Nature Based System for Waste Water Treatment

Setting the Context for Vermi filtration

Consortium for DEWATS Dissemination Society

Not for profit established in 2005

30+ Partners all over India

BORDA & CDD Network (22 Partners)

reflow · DESIGN COLLABORATIVE · Excellent Novel Radical · ALCHEMY · hunnarshälä FOUNDATION · ENPHO · CSR · FEDINA · EcoPro · STAESPH · Prakruthi · LEDeG · WASTE WISE TRUST · CfID Centre for Integrated Development

BILL & MELINDA GATES foundation

Federal Ministry for Economic Cooperation and Development

Freie Hansestadt Bremen

BORDA

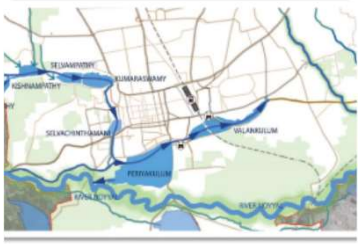
weltwärts Bremen

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



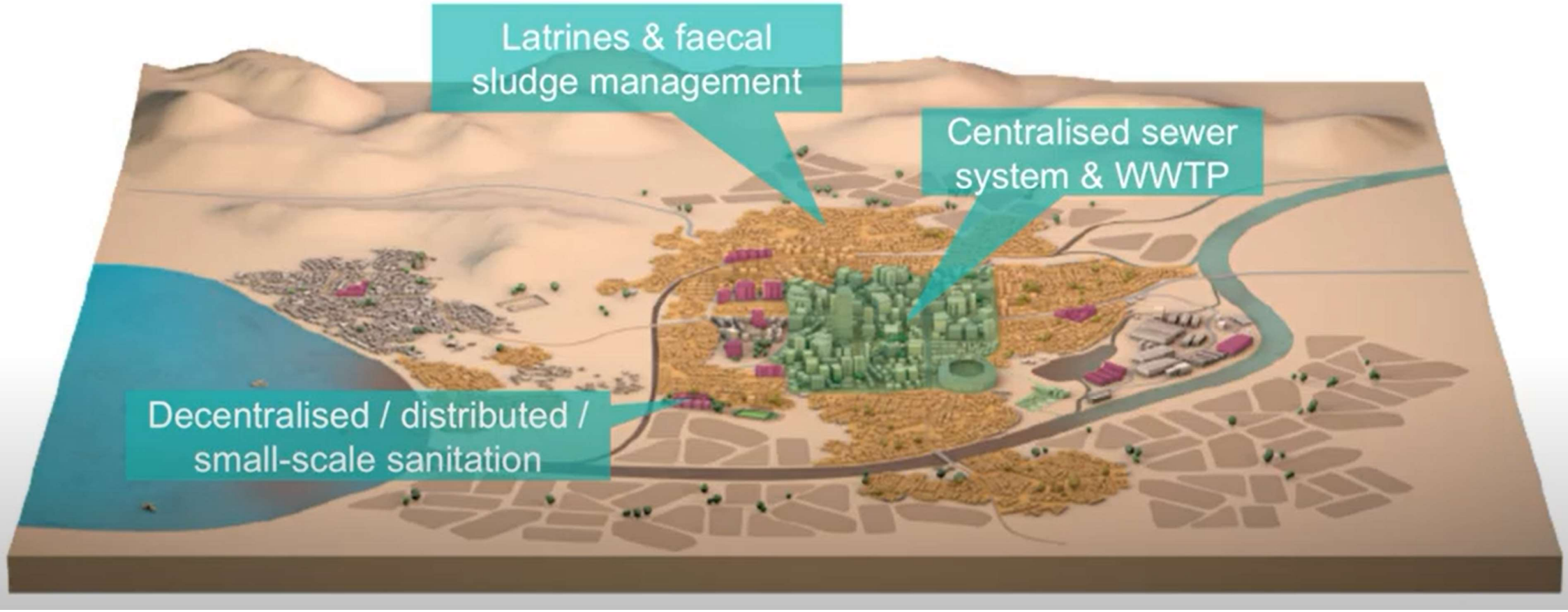
Waterbody Rejuvenation

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

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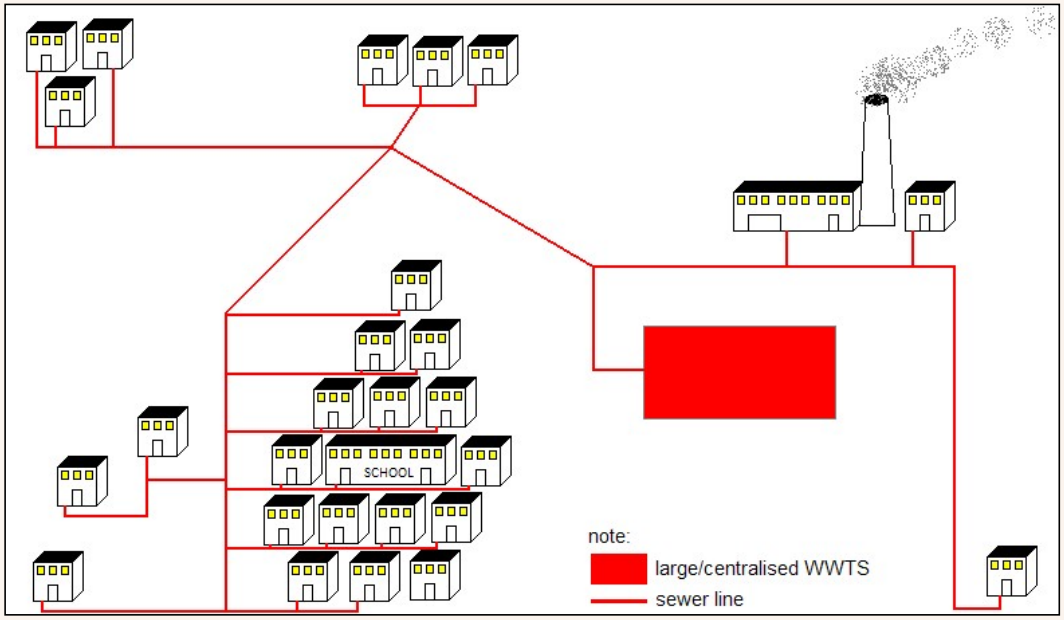
Centralized Approach

