

Webinar on Used Water Management For India- Challenges and Opportunities

6th December, 2022
11:00 AM – 12:30 PM (IST)



WEBINAR ON

USED WATER MANAGEMENT FOR INDIA - CHALLENGES & OPPORTUNITIES

Date: December 6th, 2022 | Time: 11:00 AM - 12:30 PM (IST)

| Platform: Zoom | Language: English



Keynote Speaker
G Asok Kumar
IAS
Director General,
NMCG



Speaker
V K Chaurasia,
Joint Advisor,
CPHEEO



Speaker
S Vishwanath
Director,
Biome Environmental
Solutions



Speaker
P G Ganapathy
Senior Advisor,
CDD India



Moderator
**Depinder Singh
Kapur**
Director, Water
Programme
CSE

Speakers



Keynote Speaker

G Asok Kumar

IAS
Director General,
NMCG



Speaker

V K Chaurasia,

Joint Advisor,
CPHEEO



Speaker

S Vishwanath

Director,
Biome Environmental
Solutions



Speaker

P G Ganapathy

Senior Advisor,
CDD India



Moderator

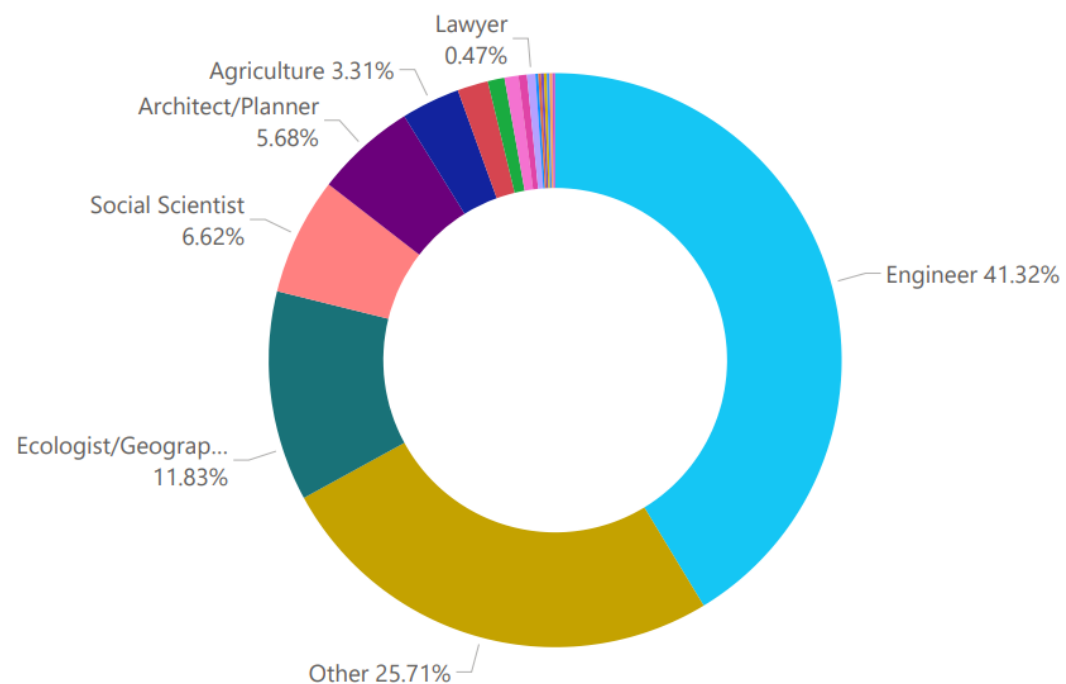
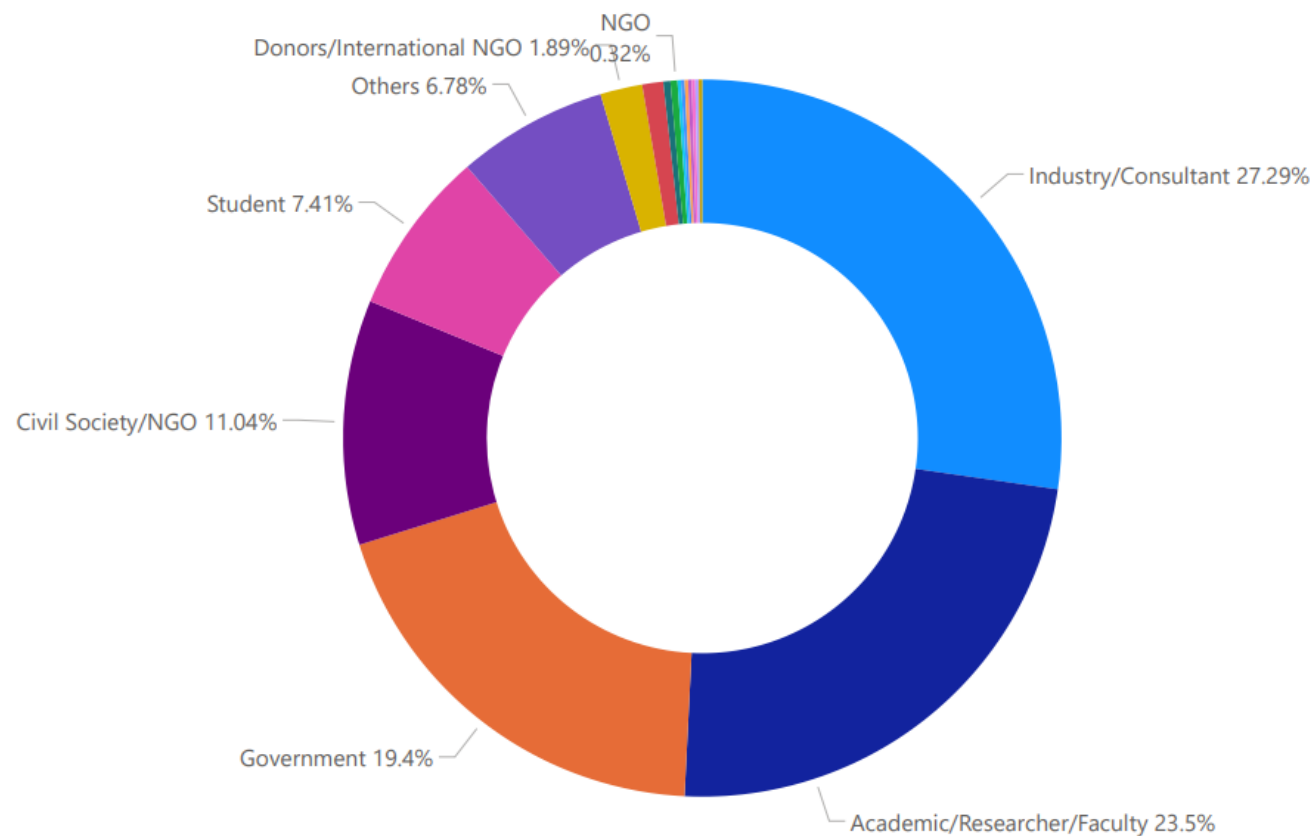
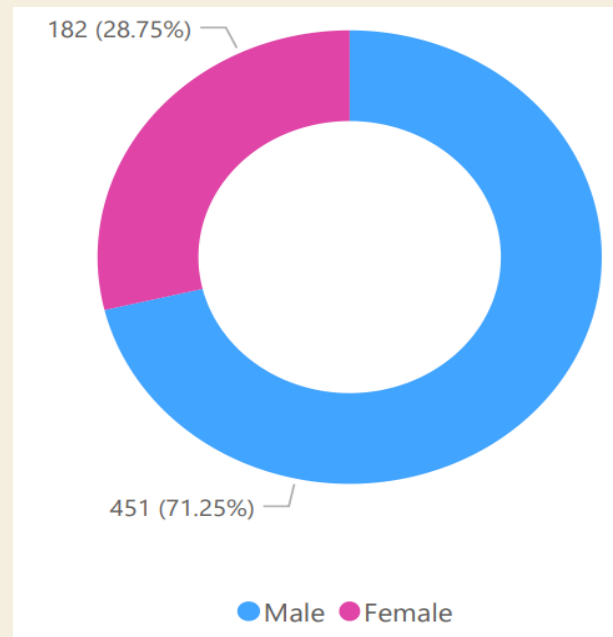
Depinder Singh

