

# Diagnostic Tools and Guidelines for Fecal Sludge Management

Update on the current WSP FSM work

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FSM-3 Hanoi, 18 January 2015



# Objective

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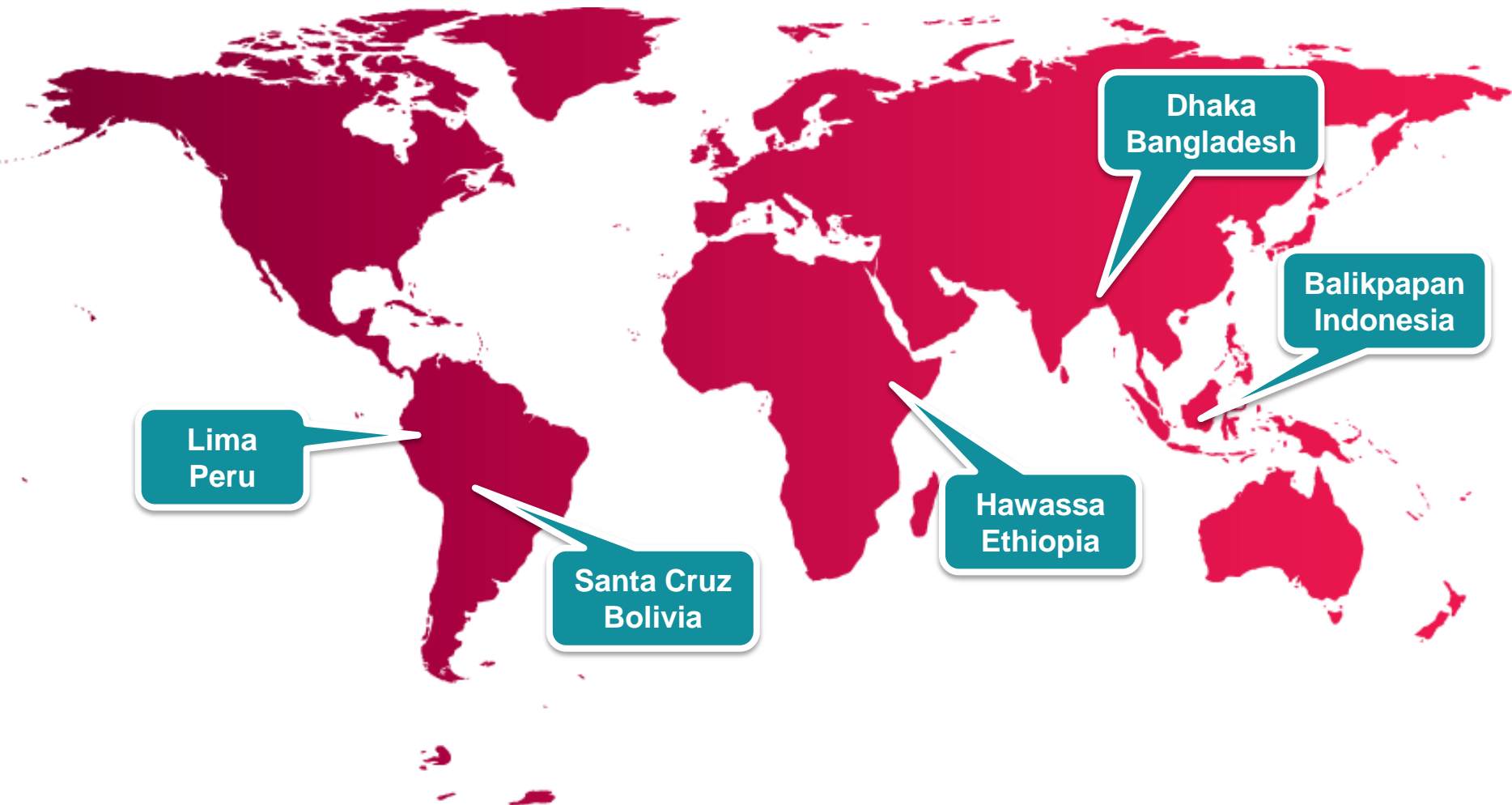
Develop a 'package' of diagnostic and decision-making tools and guidelines for the development of improved Fecal Sludge Management (FSM) services as part of urban sanitation strategies and plans.

