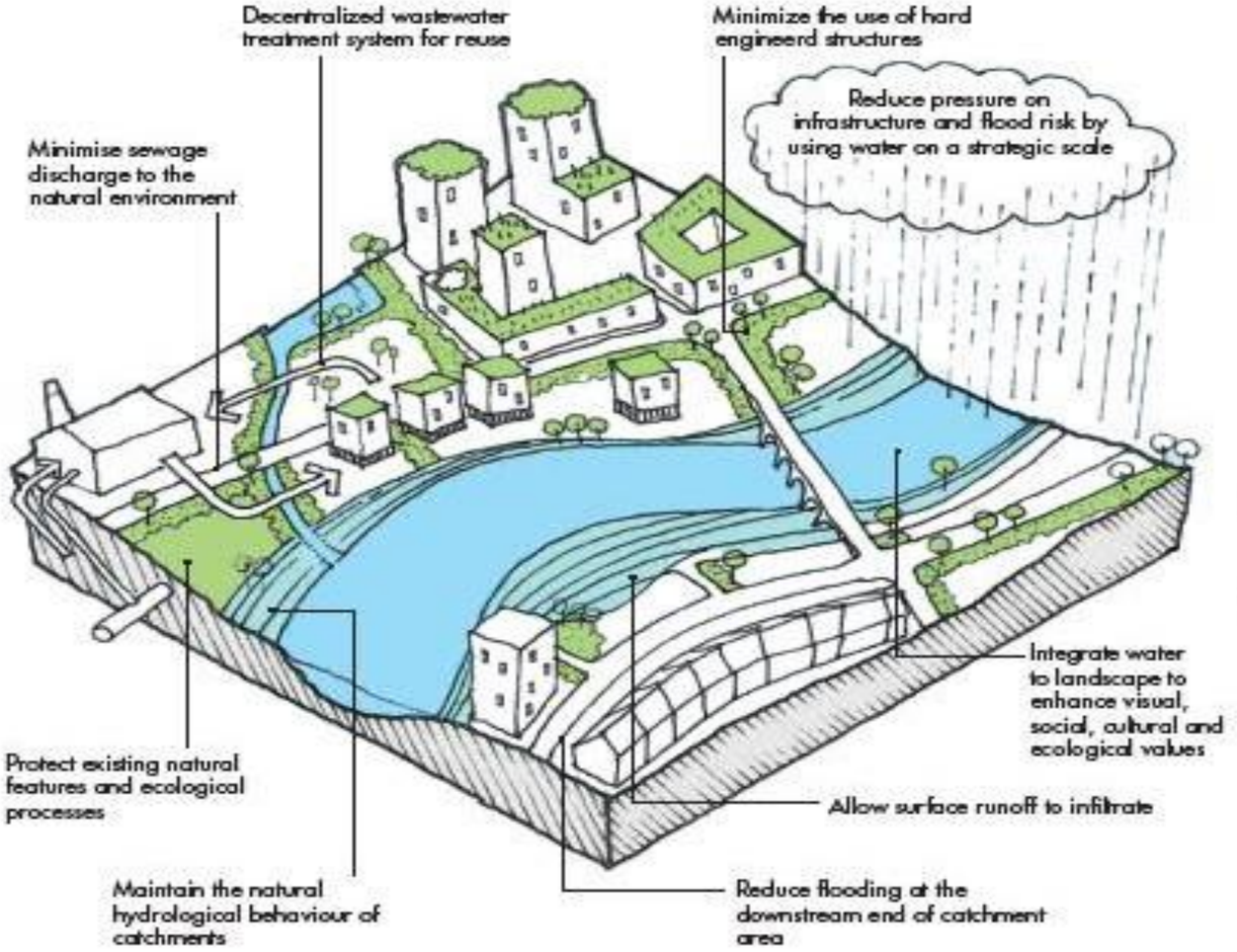
- **Storm-water management at public places, including open areas in cities**

- Increasing **water-conservation approaches at various scales** (buildings/campus).

- **On-site water conservation** with **rainwater harvesting (RWH)** is important to reduce water scarcity **incl. use of treated wastewater**