Kapur

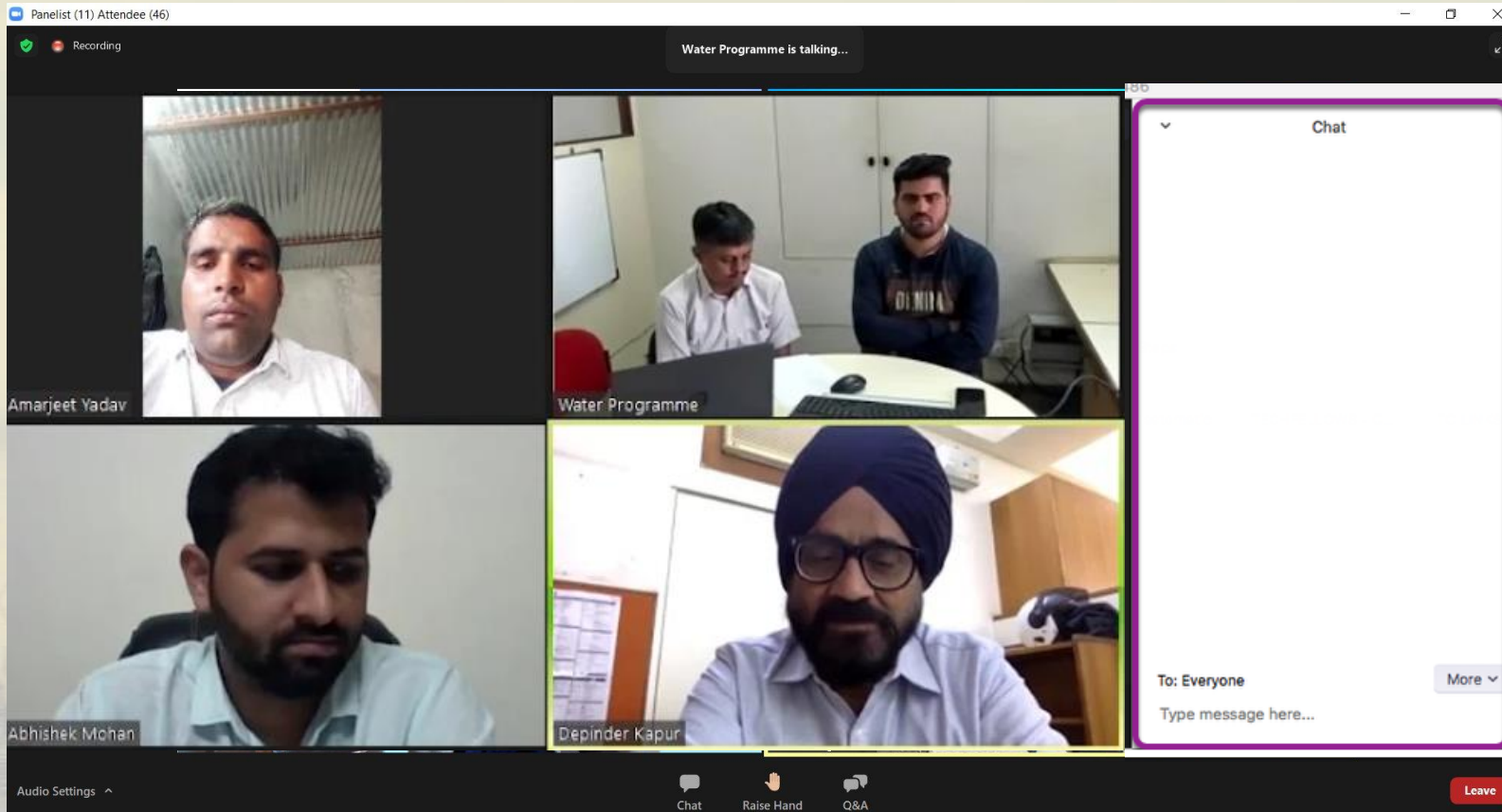
Director, Water
Programme
CSE

Webinar Agenda (6th December, 2022)

| Time | Topic |
|--------------|---|
| 11:00-11:15 | Welcome note and context setting <i>Depinder Singh Kapur, Director, Water Programme, CSE</i> <i>Jyoti Parsad Dadhich, Programme Officer, CSE</i> |
| 11:15-11:20 | Keynote Address <i>G Asok Kumar, IAS, Director General, NMCG</i> |
| 11:20-11:40 | Potential and Priorities of Used Water Management in Various National Missions/Schemes <i>V K Chaurasia, Joint Advisor, CPHEEO, MoHUA, GoI</i> |
| 11:40-12:00 | Used Water Management in Drains <i>P G Ganapathy, Senior Advisor, CDD India</i> |
| 12:00- 12:20 | UWM in a metropolis – Centralised & Decentralised Systems (experiences from Bengaluru) <i>S Vishwanath, Advisor, Biome Environmental Trust</i> |
| 12:20-12:30 | Q&A Session |