The scope considers city-wide septage services but focuses on how to serve poor urban communities, based on collection and analysis of primary and secondary data.

# Tools and Guidelines Based on Evidence

- Applying draft tools from WSP's '12 City FSM study', Emory University and Economics of Sanitation Initiative.
- Undertaking detailed case studies in 5 cities:
  - Fieldwork complete in Balikpapan and Dhaka, analysis in progress
  - In progress in Lima and Santa Cruz
  - Starts February 2015 in Hawassa
- Linked to WB investment projects for potential downstream implementation and learning.

# Tools and Guidelines Based on Evidence



# Survey Instruments and Sampling

## Household (HH) survey

- City-wide – 30 clusters x 12 households / cluster = 360 city-wide HHs
- Slums – 30 clusters x 12 households / cluster = 360 slum HHs

## Transect walks

- Held in 10 randomly-selected city-wide clusters
- Held in all 30 slum clusters
- 30 drain and water samples for testing

## Focus Group Discussions

- Held in 10 of the slum clusters

## Key Informant Interviews

- Conducted with >20 stakeholders

## Observation of service providers

- Carried out over 5 emptying events (3 manual, 2 mechanised)
- 15 fecal sludge samples taken for testing during observations

# Some Preliminary Findings From Dhaka and Balikpapan

- Poor FSM is widespread, and not only in poor areas
- Many septic tanks and pits discharge directly to drains
- Institutional delivery frameworks absent or weak

## Dhaka

- Over 93% emptying is manual and informal
- Over 70% households discharge to drains.
- 14% poor households empty pits themselves.

## Balikpapan

- 90% satisfaction with private sector emptying but cannot reach all houses in dense areas
- Pollution risk increased where high groundwater
- 80% interest in regular desludging service

