

Webinar on Decentralised Nature Based Wastewater Treatment Solutions for Improved River Health

WEBINAR ON

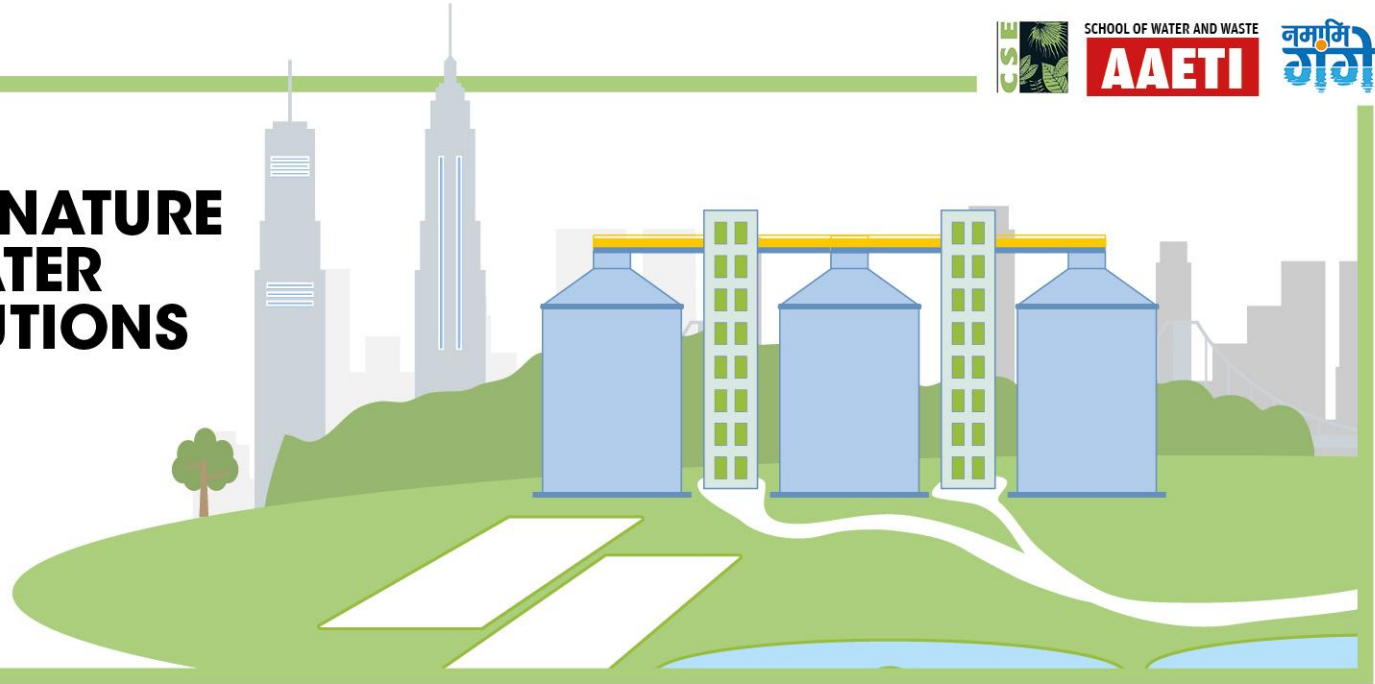
DECENTRALISED NATURE BASED WASTEWATER TREATMENT SOLUTIONS FOR IMPROVED RIVER HEALTH