Housekeeping Rules

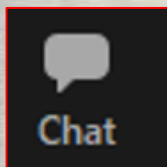


Request to please keep your mic muted unless speaking

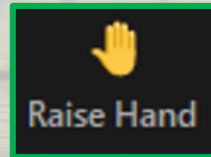


We will be recording the webinar

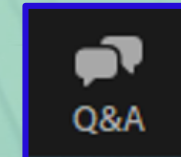
Allocated time for each speaker is **15-20 mins** and Q&A session is 10 mins at the end of the webinar



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



Depinder Singh Kapur

Director, Water
Programme, CSE

Email :

dkapur@cseindia.org

Depinder Singh Kapur is Director - Water Programme at Center for Science and Environment. A senior development and WASH expert, he has worked previously with the national government, with international and national development agencies including NIUA, WaterAid, CARE, Oxfam, WSSCC, SPWD and AKRSP. Led research and advocacy initiatives in livelihoods and WASH, and contributed to the development of urban capacity development frameworks and approaches.

About the CSE-NMCG Programme

➤ Vision:

Making **Ganga basin cities water-sensitive** for improved river health.

➤ Aim:

Capacity building initiatives, action research and developing model projects for making cities in the Ganga basin water-sensitive, by **improving the river flow and health with water-sensitive urban design and planning**.

➤ Objectives:

- Sensitize and **build capacities of 1,300+ municipal and state functionaries**, elected representatives and other key actors as well as the National Mission for Clean Ganga (NMCG) team in making cities water-sensitive.
 - Help improve **convergence of programmes** like Jal Jeevan Mission, Atal Bhujal Mission, Jal Shakti Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and Swachh Bharat Mission.
- Programme Tenure: **3 years**

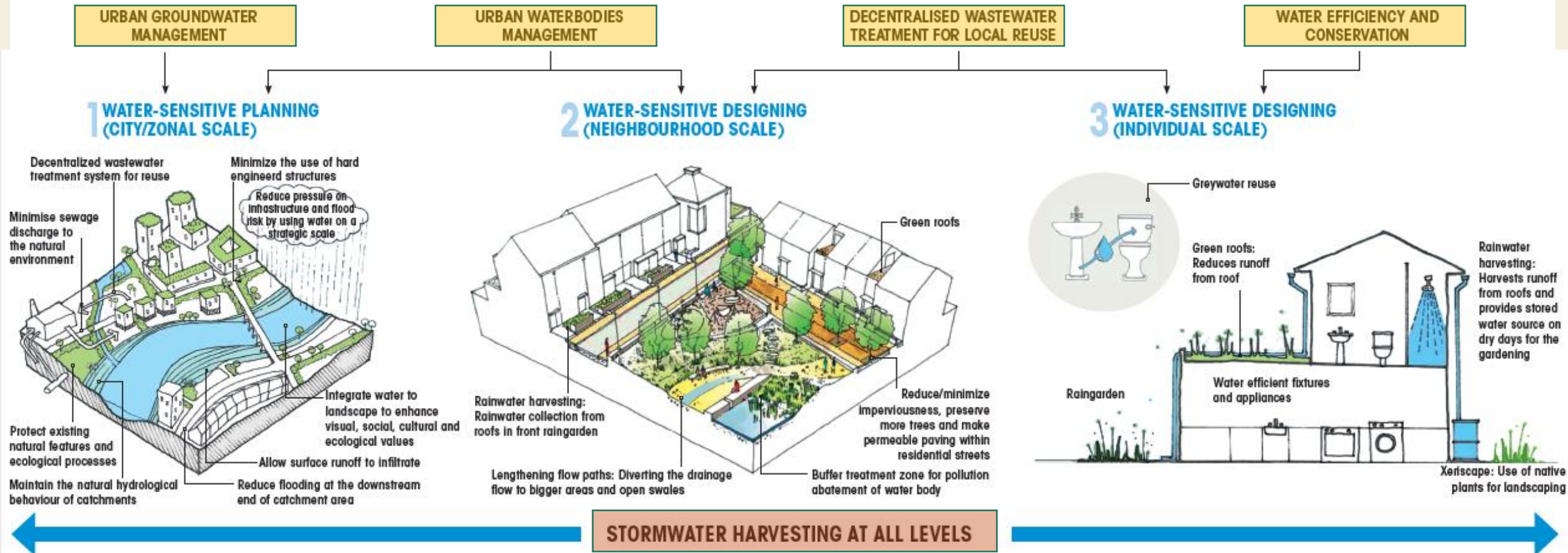
Three Year Activity Plan:

- # **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

Key Thematic Focus Areas

The comprehensive vision of this project is to promote water- sensitivity of cities in the Ganga Basin. The vision is being achieved through five key thematic focus areas

Water Sensitive Urban Design & Planning - Concept and Approach



- The program in its first year achieved significant outreach and build capacities of government officials and other water sector experts:

Webinar: 4 | Online Trainings: 3 | Residential Trainings: 3 | Exposure Visit: 1

Webinar: 10458 | Online Trainings: 469 | Residential Trainings: 93 | Total: 11020

Participation of 1640+ Government Officials

- A great extent of information dissemination was also done for the general public and **relevant stakeholders**, under this initiative through media **collaterals like brochures and web page**.
- A **Research Report was also published-** “Roadmap for Implementation of Water-Sensitive Urban Design and Planning (WSUDP) in Uttar Pradesh: Storm water harvesting in Parks and Open Spaces”. This report showcases the potential of run-off infiltration in storm water harvesting systems in parks and green open spaces in **five cities—Lucknow, Kanpur, Varanasi, Prayagraj and Moradabad —in Uttar Pradesh**.