# Timeline

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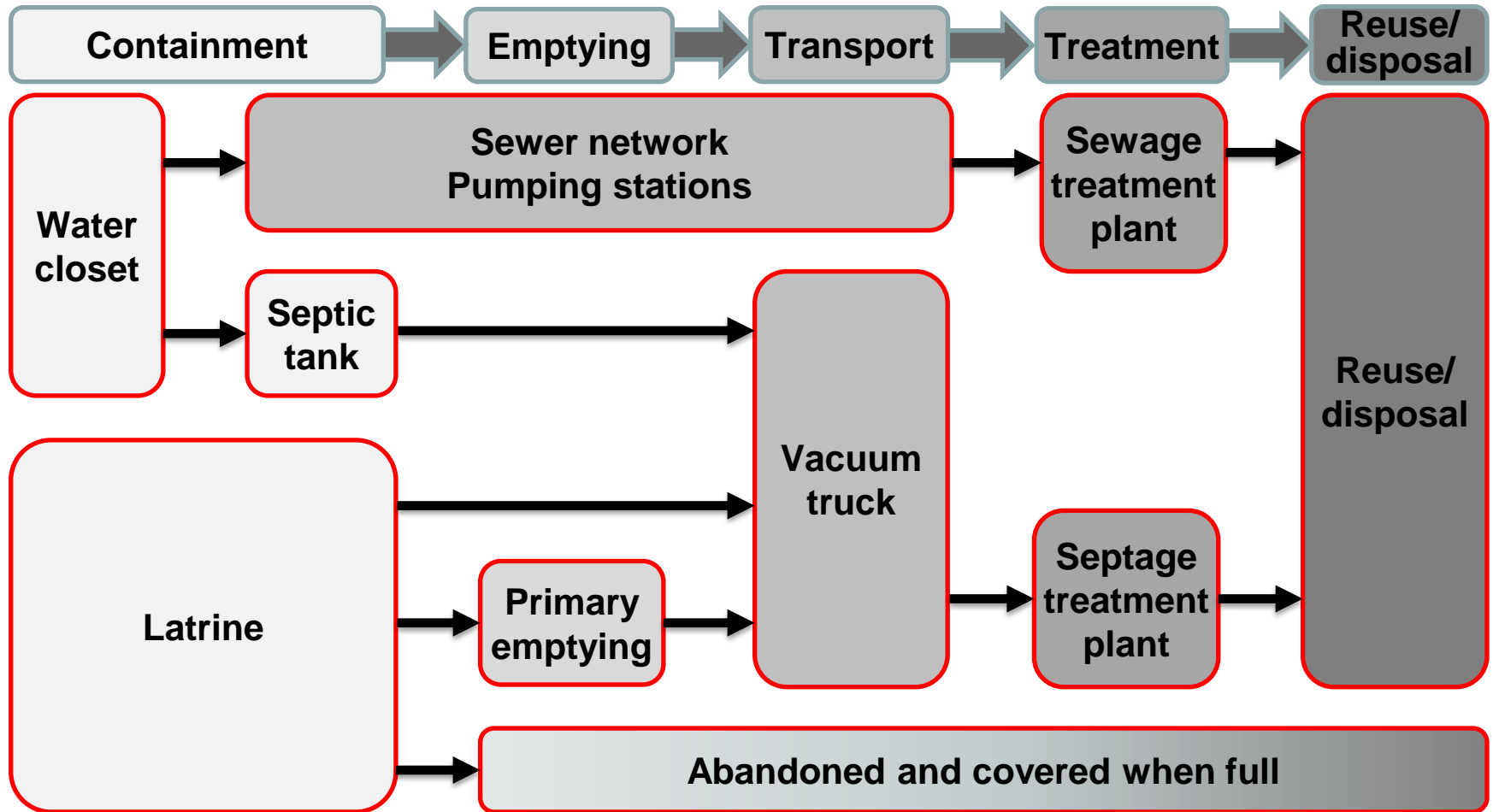
- All fieldwork and analysis complete by April 2015
- Economics tool – May 2015
- City case study reports – Aug 2015
- Draft tools & implementation guidelines – Nov 2015
- Final publications, website etc. – Feb 2016

# Learning more about what we don't know ...

- Continuum from true 'septic tanks' to the most precarious pits. How to motivate improvements?
- Small septic tanks reduce capital cost – but do they reduce BOD and capture sludge?
- High groundwater areas using wells – what are safe low cost household options?
- Few design figures available for quantity and quality of septage removed from tanks and pits
- Hygienic emptying equipment suitable for dense slums
- Simple low cost sludge treatment at scale which doesn't require large land areas
- And many more issues emerging ... new agenda?