Date: October 21st, 2021

Time: 3:00 - 4:30 pm

Venue: Online

Language: English



Moderator
Suresh Kumar Rohilla
Senior Director,
CSE



Speaker
Ashok Kumar Singh,
IAS, Executive Director
(Projects), NMCG

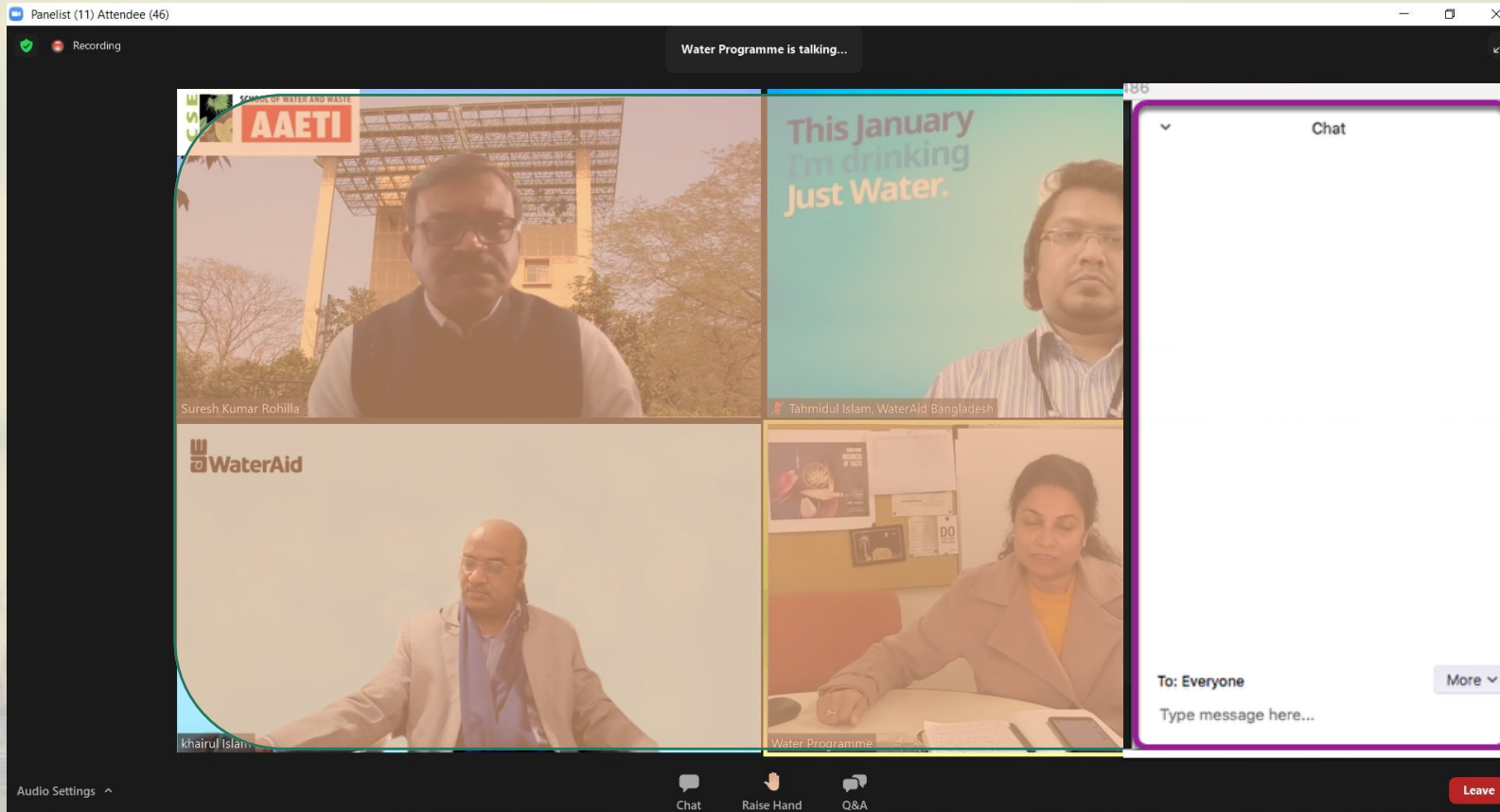


Speaker
Ravinder Kaur
Principal Scientist,
IARI



Speaker
Eli Cohen
Founder & CEO, Ayala
Water & Ecology

Housekeeping Rules

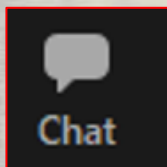


Request to please keep your mic muted unless speaking

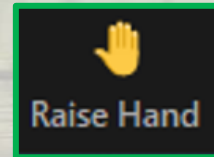


We will be recording the webinar

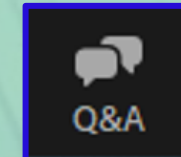
Allocated time for each speaker is **20-25 mins** and Q&A session is 15 mins at the end of the webinar