Online Trainings under CSE-NMCG Programme – 2022-2023

AAETI

Centre for Science and Environment (CSE), New Delhi, is organising five online trainings. The schedule for the same are given below

| ONLINE TRAINING PROGRAMME TITLE | DURATION | LAST DATE FOR SENDING NOMINATION |
|--|----------------------------|----------------------------------|
| Urban Groundwater Management | June 21 – July 1, 2022 | June 15th, 2022 ✓ |
| Water-Sensitive Urban Design and Planning – Rain / Stormwater Harvesting at different scales | August 03 – 20, 2022 | August 01st, 2022 ✓ |
| Urban Waterbodies Management | Sept 28 – October 14, 2022 | September 20th, 2022 ✓ |
| Decentralised Wastewater Management and Local Reuse | November 2 – 16, 2022 | October 15th, 2022 ✓ |
| Water Efficiency and Conservation | March 14 – 27, 2023 | March 1st, 2023 |



Residential Trainings under CSE-NMCG Programme – 2022-2023

Centre for Science and Environment (CSE), New Delhi, is organising five trainings. The schedule for the same are given below

Residential Trainings

| | | | | |
|----|--|-------------------|---|---|
| 1. | Water Sensitive Urban Design and Planning (WSUDP) – Rain / Stormwater Harvesting at different scales | Nov 9 – 12, 2022 | Ms. Shivani Yadav (shivani.y@cseindia.org) | ✓ |
| 2. | Urban Waterbodies Management | Nov 22 – 26, 2022 | Mr. Dhruv Pasricha (dhruv.pasricha@cseindia.org) | ✓ |
| 3. | Decentralised Wastewater Management and Local Reuse | Dec 20 – 23, 2022 | Mr. Jyoti Parsad (jyoti.parsad@cseindia.org) | |
| 4. | Urban Groundwater Management | Jan 10 – 13, 2023 | Dr. Sumita Singhal (sumita.singhal@cseindia.org) | |

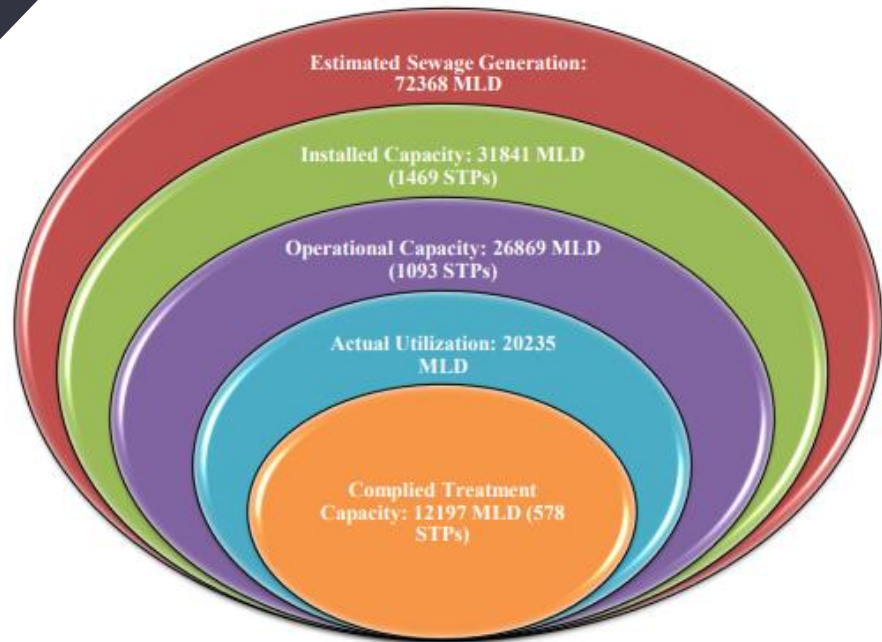
Water and Sanitation Conclave

1-3 March. 2023

**Dr. Sumita Singhal
(sumita.singhal@cseindia.org)**

WHAT IS THE USED WATER MANAGEMENT CONTEXT OF INDIA

Wastewater Treatment Scenario



India has sewage treatment capacity of only 30% of total sewage generated but Delhi and Mumbai alone have **40 per cent** of that capacity in the country.

Partial Treatment = Pollution

- 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**

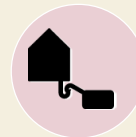
But

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

Uttar Pradesh State: Sanitation Profile

Urban Sanitation Status

90% of population is not served by sewage or septage treatment facilities



67.9%

Population dependent on non-sewered sanitation systems¹

¹ Estimated using extrapolated population dependent on non-sewered sanitation systems, considering data provided in Census 2011



31 cities out of 735

Have sewage treatment plants



40 cities

Have sewage and septage infrastructure



75 cities out of 735

Have existing/ proposed sewage and septage infrastructure



2,43,286
Area
(Square km.)

912:1000
Gender Ratio
(F:M)