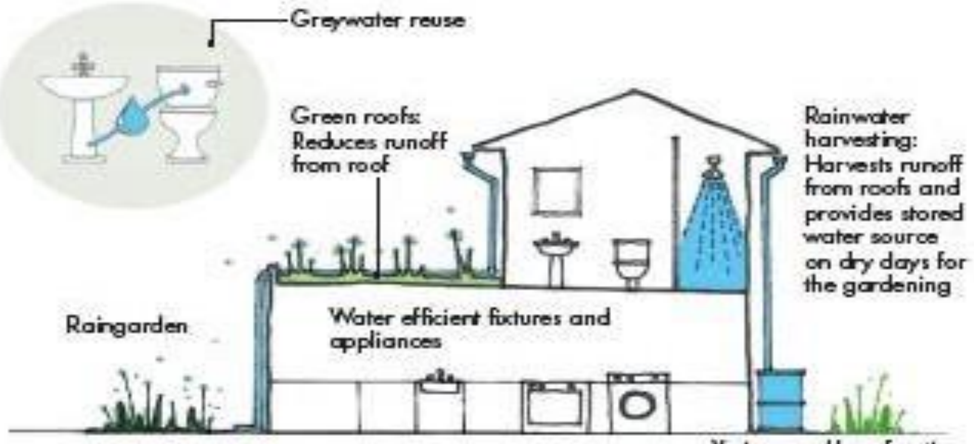
WSUDP APPROACH ON DIFFERENT SCALES

1 WATER-SENSITIVE PLANNING (CITY/ZONAL SCALE)



2 WATER-SENSITIVE DESIGNING (NEIGHBOURHOOD SCALE)

3 WATER-SENSITIVE DESIGNING (INDIVIDUAL SCALE)



Adopted from: Morgan, C., Bevington, C., Levin, D., Robinson, P., Davis, P., Abbott, J. and Simkins, P., 2013. Water sensitive urban design in the UK. Ideas for built environment practitioners. CIRIA report C, 723; Dickie, S., McKay, G., Ions, L. and Shaffer, P., 2010. Planning for SuDS–making it happen. CIRIA Publication C, 687

CSE-NMCG Initiative

“Making Ganga Basin Cities Water Sensitive”

About the Event & Webinar

Title : ***Capacity building and action research initiative (3-year duration project) on making water sensitive cities in the Ganga basin aimed at improving river health/flows.***

Key focus areas : **Water Sensitive Urban Design and Planning, Urban Water Efficiency and Conservation, Decentralized Wastewater Treatment and Local Reuse, Urban Groundwater Management and Urban Waterbodies / Lake Management.**

The initiative is aimed at engaging 1300+ number state / municipal functionaries and other sector players involved in promoting sustainable urban water management.

It is a part of the series of ongoing efforts by NMCG aimed to ensuring convergence of Namami Gange Mission with national flagship urban missions (AMRUT, Smart Cities, Swachh Bharat Mission, HRIDAY, NULM) and other missions (Atal Bhujal Yojana, Jal Jeewan Mission, Jal Shakti Mission) at state /city level across Ganga basin states.

Three Year Activity Plan

40+ activities over 3 year - 24 Training (incl. 12 no. online) , 12 webinars, annual knowledge conclaves & field exposure visits for **capacity building of 1300+ state / development authorities / municipal functionaries**

Develop **Practitioner's Guide (5 no.s) on thematic focus areas**

Helpdesk & Web portal for handholding support to design and implement model WSUDP intervention as model projects

Speakers

Shri Rajiv Ranjan Mishra (IAS)
Director General
National Mission for Clean Ganga (NMCG),
Ministry of Jal Shakti, GoI

Prof Abhijit Mukherjee
Department of Geology and Geophysics;
IIT Kharagpur, Kharagpur

Speaker

Shri Rajiv Ranjan Mishra (IAS)
Director General
National Mission for Clean Ganga (NMCG),
Ministry of Jal Shakti

Shri Rajiv Ranjan Mishra (IAS) is the Director General of National Mission for Clean Ganga (NMCG). Since 2018, he has spearheaded Namami Gange programme-an integrated river rejuvenation approach, with multiple activities spanning 11 States of the Ganga river basin & creating a model programme for River Rejuvenation in India. He has been responsible for various policy level interventions including the ecological flow notification of 2018 and bringing to completion multiple projects for Aviralta and Nirmalta of River Ganga. Presently, he is also In-charge of National River Conservation Directorate looking after rivers outside Ganga Basin.

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Speaker

Prof Abhijit Mukherjee
Department of Geology and Geophysics;
IIT Kharagpur, Kharagpur

Prof Abhijit Mukherjee is currently working as an Associate Professor at the Department of Geology and Geophysics, School of Environmental Science and Engineering at the Indian Institute of Technology Kharagpur (IIT Kharagpur), India. He is a Ph.D. graduate from the University of Kentucky, USA, and has completed his postdoctoral work at the University of Texas at Austin, USA.

Prof Mukherjee has received the prestigious National Geoscience Award (2014) conferred by the President of India. He has received the first Shanti Swarup Bhatnagar Award 2020 in Groundwater and was selected by DST as one of 50 Indian scientists below 50-year age. He has been inducted as a Fellow to the Royal Society of Chemistry, UK, and the Geological Society of America (as the first person from any Indian organization in 100+years).