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



Raise your hand if you want to ask / share something

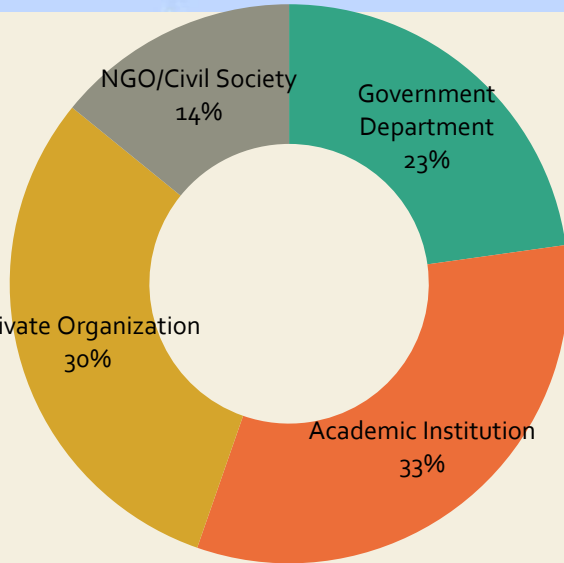
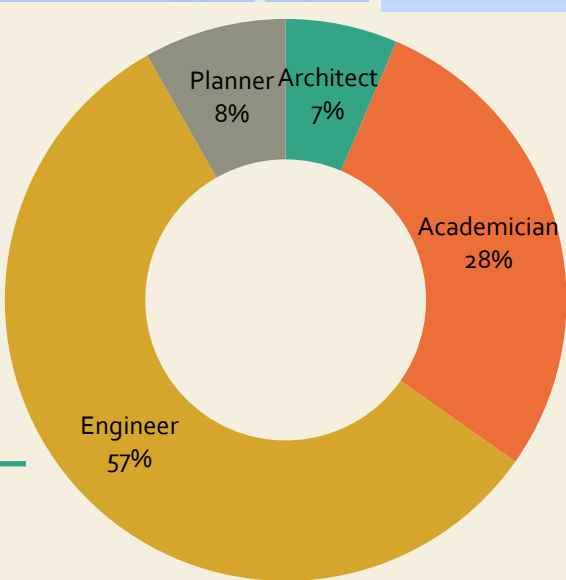
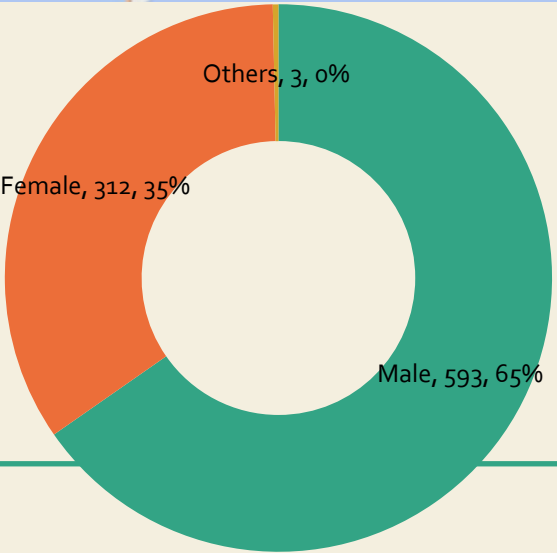
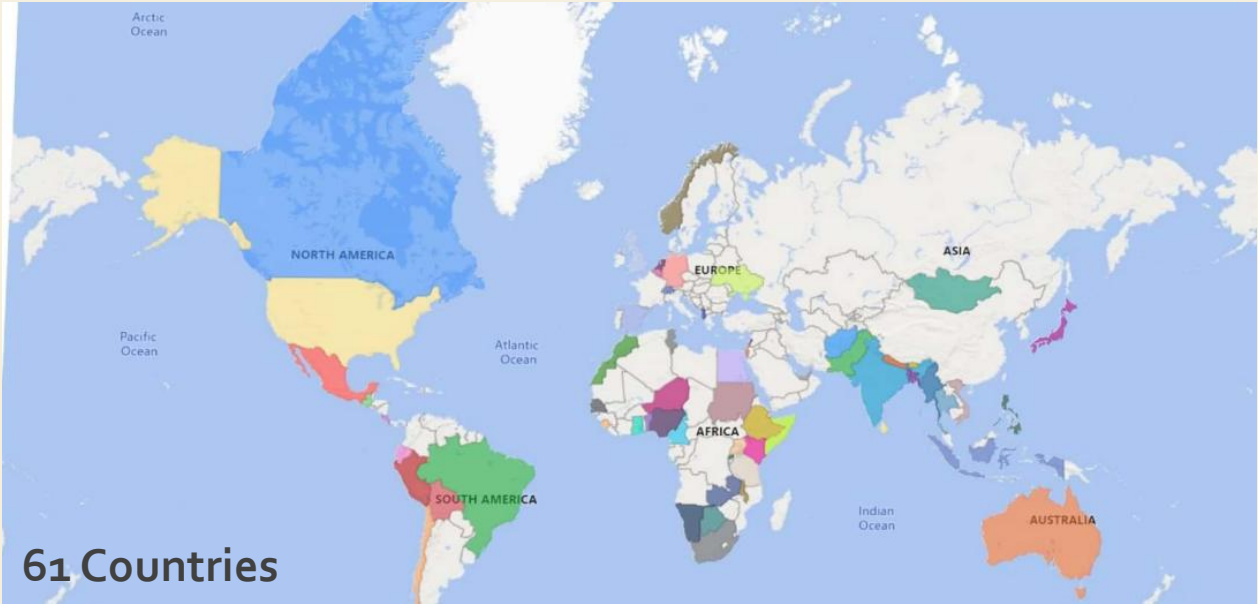


Submit your questions to the speakers in the Q&A window instead of chat box.

Mention your name, organization name and the Speakers name to whom the question is been asked

Registration Statistics

900+ Participants- 61 Countries



Webinar on Decentralised Nature Based Wastewater Treatment Solutions for Improved River Health



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Webinar Agenda (21st October, 2021)

Time	Topic
15:00 – 15:05	Welcome note and context setting <i>Dr Suresh Kumar Rohilla, Senior & Academic Director, CSE</i>
15:05-15:15	Keynote Address <i>Mr Ashok Kumar Singh, IAS, Executive Director (Projects), NMCG</i>
15:05-15:15	Jalopchar – An Eco-friendly Wastewater Treatment Technology <i>Dr Ravinder Kaur, Principal Scientist, WTC, IARI</i>
15:45-16:15	Decentralized Nature Based Solutions- Is it the future? And Why? <i>Mr Eli Cohen, Founder and CEO, Ayala Water & Ecology, Israel</i>
16:15- 16:20	Discussion <i>Mr Vijay Kumar Chaurasia, Joint Advisor, CPHEEO, MoHUA, GoI</i>
16:20-16:30	Q&A Session



Dr Suresh Kumar Rohilla

**Academic Director,
School of Water and
Waste, AAETI**

Senior Director, CSE

Email :

srohilla@cseindia.org

Dr Rohilla, with over 23 years of work experience, leads the water programme at Centre for Science and Environment, New Delhi. He is the 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.