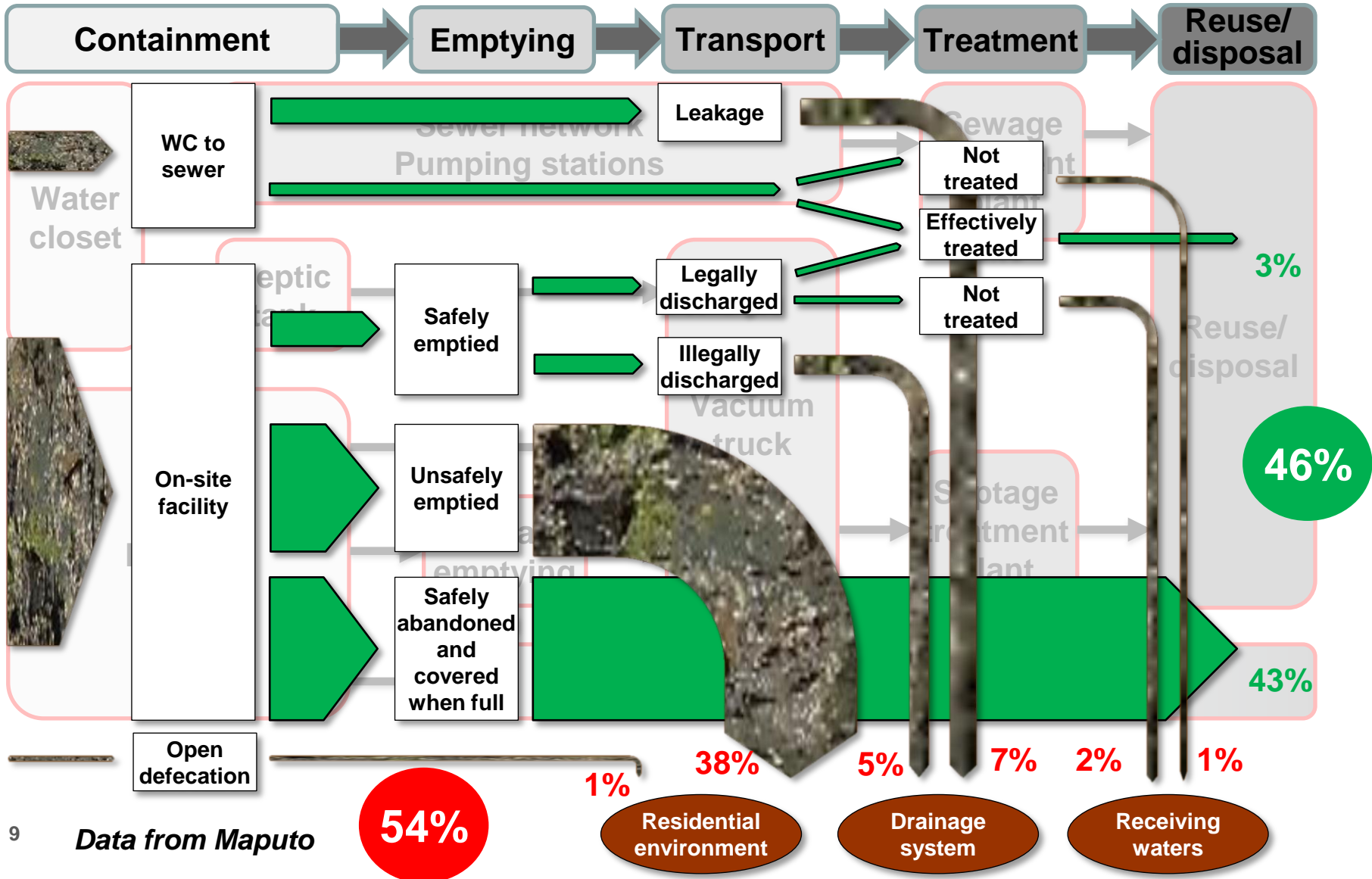


# Context for the Tools and Guidelines

