



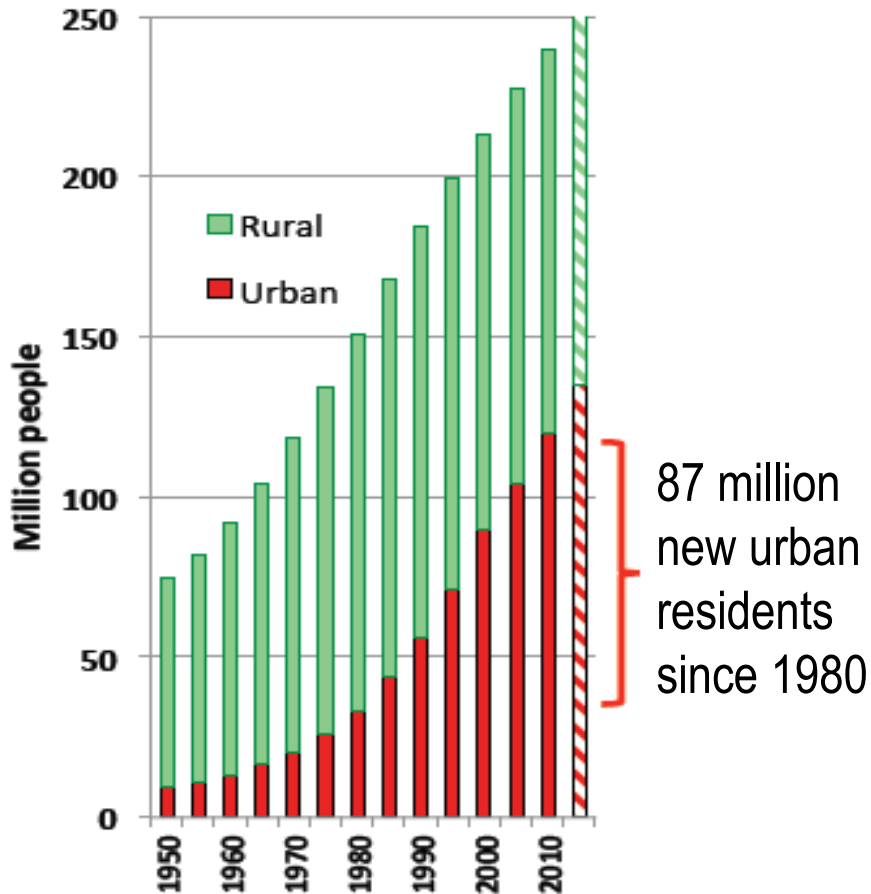
Community-Managed Decentralized Wastewater Treatment Systems in Indonesia

Findings & Lessons Learned



Kathy Eales
Nagpur, November 2012

Large, dense, rapidly growing towns and cities in Indonesia



Source: UNDESA 2012

- < 2% centralized sewers and treatment
- Pour flush to soak pits “*septik tanki*” with overflows
- 18% urban open defecation
- Severe water contamination and under 40% piped water
- Local government still maturing
- Weak water utilities

Urgent need for sanitation improvement



Community-Managed DEWATS: What Do We Mean?