Keynote Speaker



Mr Ashok Kumar Singh, IAS
Executive Director
(Projects), NMCG
Email:
ed.projects@nmcg.nic.in

Mr Ashok Kumar Singh, an IAS Officer is Executive Director (Projects) at National Mission for Clean Ganga at Joint Secretary Level. He has completed his B-Tech from IIT Kanpur and has rich experience of industry and administration. Prior to joining NMCG in January, 2020, he was Joint Secretary (Defence) in charge of Border Roads/Training and CVO of Ministry of Defence (2019-2020). He has worked in Ministry of Finance in Department of Financial Services from 2015- 2019 and played a pivotal role in deepening of Financial Inclusion in the country. During his tenure in Ministry of Finance, Pradhan Mantri Jan Dhan Yojana expanded to 33 crore people who were provided with bank accounts and RuPay cards. Mr Singh also held the charge of Managing Director of Kerala Water Authority from 2011-2015 and has handled JICA and World Bank Funded projects in water and wastewater. He was awarded with Prime Minister Award for excellence in implementation of MNREGA program in Idukki District in year 2010.



Dr Ravinder Kaur
Principal Scientist, Indian
Agricultural Research
Institute, PUSA, New Delhi
Email : rkaur@iari.res.in

Dr. Ravinder Kaur, Principal Scientist & Former Project Director, Water Technology Centre and Former Director, Indian Agricultural Research Institute is a doctorate (Gold medalist & Jawahar Lal Nehru awardee) in Agricultural Physics with specialization in Soil Physics & Soil – Water Conservation, from Indian Agricultural Research Institute. She has 26 years of rich experience in applied and extension research on several global/ domestic priority areas, with specific reference to abiotic systems Dr. Kaur has been honored with several prestigious national/ international awards (viz. ICAR Young Scientist Award, ICAR Punjab Rao Deshmukh Women Agricultural Scientist Award, ICAR National Fellow position, NESAFellowship, Fulbright and IHELP fellowships from Fulbright Commission and CGHERA, Visiting Scientist position under India-Taipei Program of Co-operation in Science & Technology).



Mr Eli Cohen

Founder & CEO,

Ayala Water & Ecology, Israel

Email : eli@ayala-aqua.com

Mr. Cohen has more than 31 years of practical experience in the field of sustainable Nature Based Solutions. He had founded AYALA Water & Ecology and leading the same with his high-tech R&D expertise in the field of thermo-dynamic and special materials science. His overall experience includes thermodynamic skills with special agriculture research in the field of water, aquatic plants, wetlands and environment. Ayala together with it's two subsidiary companies, India and Israel, have design and implemented hundreds of systems in Israel and worldwide, amongst it: New-Delhi Metropolis, Bangalore metropolis, Hyderabad, Nice (France), Athens, Mexico, Industries: Loreal cosmetics, AHAVA, power stations IEC, and many more.



Mr. Vijay Kumar Chaurasia

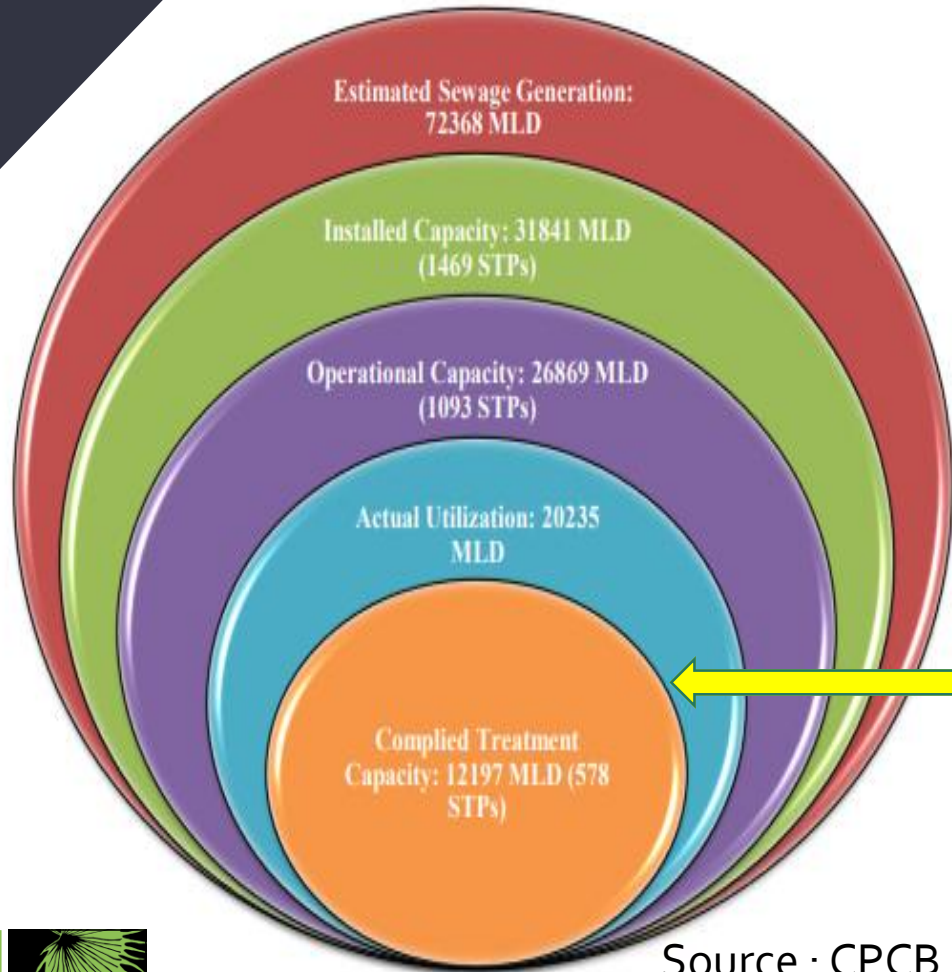
Joint Advisor (PHEE), CPHEEO,
MoHUA, Govt. of India