60
AMRUT
Towns

241 Million
(projected
for 2022)

748
ULBs

11
SMART
Cities

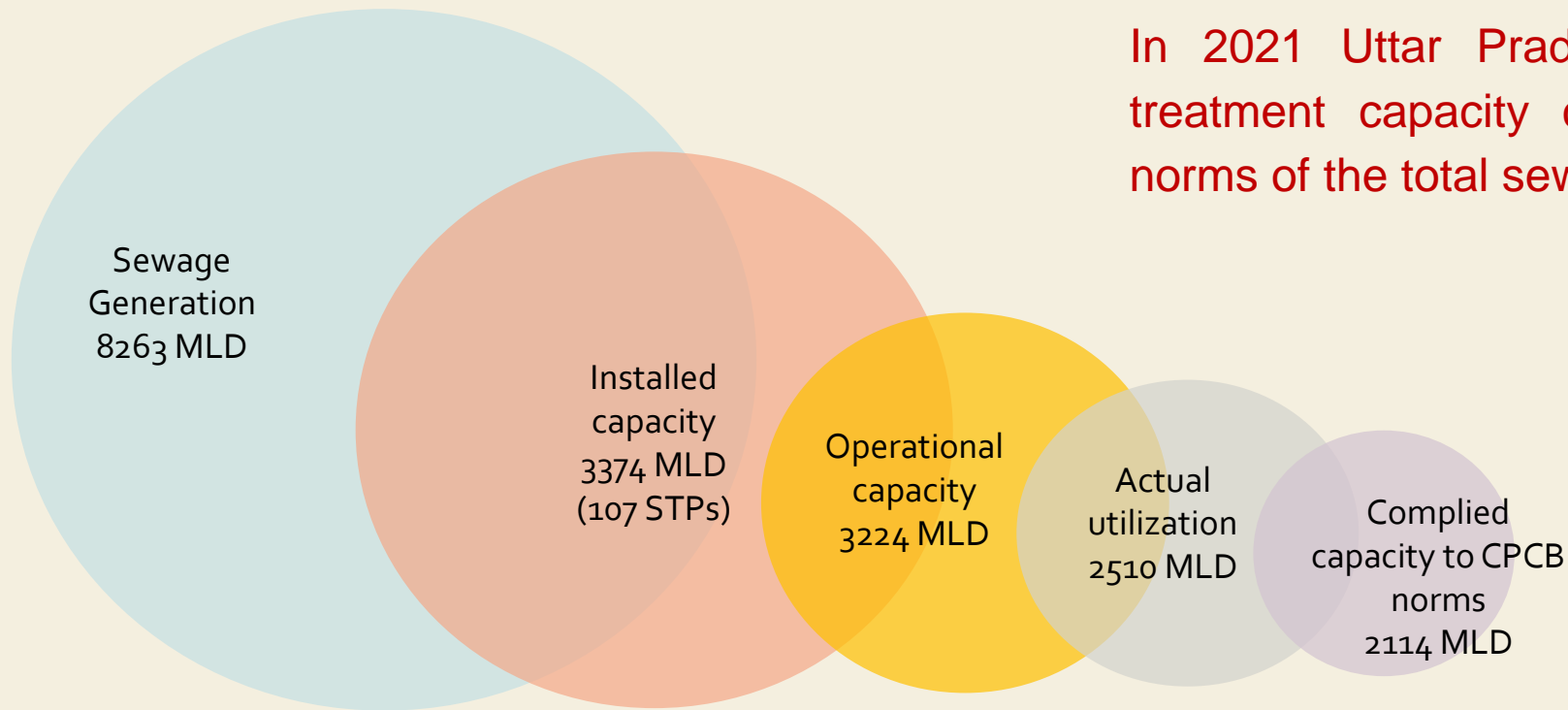
75
Districts

52.4
Million
Urban
population
(Projected
for 2022)

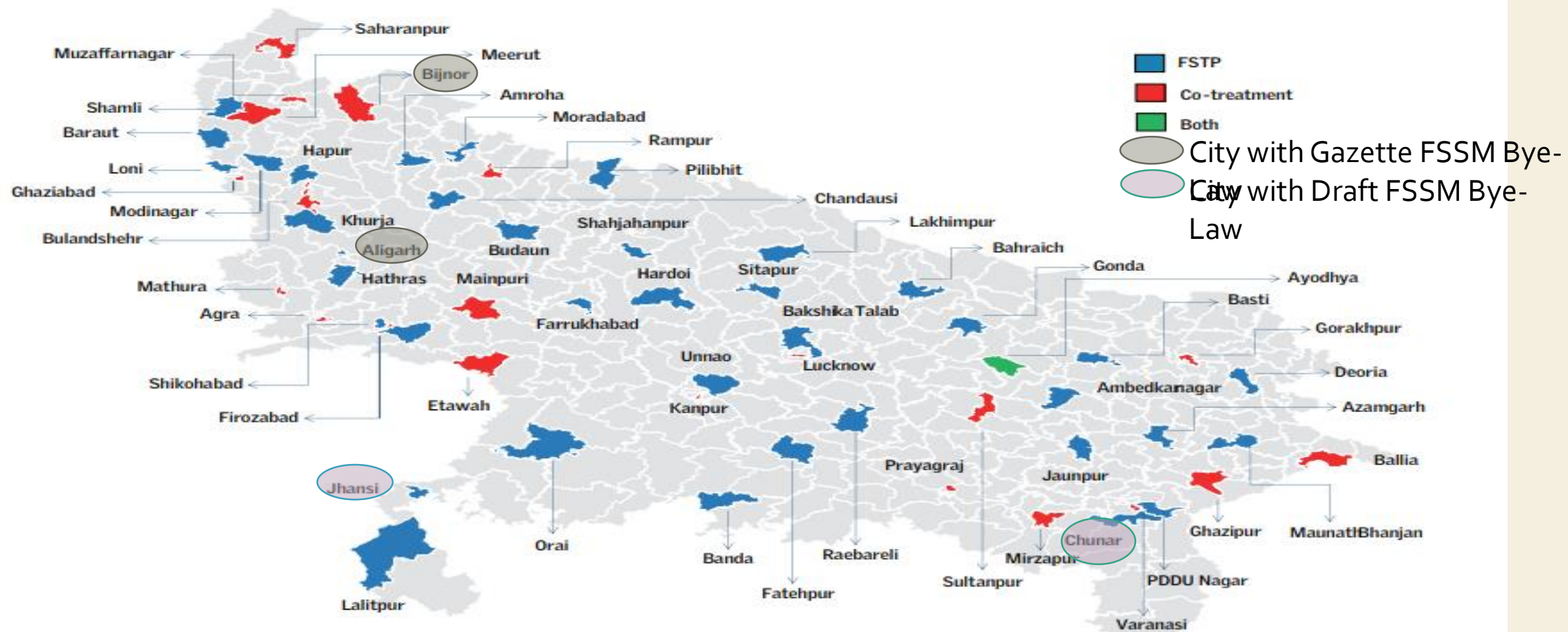
31
NMC
Priority
towns

Sewerage and STPs

In 2021 Uttar Pradesh has only 25.5% sewage treatment capacity complying to CPCB discharge norms of the total sewage generated.



- Sewerage system- Only 20% of the urban areas
- Only 31 towns (out of 734 in the state) have partial coverage by sewerage systems (2021).



Source: Uttar Pradesh Jal Nigam

- Currently Uttar Pradesh state has an Uttar Pradesh Septage Management Policy, 2019 which articulates following three septage management (SM) visions:

“By end of 2023, all ULBs have implemented SM solutions in an inclusive manner empowering all stakeholders in the process.”

Assessment of the characteristics of wastewater

Domestic wastewater

Domestic + Industrial Effluent

Alternate Solution-
ETP/CETP

Sewerage System +
STP- Co- Treatment

I&D + STP- Nallah+
Co- Treatment

FSTP + DWWTs

Possibility of I&D + STP + Co- Treatment

Land Availability- near nallah

Nallah Flow

Yes

Funds- O&M

No

Electricity connections at I&D points

Yes

No

Topo- Favourable

Topo- Non-
Favourable

Perennial

Non-perennial

I&D + STP +Co-
treatment

In-situ treatment +
FSTP + DWWTs

I&D + STP + Co-
treatment

FSTP + In-situ
treatment + DWWTs

Less Efforts - I&D
Conveyance

More Efforts- I&D
Conveyance

I&D+ STP + Co-
treatment

In-situ treatment +
FSTP + DWWTs

I&D + STP +
Cotreatment

In-situ treatment
+ FSTP + DWWTs

ABOUT NMCG



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 & AMRUT Mission

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**

Namami Gange Programme – At a glance

Sanctioned Projects

ACTIVITIES UNDER PROGRESS



Project Status - Namami Gange Programme

- Under Implementation – 49 Sewage management projects
- Completed – 98 Sewage management projects in the states of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Delhi, Himachal Pradesh, Haryana, and Rajasthan.
- Under Tendering – 21 sewage projects
- AA& ES Issued – 8 Projects
- Modular STPs Decentralized Treatment - Rs. 410 Crores



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** (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 (primarily agriculture) resulting in **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 (climate change)**.