His main research areas are physical, chemical, and isotope hydrogeology, geospatial & geochemical Modelling, contaminant transport, groundwater-river-seawater interactions, groundwater quality, Numerical and Artificial Intelligence (AI) simulations of groundwater, as well as on climate change and urban geosciences.

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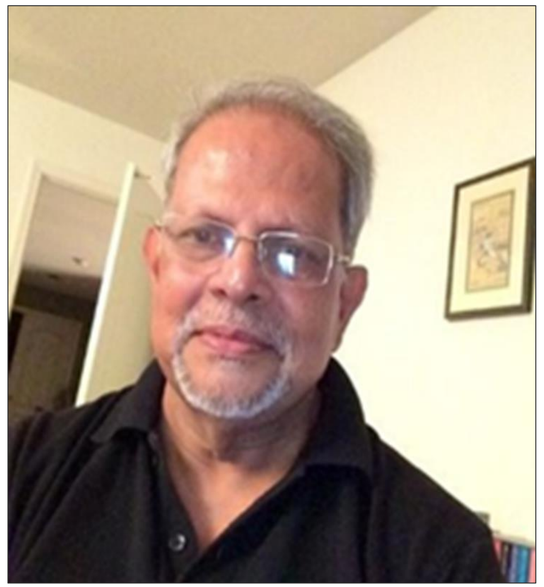
Discussants

Prof Venkatesh Dutta
School of Earth & Environmental Sciences (SEES),
BB Ambedkar University, Lucknow

Dr Vijay Kumar Chaurasia
Joint Advisor (PHEE)
CPHEEO, MoHUA



Dr Ashok Kumar Ghosh
Chairman, Bihar State Pollution Control Board

Discussant

Prof Venkatesh Dutta
School of Earth & Environmental Sciences (SEES),
BB Ambedkar University, Lucknow

Dr Venkatesh Dutta is presently working as an Associate Professor at Baba Saheb Bhimrao University, Lucknow in School of Earth & Environmental Sciences (SEES).

He has been trained as Environmental Management specialist with specialization in Water Resource Management. His main research interests include Catchment and Land Use Planning, River Restoration, Environmental Impact Assessment and Sustainable Cities. He is actively working on rejuvenation of wetlands, ponds and smaller rivers in the Ganga Basin. He has been a Fulbright-Nehru Fellow and British Chevening Scholar, and has served as an Expert member in the drafting committee of State Water Policy of Uttar Pradesh. He is also a member of the District Environment Committee and District Ganga Committee, Namami Gange.

Discussant

Dr Vijay Kumar Chaurasia
Joint Advisor (PHEE)
CPHEEO, MoHUA

Dr V.K. Chaurasia is Joint Adviser (PHEE), Director in Ministry of Housing and Urban Affairs Govt. of India. He has rich work experience of over 27 years in the field of Public Health Engineering(PHE), i.e., Water Supply, Sewerage, Solid Waste Management and Storm Water Drainage. He is involved in Policy & Program formulation in the Ministry for PHE sector.

He has extensively supported the implementation of Swachh Bharat Mission in the past five years particularly in the field of solid waste management. He has actively contributed in Task Force report of Planning Commission on Waste-to-Energy under Chairmanship of Dr. K. Kasturirangan of ISRO and similar many reports at National & International level.

He has done his B.Tech in Civil Engineering and M.Tech in Environmental Engineering both from IIT Roorkee. Recently, he has been awarded Ph.D. from IIT Delhi on the topic “Urban flooding and Climate Change”.

He is presently holding the post of President of “Institution of Public health Engineers(India)- Delhi Chapter”.

Discussant

Dr Ashok Kumar Ghosh
Chairman, Bihar State Pollution Control Board

Dr Ashok Kumar Ghosh is currently working as Chairman, Bihar State Pollution Control Board and Professor & Head of Department-Research at Mahavir Cancer Institute and Research Centre. He is also a member of Regional Empowered Committee of Ministry of Environment, Forest & Climate Change, Government of India.

Currently he is working on a multinational (Indo-Dutch-Bangladesh) research project DELTAP for arsenic mobilization in Gangetic floodplains of Bihar supported by NWO-Wotro. Dr Ghosh is also working on DST-UKIERI supported project Nutri-SAM jointly with University of Salford, UK , and another Indo-German project INNOWATER supported by DST, Government of India. Recently he has been awarded another International project FAR-GANGA from DST/Newton-Bhabha Fund in collaboration with University of Manchester, UK and National Institute of Hydrology (NIH),Roorkee.
Dr. Ghosh is one of the coordinators of European Commission sponsored project “Erasmus Mundus Eurindia and India4EU II Program” - a worldwide cooperation and mobility that aims to enhance quality in higher education and promote intercultural understanding. He was awarded for Excellence in Water Showcase Final at 7th World Water Forum in 2015 held at Daegu, South Korea for his research related to arsenic mitigation in rural Bihar.

Thank You