Email :
vkchaurasia1969@gmail.com

Mr V K Chaurasia has been working in Central Public Health & Environmental Engineering Organization (CPHEEO) under Ministry of Housing and Urban Affairs, for the last 18 years.

He has extensive work experience of over 25 years in the field of Public Health Engineering, i.e., Water Supply, Sewerage, Solid Waste Management and Storm Water Drainage and is presently involved in implementation of Swachh Bharat Mission Urban (SBM), AMRUT & Smart Cities Programmes.

Wastewater Treatment Scenario



Source : CPCB 2021

- **Cities do not control pollution**
- Cost of building system is high
- City can build sewage system for **few**
- Spends to pump, repair and treat waste of **few**

But

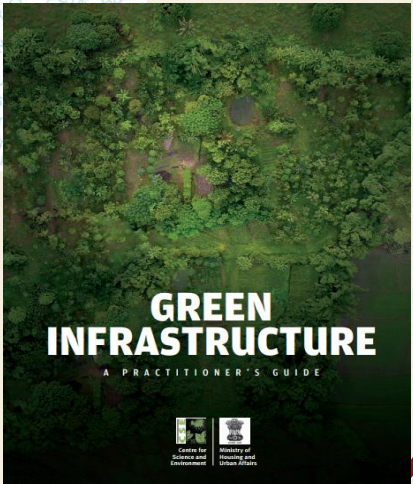
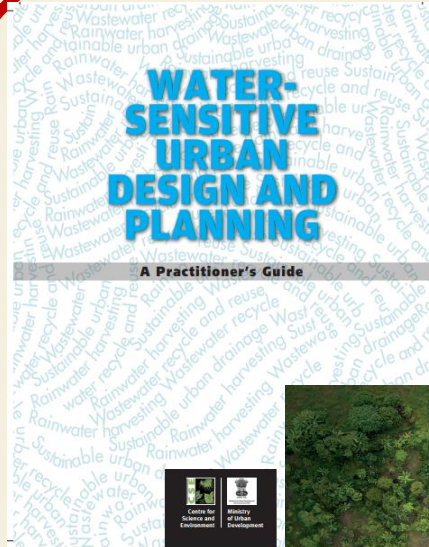
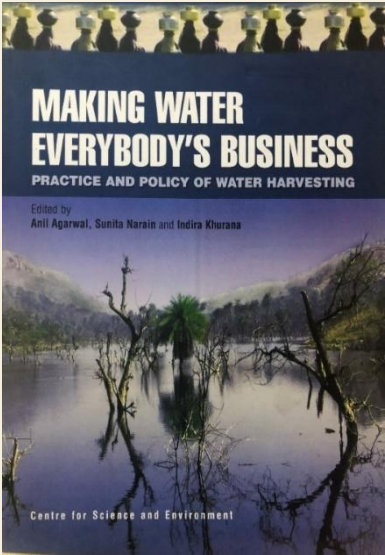
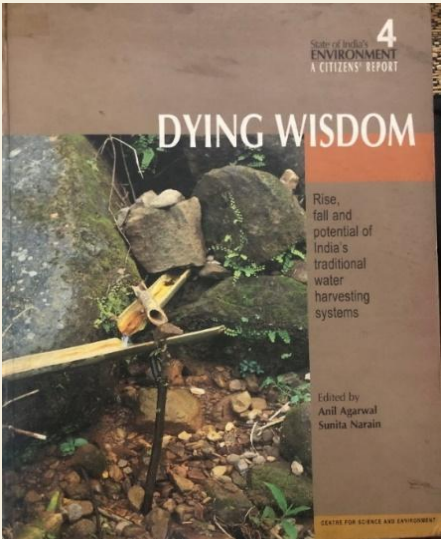
- Treated waste of **few** gets mixed with **untreated waste of majority**
- The result **is pollution of water bodies**

India has sewage treatment capacity of only 30% of total sewage generated.

Delhi and Mumbai alone have **40 per cent** of that capacity in the country.

Partial Treatment = Pollution





CSE Research : The water-sewage connection

The conventional way:

Bring water **into** the city – storage, diversion, pipe, pump, treat – from further and further away.

Flush and carry the waste **out** of the city – pipe, pump, divert, treat – further and further away.