Inadequate sewage treatment (incl. conveyance) and reuse of treated wastewater and under performance of Sewage Treatment Plants.

ABOUT CSE



About CSE, Water Program

- Centre for Science & Environment (CSE) was set up in 1980's, in Delhi – as a registered non profit society.
- An institution to bridge the gap between information and knowledge; between knowledge and public awareness; to influence public policies and practices for sustainable development – *'to promote sustainable development with equity, participation and democracy'*.
- Awarded the *Stockholm Water Prize* – 2004, *Indira Gandhi Prize for Peace, Disarmament and Development* – 2018, *Edinburgh Medal* – 2022
- **Centre of Excellence** in the Sustainable Water management area – Ministry of Urban Development
- **National Key Resource Centre** of Ministry of Jal Shakti
- **Anil Agarwal Environment Training Institute (AAETI)** – State-of-art training institute and living lab

Action Research

Advocacy

Capacity
Development

Cross-Learning

Water Programme

Urban Water

Rural Water

FSM Laboratory

- **Team strength:** 24 members (7 urban, 7 rural, 5 lab, 5 UP)
- **Diverse professions:** Engineers, Architects, Planners, Economics, Public Policy, Env. Science, Management
- **Offices:** Delhi, Lucknow (PSU), Bijnor, Chunar (TSU), AAETI (Laboratory)



Centre for Science and Environment

Research & advocacy

Programmes

- Air Pollution & Mobility
- Climate Change
- Industry: Pollution & Energy
- Environment Education
- Sustainable Food Systems
- Sustainable Habitats & Cooling
- Municipal Solid Waste
- **Water, Wastewater, Sanitation**

Communication

Media resource centre

- Strengthen reportage of mainstream and regional journalists on environment

Down To Earth (since 1992)

- English, Hindi & Digital editions

Websites, E-newsletters, media

- Campaign tools for outreach
- India Environment Portal

Pollution monitoring

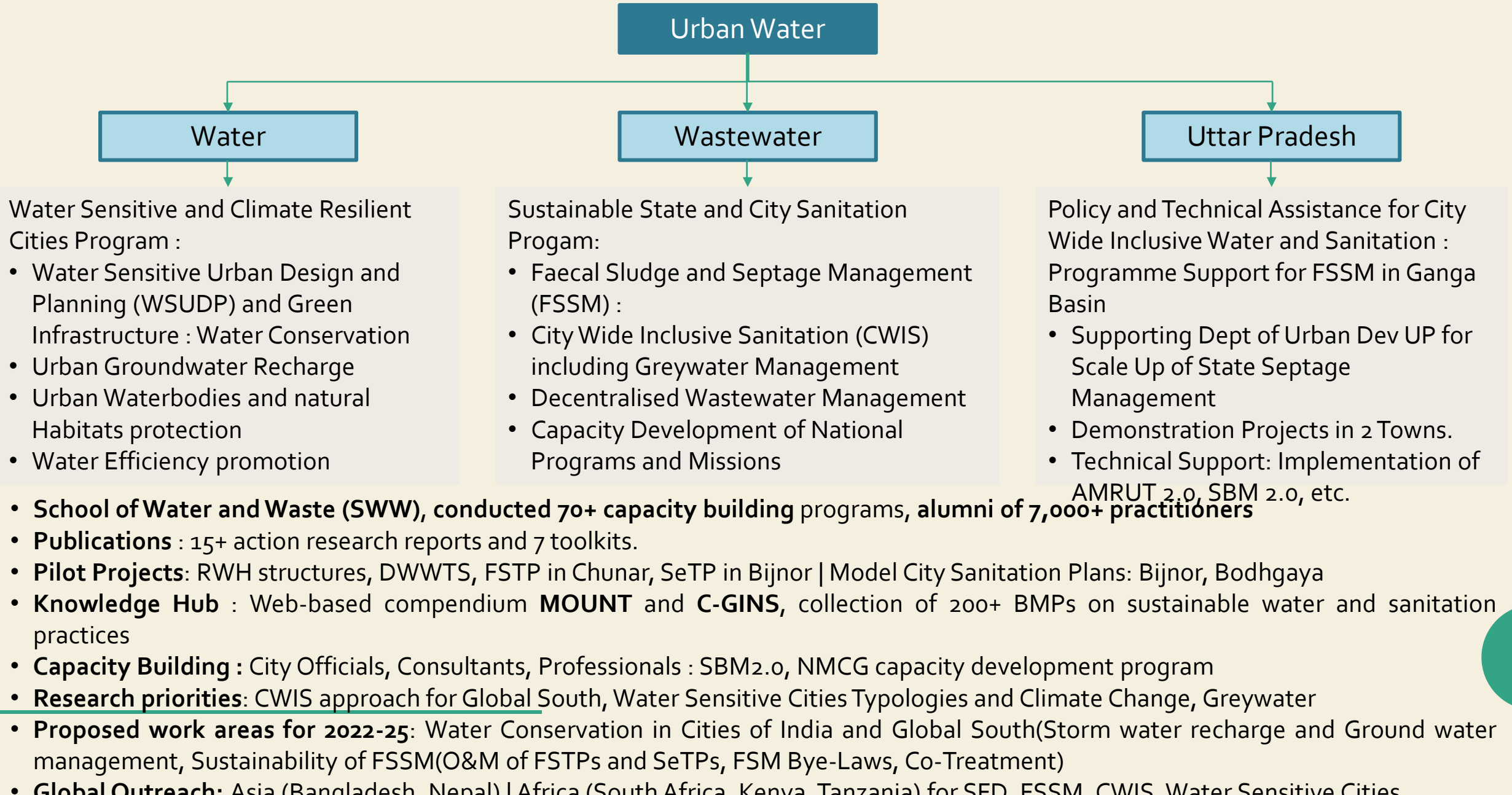
- **Environment Monitoring Lab**
Pollution, toxins in food, waste, water, FSM
- Independent information in public domain