**Community
Management**



**Wastewater
Treatment**

**House connections +
Simplified Sewers
and / or**



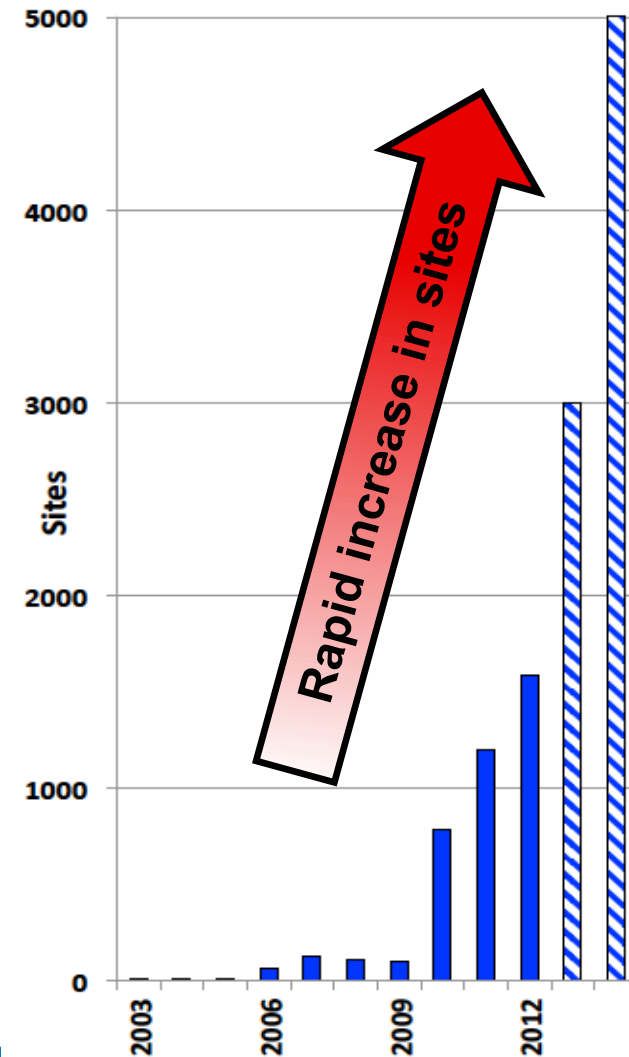
Mostly anaerobic
baffled reactors



**Community Sanitation
Centre**

Rapid scale-up of Community-Based Sanitation

- Piloted 2003-2004 in 7 locations
- Replicated by Government from 2006
 - Mainly by an NGO partnership:
 - 420 sites by 2009
- Surge from 2010 with big funding
 - part of Governments *Urban Sanitation Acceleration Program*
- **2014 Goal**: 6+ million people using DEWATS
 - 226 cities and **12 000+ sites**



Research Question: Do DEWATS Work?

Are community-managed decentralized wastewater treatment systems:

- **sustainable**
- **poor-inclusive**
- **cost-effective**

where 100% centralized sewerage and/or on-site systems are not feasible or appropriate?



Methodology

- Three data sets, over 400 sites
- 51 site visits in 7 cities
- 37 focus groups with users
- Key Informant Interviews
- Stakeholder consultation workshops

Community DEWATS Can Work Well

- **DEWATS are well liked**, *popular and kept clean*
- **Community management OK for daily operation** *but not everywhere*
- **Good quality effluent** in 80% - **for now** *but few systems desludged*
- **Fewer users** at Community Sanitation Centres than planned
 - *Poor site selection: people already had toilets*
 - *People spurred to build their own toilet*

