

Introduction to DWWM

Session 2: Conventional Approaches

Module 1 Session 2

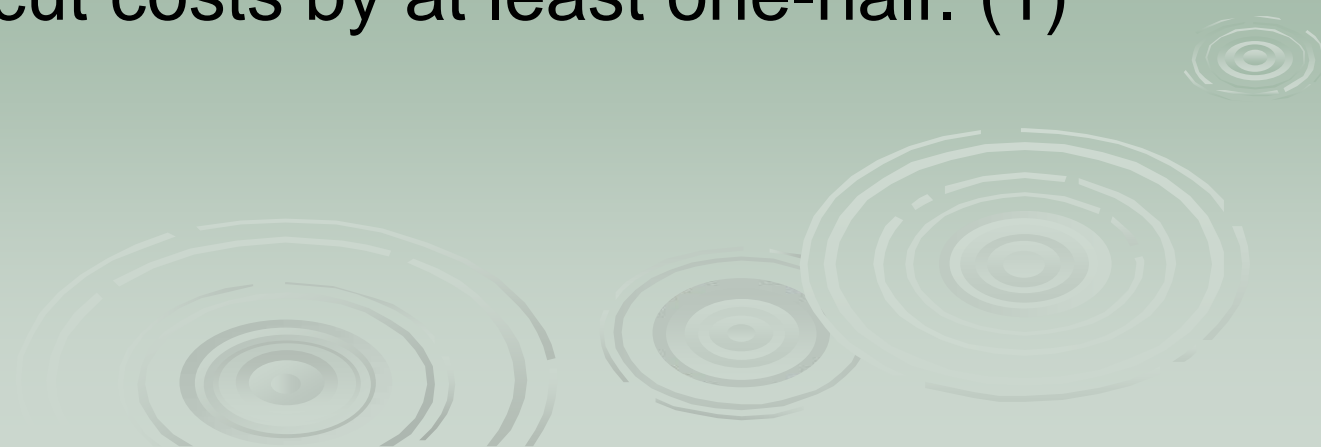


What is a conventional system ?

- **Conventional wastewater management system** collects wastewater to a common location, treats and disposes of it to local water body or water source.
- **Historical Development** – 19th Century urban development growing awareness of disease risks caused by the squalor in large cities, the focus was on piping wastes away from the population. Only later, as the discharge of raw wastes transformed rivers into foul open sewers was treatment at the end of the pipe integrated into the management system.

Comparative Costs

- Beyond dense urban areas the average household cost of conventional sewerage may range from US\$ 300 – 1000 or US\$ 0.35 – 0.50 per cubic metre.
- Too expensive for many households especially on incomes of US\$ 1 or less per day.
- Through non conventional systems it may be possible to cut costs by at least one-half. (1)



Financial Dimensions

- Requires large lumpy investment for trunk sewers and wastewater treatment.
- Additional funds required for secondary and tertiary network often not available.
- Result - areas with under used primary facilities and poor settlements / peri-urban areas no services at all.



Construction of primary trunk infrastructure in Faisalabad, Pakistan over a decade.

Institutional Issues

- One specialist organisation with skills, experience and funding designs, constructs and manages the system.
- Operation and maintenance may be assigned to municipal administration.
- Limited voice for concerns of women or poor communities.



Supply Driven

- Usually promotes city wide standardised wastewater collection and treatment solution that does not reflect:
 - Wastewater reuse practices
 - Needs of poorer communities/informal housing areas with uncertain tenure or on marginal land
 - Community demand for sanitation and wastewater treatment, disposal or reuse

Environmental Issues

- High consumption of water – disposal system uses water as a medium to carry waste.
- Often not designed around existing irrigation and reuse patterns
- Loss of nutrients and trace elements contained in excrements through treatment and discharge.
- Higher energy requirement and operation and maintenance costs.



Wastewater discharged from Phnom Penh, Cambodia and used to farm water spinach

Summary

Centralised

- One organisation responsible for wastewater in city/town
- Higher per capita costs for construction and operation and maintenance.
- Potential economies of scale.
- Focus on collection and end of pipe treatment
- Supply Driven - centrally driven disposal process.
- Often focussed on needs of middle /higher income residents.
- Uses citywide financing tools (tax raising, potential for cross subsidy)
- Private sector role limited to larger contracts or 'low level' management contracts

References

- 1. Bartone, C. (1995) An overview of urban wastewater and sanitation: Responding to growing household and community demand.