Cost for constructing sewer lines, pumping stations, STP ↑

Scale of construction ↑

O&M cost ↑

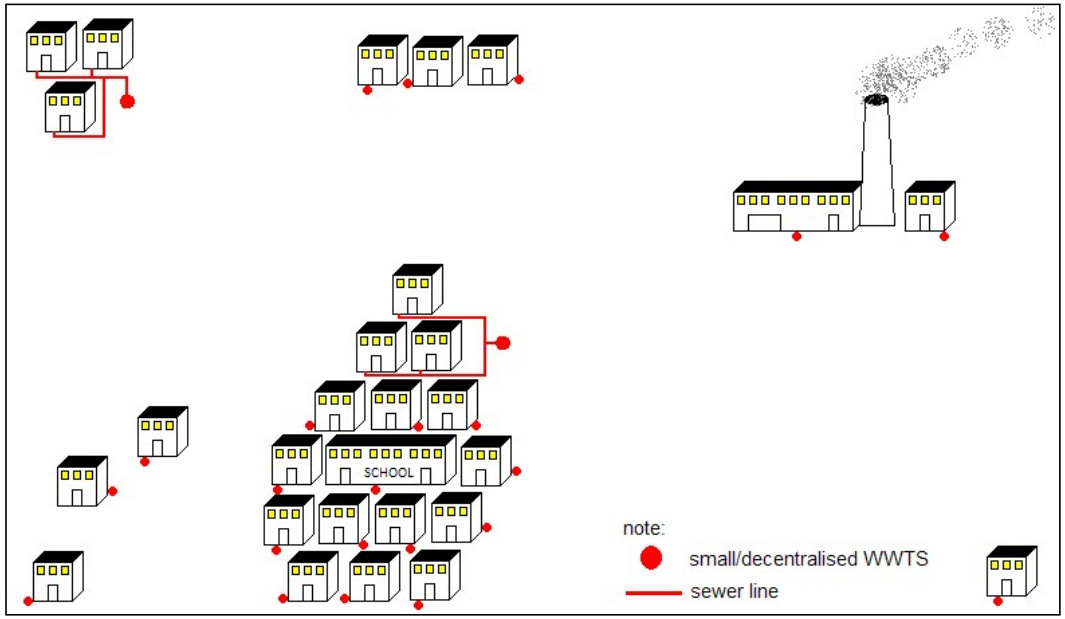
Risk due to system failure ↑



Decentralized Approach

Scale of construction ↓ Initial investment flexible ✓

O&M cost ↓ Risk due to system failure ↓



Decentralised systems present many advantages

Possibility of Reuse at the treatment site

Community participation in operation and maintenance

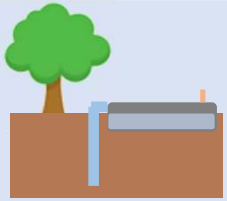
Easier maintenance of the system

Cost effective

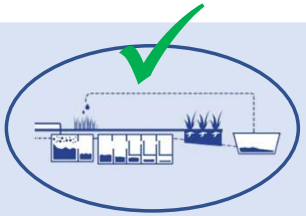
Less vulnerability due to smaller scale

Decentralized WW Treatment

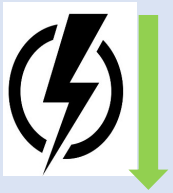
For pollution abatement of ponds, rivers etc.



Groundwater recharge is possible



Better control over quality of treatment



Less power requirement

Enables nutrient/ energy recovery

Decentralised WW treatment systems are gaining ground

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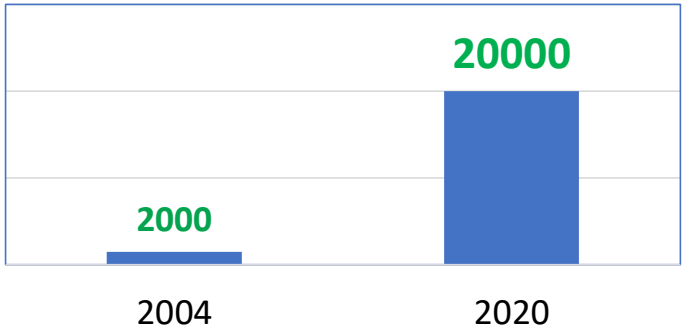
Central Public Health & Environmental Engineering Organisation (CPHEEO)
Ministry of Housing and Urban Affairs, Goverment of India
सत्यमेव जयते

- 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