Current Paradigm

More water supplied = More waste water generated = more costs for treatment = Unsustainable

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

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

remaining all urban local bodies under SBM 2.0
covered for solid and liquid waste

Toolkits for Water & Sanitation Sensitive Design and Planning

C-GINS



C-GINS
Compendium of Green Infrastructure Network systems
<https://www.cseindia.org/c-gins/home>



What is C-GINS?
C-GINS (Compendium of green infrastructure network systems) is the repository for best practices, projects and approaches in support of Green Infrastructure (GI) and Water Sensitive Urban Design and planning (WSUDP) principles. C-GINS is an open platform where the latest thinking on natural capital, ecosystem services and nature-based solutions is brought together. It provides a knowledge marketplace, which showcases case examples of GI and WSUDP to simplify how we share, obtain and create knowledge to better manage our urban environment. Each of the case examples provides an overview of the intervention, timeline, authorities/ stakeholders involved in the project, outcomes and learnings tips for user education. The preference for sustainable technologies is mainly due to CSE's continuous motivation towards usage of sustainable and environmentally harmonious interventions.

You may visit C-GINS at <https://www.cseindia.org/c-gins/home>

How to use C-GINS
With an objective of disseminating knowledge and good practices for sustainable water management, the particular case study can be explored on C-GINS on the basis of:

- Geographic location with the interactive map
- Scale of intervention
- Water management objectives

Further you can discover in detail with the help of filters provided. In case you are confused between the meanings of the terms use the glossary, in case you are not, you can move on to search.

Explore by scale

Regional Scale ▼ City Scale ▼ Neighbourhood Scale ▼ Individual Scale ▼



MOUNT



Menu on Un-Networked Technologies
For sewage and septage management



What is MOUNT?
MOUNT is an aggregator platform for various sustainable technologies, encouraging and disseminating knowledge and good practices for wastewater management. The preference for sustainable technologies is mainly due to CSE's continuous motivation towards usage of sustainable and environmentally harmonious technologies.

How can I use MOUNT?
As MOUNT is a technology aggregator platform which can be used by engineers, planners, environmentalist and all related practitioners. The technologies have been categorized into 4 technological heads on the basis of parameters as listed on the last page. Under the 4 technological heads there are 19 sub technologies which can be searched in three different ways:

1. Search by technology

Decentralised treatment	Onsite treatment	Faecal sludge treatment	In-situ treatment
			
Decentralised treatment A facility where domestic wastewater (both black and grey water) is treated close to the source at community or institutional scale to allow for safe local reuse or disposal of generated effluent.	Onsite treatment A facility (it may include user interface as well) that, in absence of sewerage network, collects and fully/partially treats the black water to allow for safe reuse or disposal of generated effluent.	Faecal sludge treatment A facility where the septage and/or faecal sludge is received (by vacuum trucks or otherwise) as an input and gets fully treated to allow for safe reuse or disposal of generated output (both solid and liquid).	In-situ treatment A facility where interventions are done at the receiving waterbody (like lakes, ponds and rivers) and/or open drains/ nullahs itself for rejuvenation of the receiving water bodies.

SANI-KIT



SANI-KIT
A web-based tool for mainstreaming City Sanitation Plans



WHAT IS SANI-KIT?
SANI-KIT is a web-based portal which offers a comprehensive collection of essential tools to enhance the capability of urban local bodies in India to prepare a high quality, city owned city sanitation plan (CSP).

OBJECTIVES OF SANI-KIT:

- To serve as a one-stop database for tools/guidelines on preparing CSPs
- To serve as a road map for ULBs which systematically guides them with the stages and activities required for preparing and implementing a CSP.

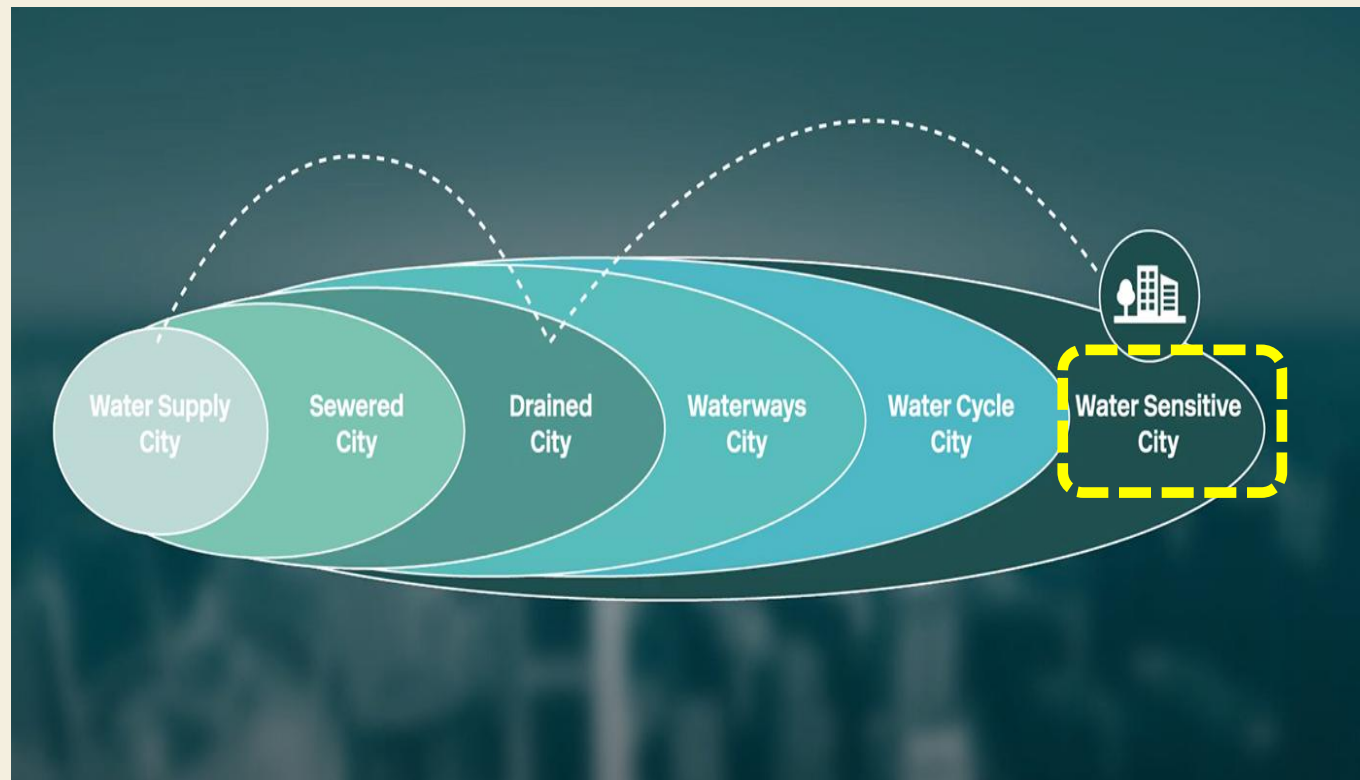
SANI-KIT ensures that your CSP highlights:

