

Webinar on Safe Water, Sanitation and Health for all during and post COVID-19

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Ministry of Housing
and Urban Affairs
Government of India



Sewage Treatment Options

Central Public Health and Environmental Engineering Organisation (CPHEEO)

www.swachhbharaturban.gov.in

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Current Trend in Sewage Management



Sewage Treatment Technologies



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graph TD; A[Sewage Treatment Technologies] --> B[Onsite Treatment Technologies]; A --> C[Offsite Treatment Technologies]; B --> D["1. Conventional Septic tank with soak pit or dispersion trenches<br/>2. Improved Septic tank<br/>    i. Up-Flow Anaerobic Filter<br/>    ii. Package septic tank-Contact aeration type system<br/>3. Johkasou Systems-Advanced On-site Sewage Treatment Systems<br/>4. Bio-Digestor"]; C --> E["1. Waste Stabilisation Ponds (WSP)<br/>2. Activated Sludge Process (ASP)<br/>3. Extended Aeration Process (EAP)<br/>4. Sequencing Batch Reactor (SBR)<br/>5. Moving Bed Biological Reactor (MBBR)/Fluidized Aerated Bed (FAB)<br/>6. Membrane Bioreactors (MBR)<br/>7. Upflow anaerobic sludge blanket (UASB)<br/>8. Phytoid Processes/ Constructed Wetland"];
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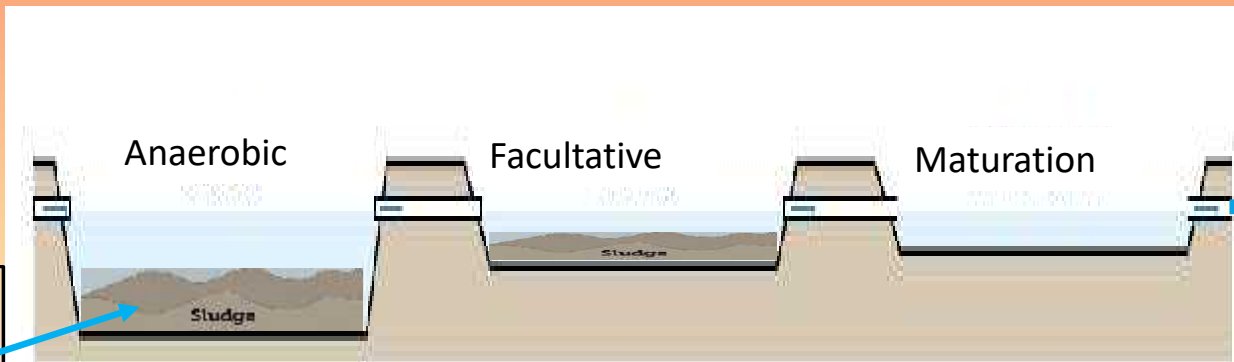
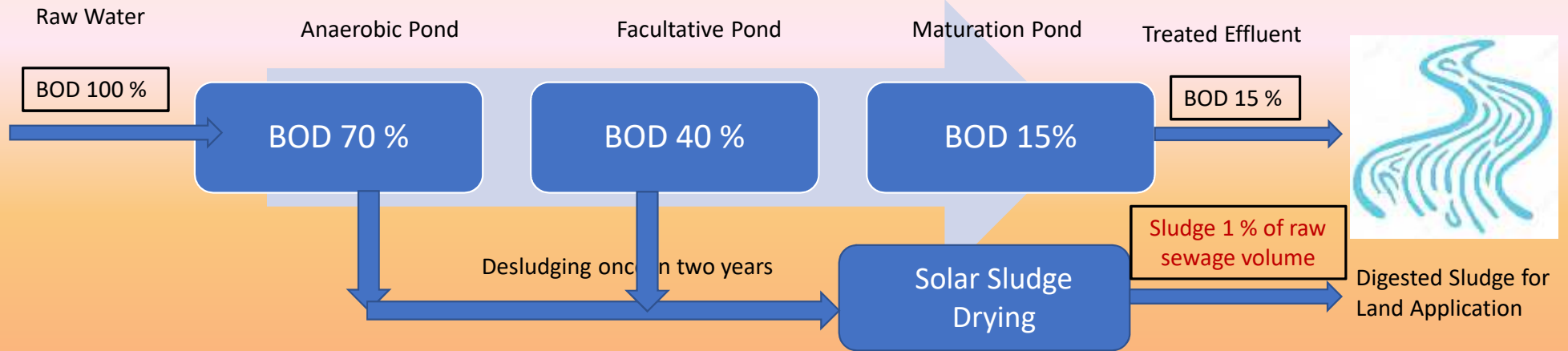
Onsite Treatment Technologies

1. Conventional Septic tank with soak pit or dispersion trenches
2. Improved Septic tank
 - i. Up-Flow Anaerobic Filter
 - ii. Package septic tank-Contact aeration type system
3. Johkasou Systems-Advanced On-site Sewage Treatment Systems
4. Bio-Digestor