Numbers of decentralised STP are increasing more and more every year

Source for 2020 value: Klinger et al. (2020)

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

National Green Tribunal

The first wave of decentralisation was through conventional electro-mech systems

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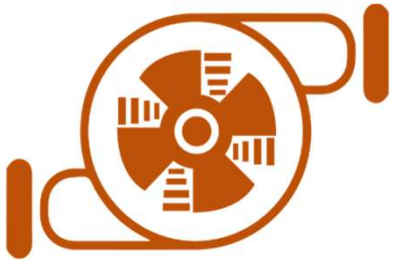
Activated sludge process

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

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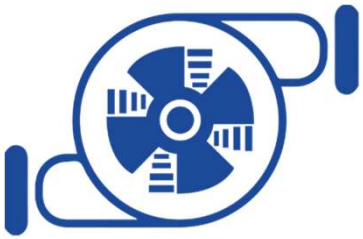
Soil Biotechnology

Phytorid systems

DEWATS

Lower
O & M



No Blower, Pump –
If needed

Low sludge
generation

Can function with
load variations

However, NBS have their share of challenges

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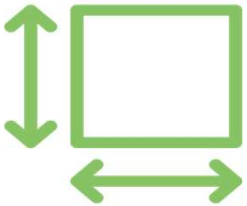
Soil Biotechnology

Phytorid systems

DEWATS

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

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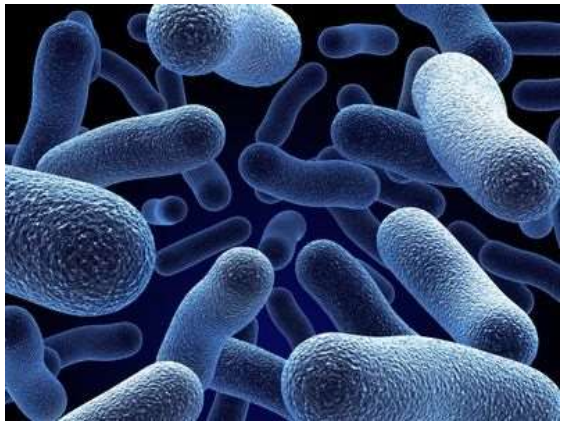
Algae Based system

Vermi Filters

Effective Microorganism



Will Vermi Filtration Gain Ground in the coming Years?

Thank you
&
Welcome to the Conference

Contact Us

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