- Convergence of national, state and city level institutions and policies/schemes
- Spatial representation of problem hotspots and opportunities of a city for analysis
- Stakeholder involvement for inclusive and holistic planning
- Effective planning: including short, medium and long term action plans
- Funding framework for implementing your CSP

VISIT: <https://www.cseindia.org/sanikit/index.html>

CSE NMCG Capacity Building & Action Research

Initiative on Making Water Sensitive Cities



- **Protecting** local waterbodies (**lakes, ponds and wetlands**) for supplementary water sources
- **Storm-water management at public places, including open areas in cities**
- Increasing **water-conservation approaches at various scales** (buildings/campus).

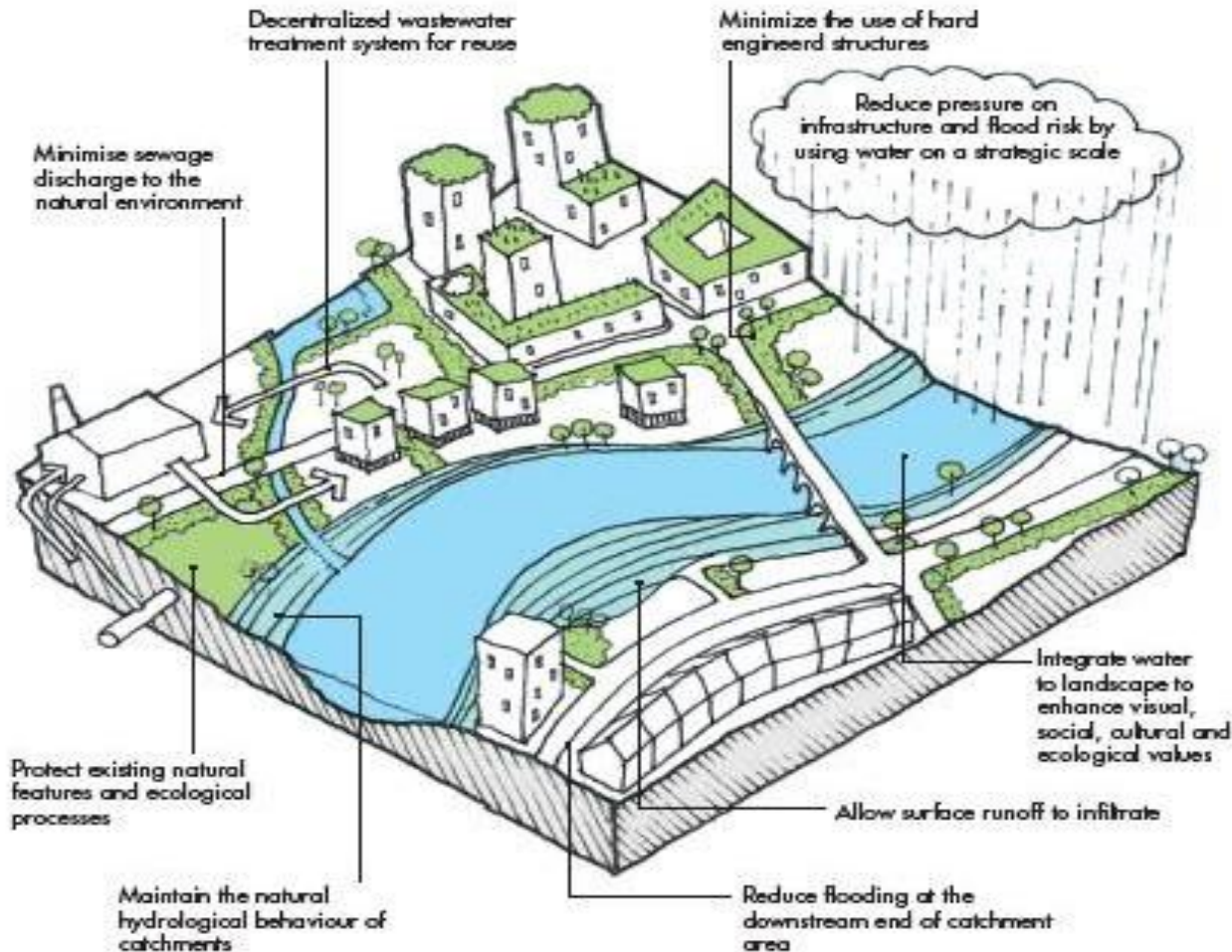
On-site water conservation :