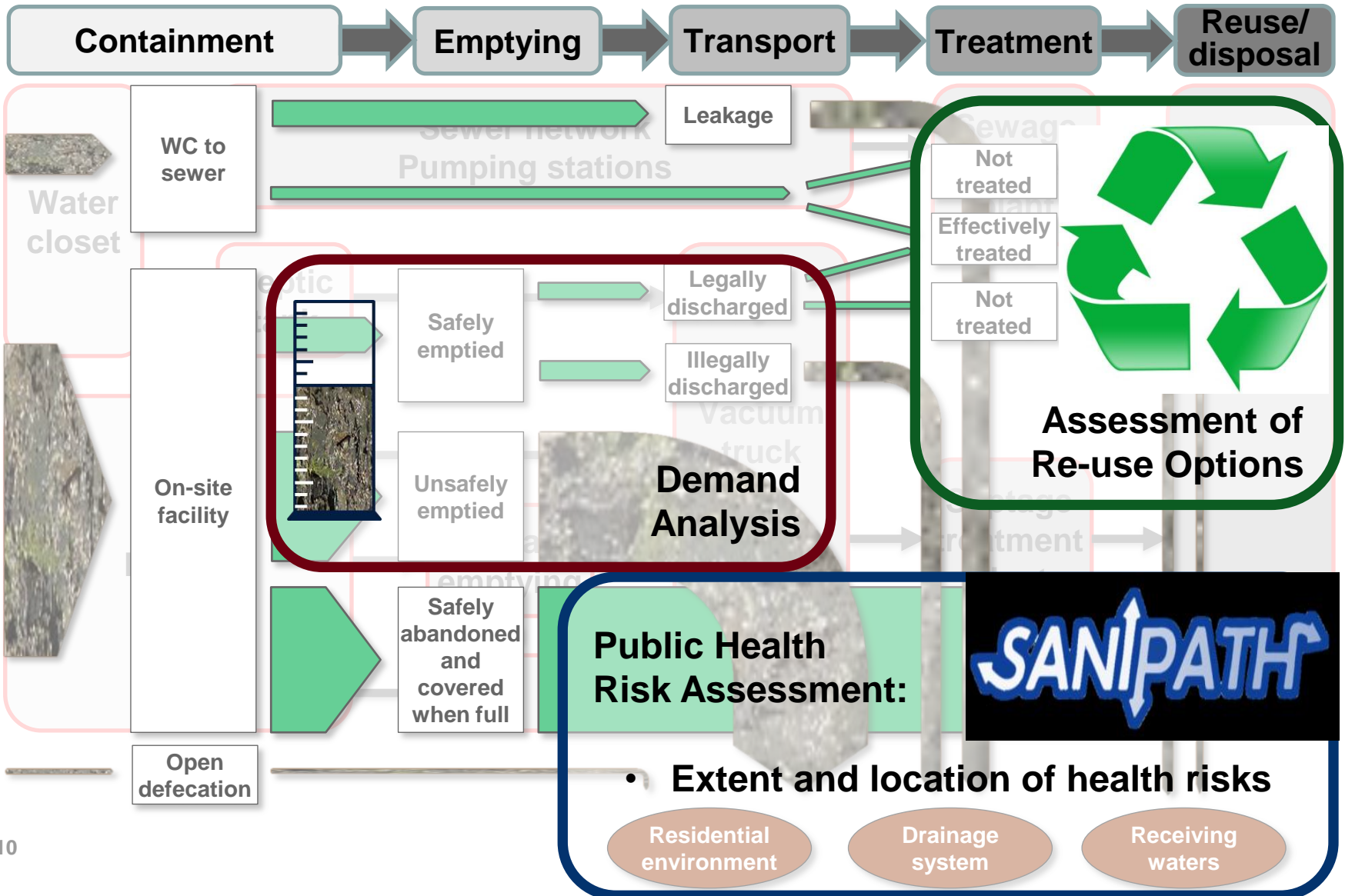


**But how does it actually work in practice?