Education, Training

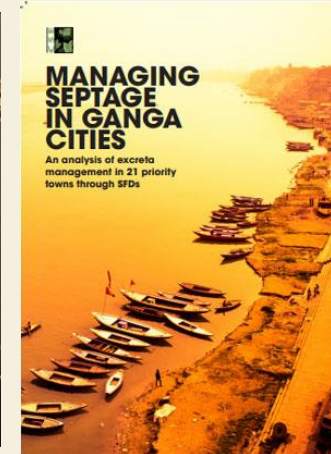
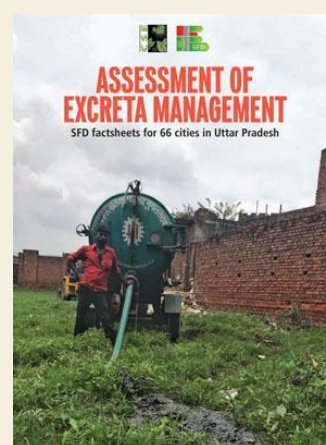
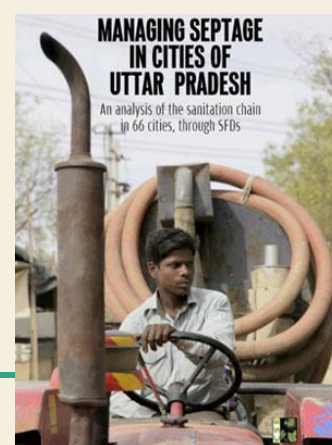
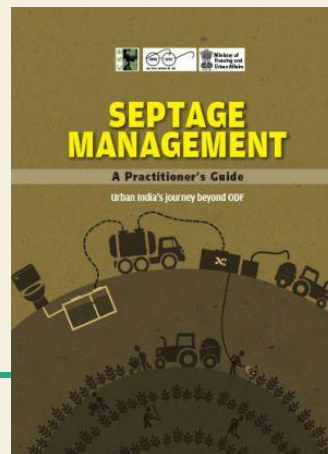
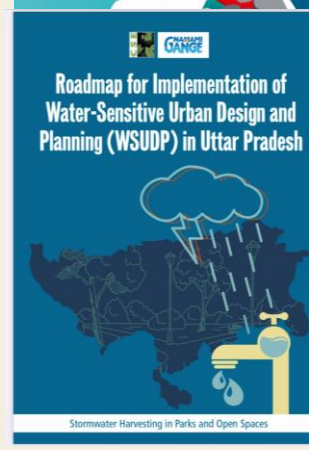
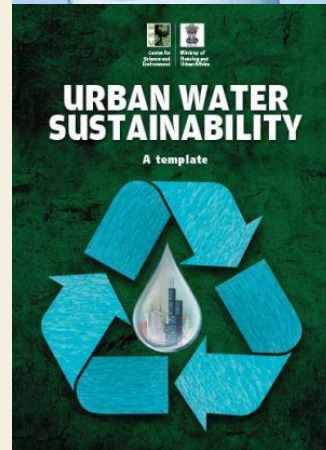
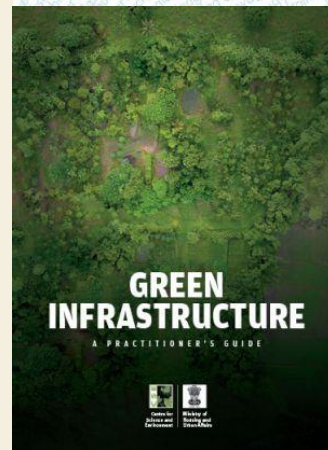
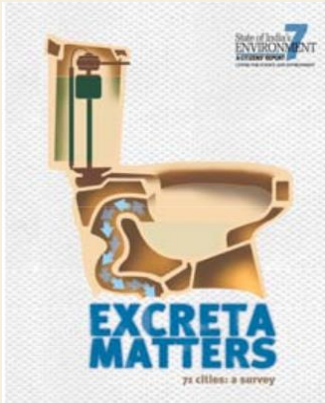
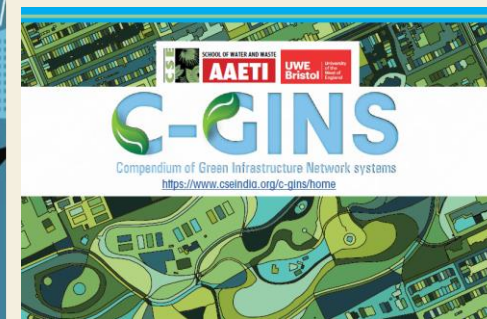
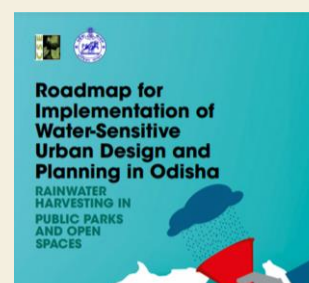
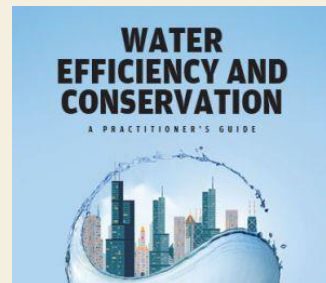
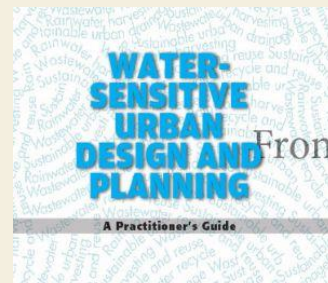
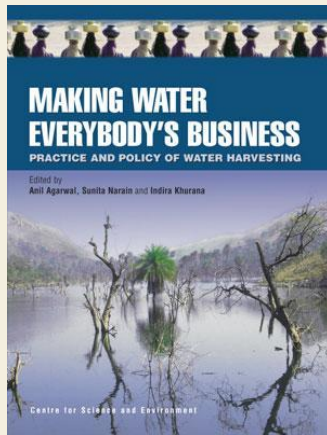
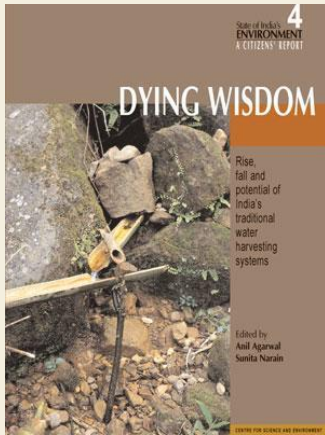
Anil Agarwal Environment Training Institute

