Nature Based System for Waste Water Treatment

Setting the Context for Vermi filtration
Not for profit established in 2005

30+ Partners all over India

BORDA & CDD Network (22 Partners)
Our Solution Ecosystem

All our products and service portfolio are designed *keeping the community at the centre*, to create long lasting impact.

**Integrated Urban Water Management**

- Wastewater Treatment & Reuse
- Waterbody Rejuvenation
- Faecal Sludge Management
- Solid Waste Management

- Technical Consulting
- Capacity Building
- Applied Research & Development
- Knowledge Management & Publications
The future of WWT for an urban context is a 'mix of solutions' approach

Source: Consultant Capacity Development training developed by Eawag
Decentralised systems are effective in terms of Cost & Time

**Centralized Approach**
- Cost for constructing sewer lines, pumping stations, STP
- Scale of construction
- O&M cost
- Risk due to system failure

**Decentralized Approach**
- Scale of construction
- Initial investment flexible
- O&M cost
- Risk due to system failure

Decentralised systems are effective in terms of Cost & Time.
Decentralised systems present many advantages

Possibility of **Reuse** at the treatment site

Community participation in operation and maintenance

Easier maintenance of the system

**Cost effective**

Less vulnerability due to smaller scale

For pollution abatement of ponds, rivers etc.

Groundwater recharge is possible

Better control over quality of treatment

Less power requirement

Enables nutrient/energy recovery

**Decentralized WW Treatment**
Decentralised WW treatment systems are gaining ground

- Identified Decentralized approaches for wastewater management brought guidelines in December 2012
- CPHEEO introduced a chapter called “DECENTRALIZED SEWERAGE SYSTEM” in Manual on Sewerage and Sewage Treatment Systems - 2013

SBM-Urban published the Advisory on Onsite-Off site sewage management practices in July 2020

Recommended to install decentralized STPs to fill gap in Wastewater management under Yamuna action plan 2020

Numbers of decentralised STP are increasing more and more every year

Source for 2020 value: Klinger et al. (2020)
The first wave of decentralisation was through conventional electro-mech systems

Activated sludge process
MBBR
Sequencing Batch reactor (SBR)

Insufficient Supervision
Turn-off pump & blower to save cost
Unsafe Sludge Management
Poor function during load variations

Decentralised systems have their share of challenges
NBS for DWWT offer some advantages

Soil Biotechnology
- Lower O & M

Phytorid systems
- No Blower, Pump – If needed
- Low sludge generation

DEWATS
- Can function with load variations
However, NBS have their share of challenges

- Higher CapEx
- Larger Footprint
- Need additional units to meet stringent effluent standards

NBS systems need innovations to overcome these challenges
New innovations in NBS systems are emerging

Algae Based system

Will Vermi Filtration Gain Ground in the coming Years?

Vermi Filters

Effective Microorganism
Thank you
&
Welcome to the Conference

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