**

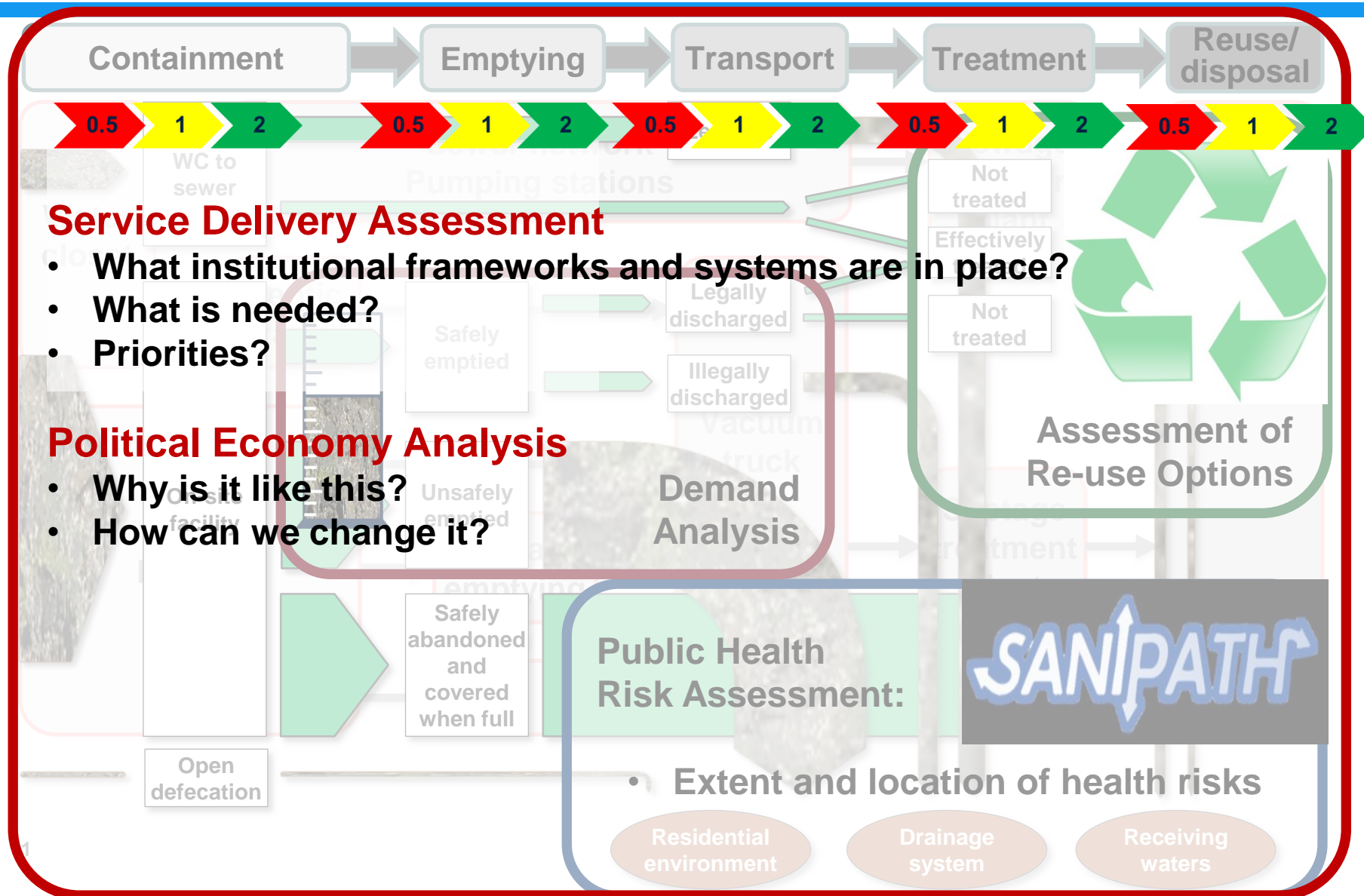
# Overview: Fecal Waste Flows – the SFD