- Build capacities on environment (India & across global South)
- Green campus

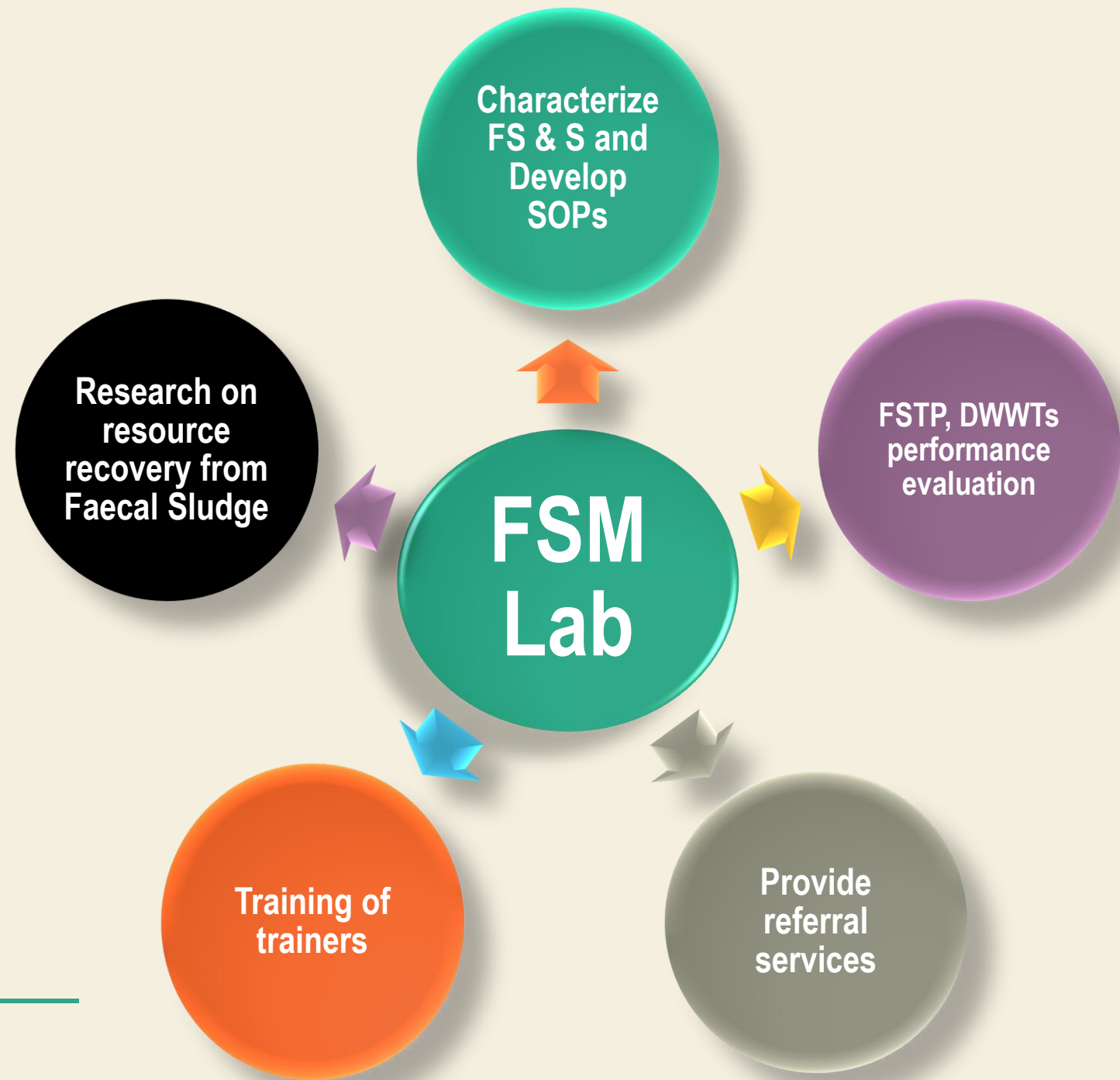
Urban Water



Publications and Web-Compendiums



FSM Lab at AAETI





G Asok Kumar, IAS
Director General,
NMCG

G Asok Kumar is the Director General of the National Mission for Clean Ganga (NMCG) under the Ministry of Jal Shakti. He belongs to the Indian Administrative Services Telangana Cadre 1991 batch. In the past, he has held several important positions such as Joint Secretary in the Ministry of Civil Aviation, GoI and Director in the Ministry of Power. In the past, he has also served as the Executive Director Projects in National Mission for Clean Ganga. He has worked extensively in the water sector. Before joining NMCG, he served as the Mission Director for National Water Mission where his inspiring work in “Jal Shakti Abhiyan: Catch the Rain” campaign led to the sanction of over 9.5 lakh water conservation and rainwater harvesting structures all over India. This resulted in him receiving the popular moniker - “the Rain Man of India”. He has also spearheaded several innovative initiatives such as the monthly “Water Talks” and “Water Tech Talks”, preparation of water budgets for all states, water audit of various industrial sector units and irrigation projects to improve the water use efficiency, etc. Additionally, as the District Collector in 2002, he supported the construction of over 0.14 million household toilets in 1000 schools in Nizamabad district and was responsible for providing drinking water supply to over 3 million people in Hyderabad in 2008.



Vijay Kumar Chaurasia

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

Email :
vkchaurasia1969@gmail.com

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.



P G Ganapathy
Senior Advisor
CDD India

Email:

ganapathypg@cddindia.org

PG Ganapathy is an infrastructure and sustainability professional who brings with him around 25 years of experience in the infrastructure sector spanning water & sanitation, housing & real estate, urban infrastructure and sustainability. Currently, he is Senior Advisor at CDD India and he drives strategic initiatives, outreach activities and program management across sectors. From 2006, PG was an independent consultant providing professional services as Mentor, Director, Advisory Board Member bringing his expertise as an Infrastructure & sustainability specialist with organisations such as Mckinsey & Co., IIHS, iDeck, Wipro, JUSCI (TATA Group), etc. He also has worked as an individual consultant with ADB & World Bank. Prior to this, PG held senior positions in several corporations: he was the Regional Manager for South Asia in the water division of Black & Veatch (B&V), worked with the Mahindra Group in their real estate and infrastructure division, and worked for 9 years (of which 6 years as a partner) in the start- up phase of Feedback Ventures. PG is a Mechanical Engineering Graduate from IIT Madras and a PGDBM from IIM Ahmedabad (1993).

**S Vishwanath**

Advisor

Biome Environmental Trust

Email : zenrainman@gmail.com

S Vishwanath is a Civil Engineer and an Urban Planner. He is a Trustee with the Biome Environmental Trust with 32 years of experience in the water, wastewater and sanitation sector. He is an Adjunct Professor and teaches a course on Water at the Azim Premji University, Bengaluru, India. He writes a weekly column called Waterwise in The Hindu. Has extensive expertise in providing knowledge services in water management and rainwater harvesting, ecological wastewater treatment and sanitation practices.

AAETI

Thank You