Offsite Treatment Technologies

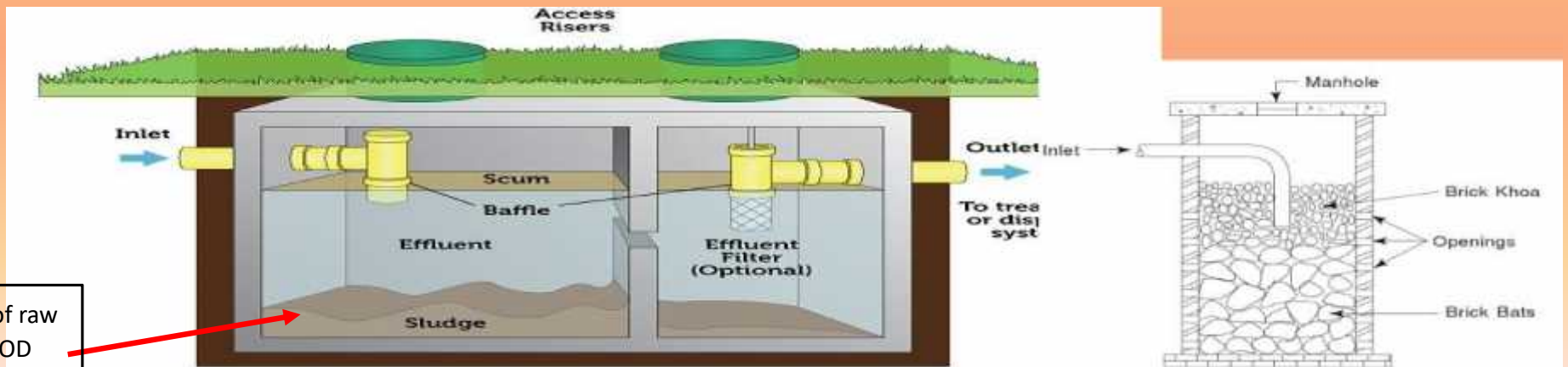
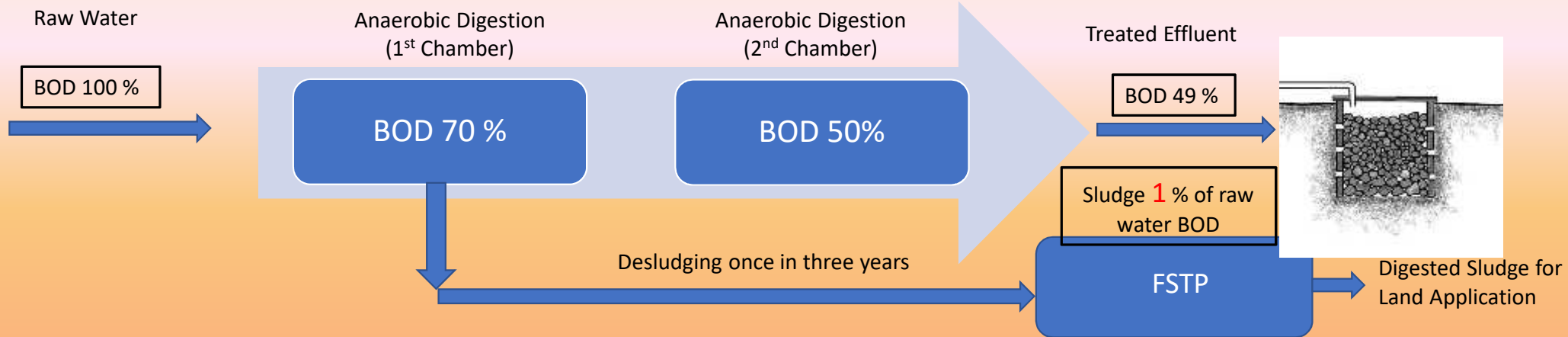
1. Waste Stabilisation Ponds (WSP)
2. Activated Sludge Process (ASP)
3. Extended Aeration Process (EAP)
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Waste Stabilisation Pond: BOD reduction flowchart



Cross-sectional view

Septic Tank- Soakpit: BOD reduction flowchart



Cross sectional view

Conclusion

- Two options for waste water Treatment i.e on-site and off-site
- In both options of treatment, sludge is generated requiring its treatment and safe disposal
- Approx. 60% households are based on on-site systems in India that need to be kept in sound condition through (takes care of 99% pollution load)
 - Periodic inspection of on-site sanitation facility by ULB/SPCB
 - maintenance by owner including of soak pits to check unhygienic condition
 - imposition of penalty to faulty systems
- FSSM is O & M of on-site sanitation system that treats only 1% pollution load and is de-sludged in once in 3 years.
- Although, it helps in optimum functioning of anaerobic digestion in Septic tanks



Thank you

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