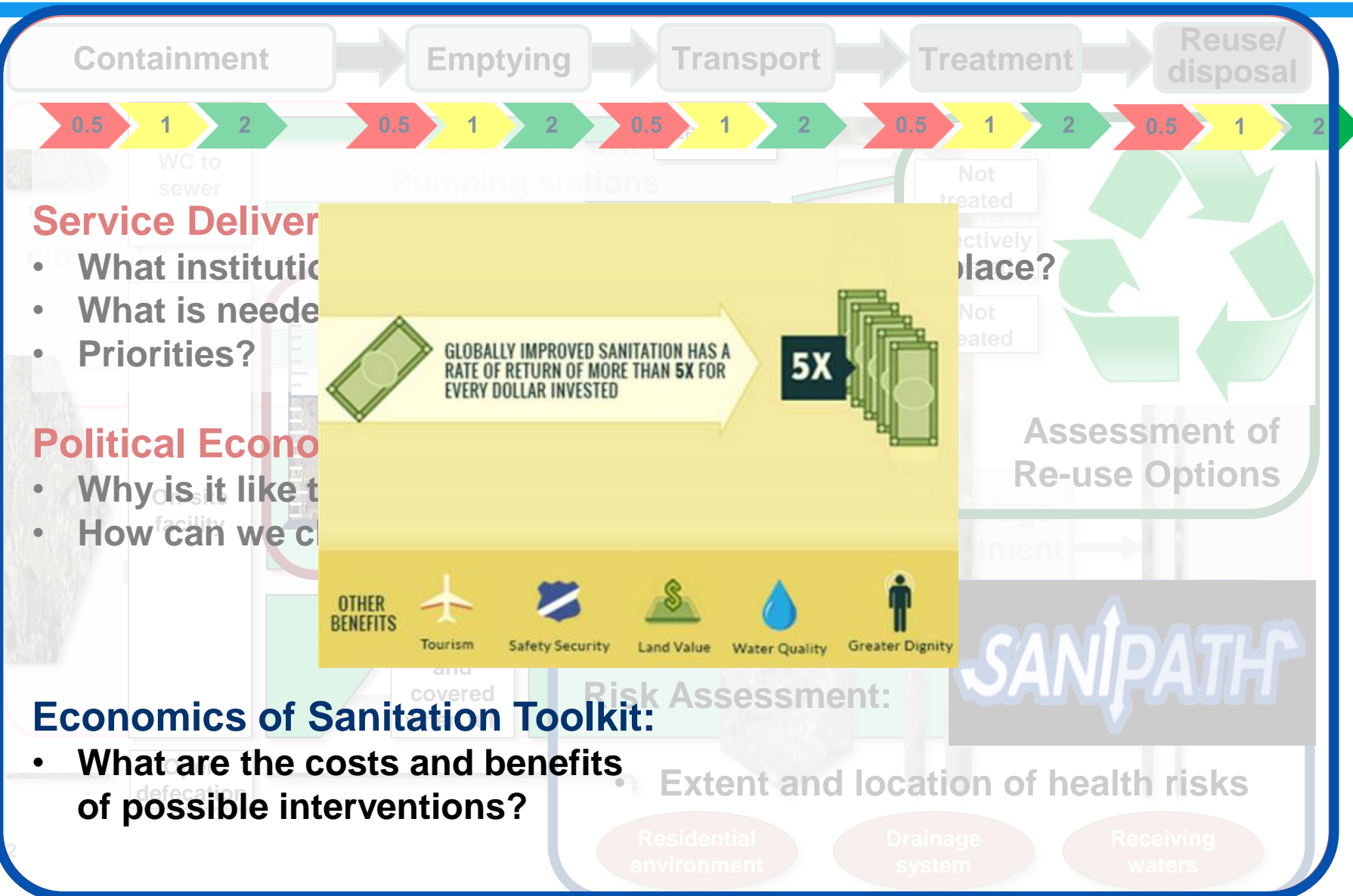
# Diagnostic and Decision-making Tools (1)