- Rainwater harvesting (RWH) is important to reduce water scarcity

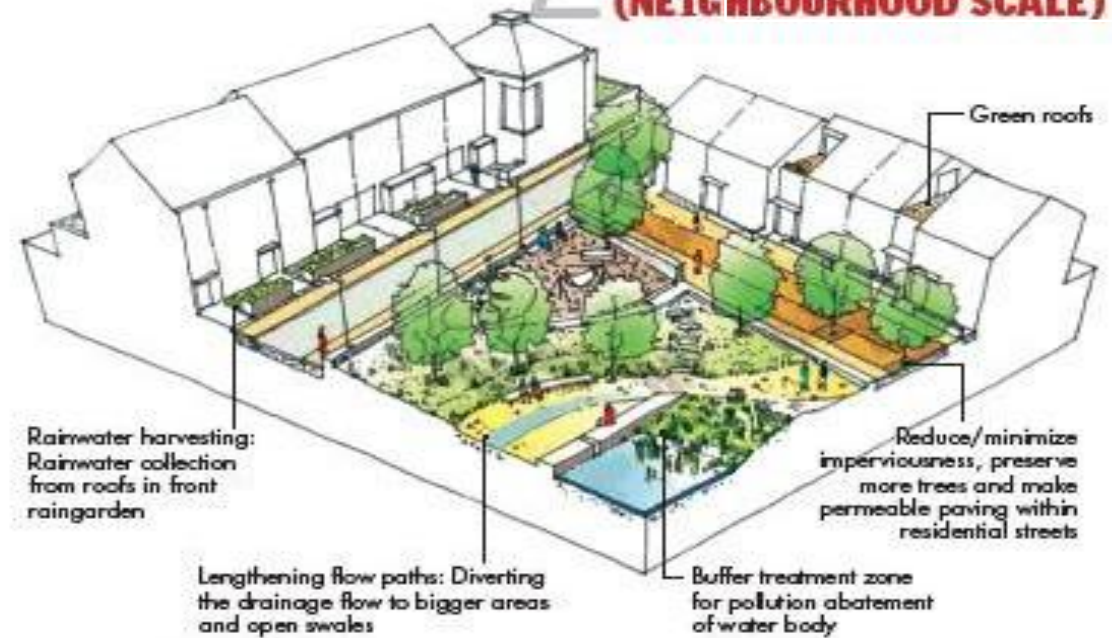
- **Decentralised treatment of wastewater and local reuse**

WSUDP APPROACH ON DIFFERENT SCALES

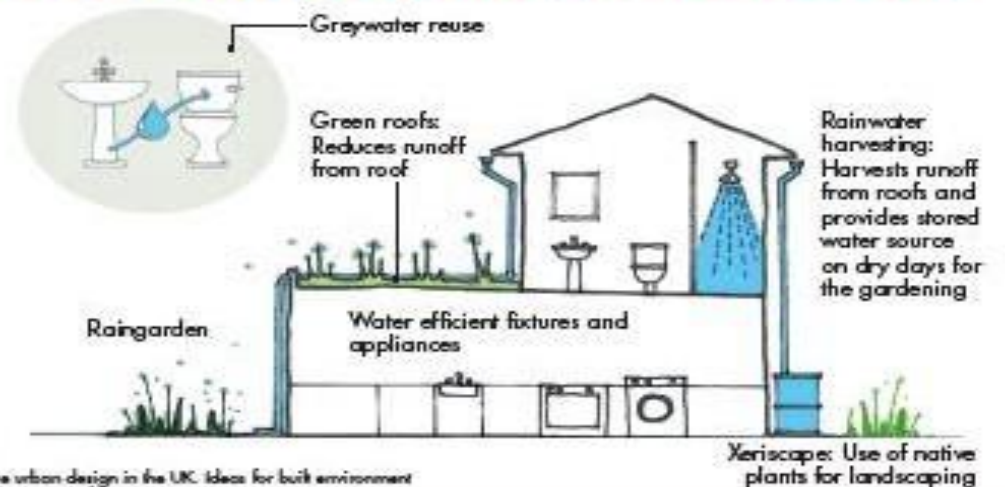
1 WATER-SENSITIVE PLANNING (CITY/ZONAL SCALE)



2 WATER-SENSITIVE DESIGNING (NEIGHBOURHOOD SCALE)



3 WATER-SENSITIVE DESIGNING (INDIVIDUAL SCALE)



CSE-NMCG Launch Event

“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
-

Thank You