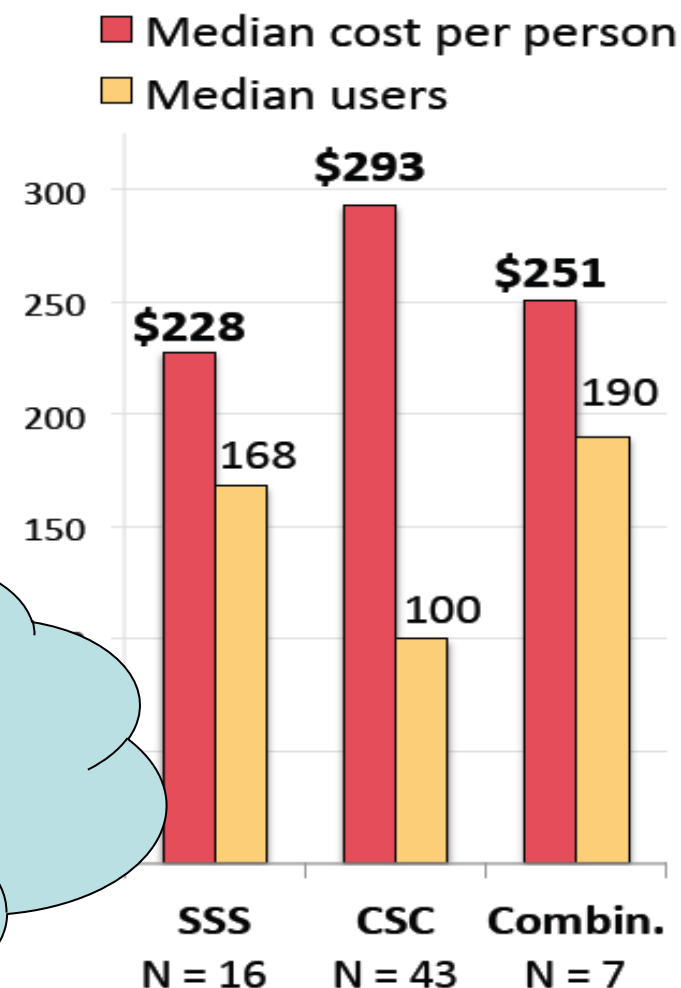


Cost effective = Needs Many Users

- **Low usage raises investment cost** per person
- **Simplified sewers and combined systems more cost-effective**

- Without support system
- **“The technical support is easy – its community dynamics and behaviour change that is hard”**

Non-technical



Median users and per capita cost for different systems

What Communities Can Manage

<p>Can</p>	<p>Clean community sanitation centre Keep simple Collect payments Routine Minor repairs Check inlets Buy supplies Manage operator</p>
<p>Maybe</p>	<p>De-scum settler Check outlets</p>
<p>Can't</p>	<p>Monitor effluent quality Desludging Do major maintenance Do post-disaster repairs</p>

Above ground facilities offer users direct benefits

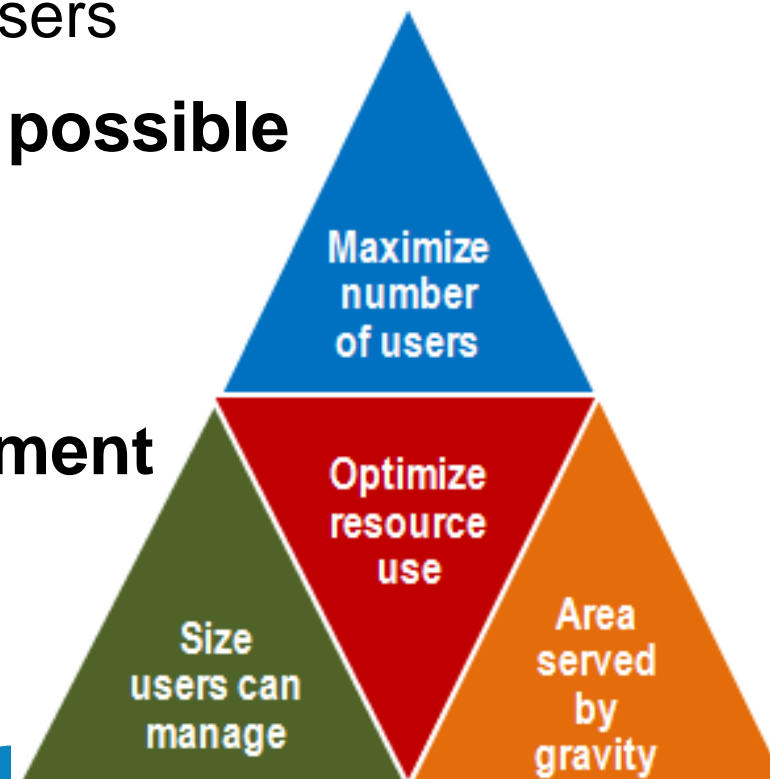
Below-ground facilities don't affect users directly



Critical Factors for Success:

Location, Size and Co-management

- **Community Sanitation Centres** work best:
 - No space *at all* for household toilets
 - Areas prone to flooding or subsidence
 - Tenants, and or many casual users
- **House connections wherever possible**
- **Optimize system size**
 - At least 100+ households
- **Co-manage with local government**
 - Desludging services, disposal
 - Major maintenance
 - Post-disaster repairs



Plan for Sanitation Services and for the entire City

- **Plan as services**
beyond 'projects'

- Monitoring
- Clear roles
- Commit resources



- **DEWATS - part of a bigger plan**

- Avoid fragmentation and support burden
- Which areas will stay decentralized?
- Which will connect to a larger sewer system?

Concluding that ...

Community managed DEWATS can be effective for serving poor communities where:

- **appropriate type** is built well in the right location
- **number of users optimized** and sustained
- **shared responsibility with Government** for operation and maintenance

as

- part of **broader sanitation** plan

and where

- the **community have the will** to make it work !

Terima Kasih

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