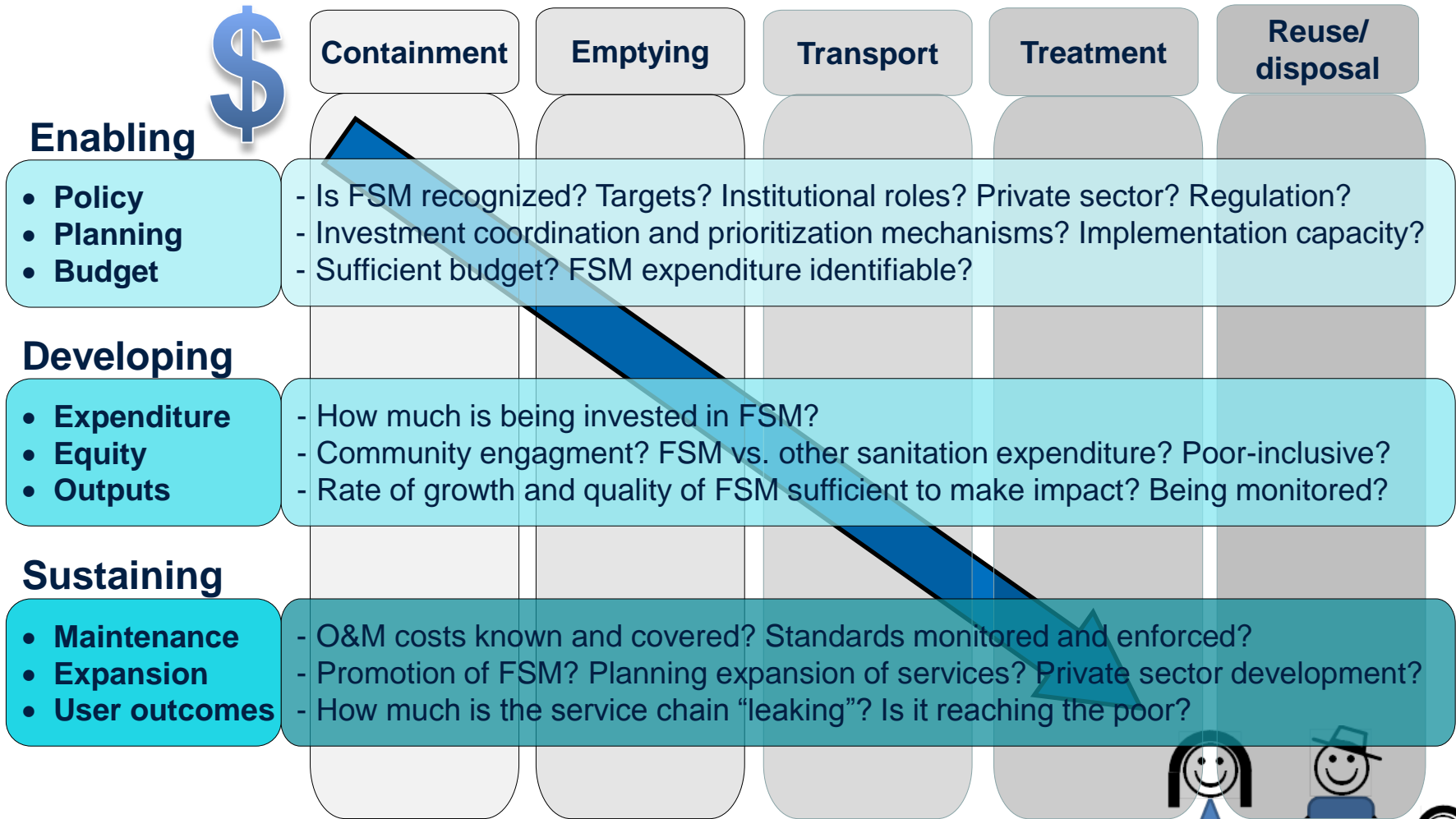
# Diagnostic and Decision-making Tools (2)



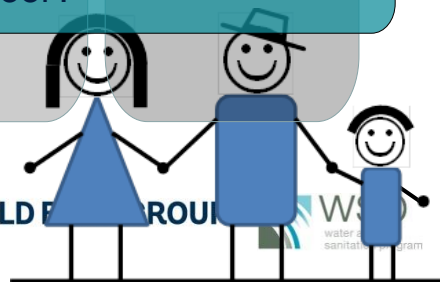
# Diagnostic and Decision-making Tools (3)



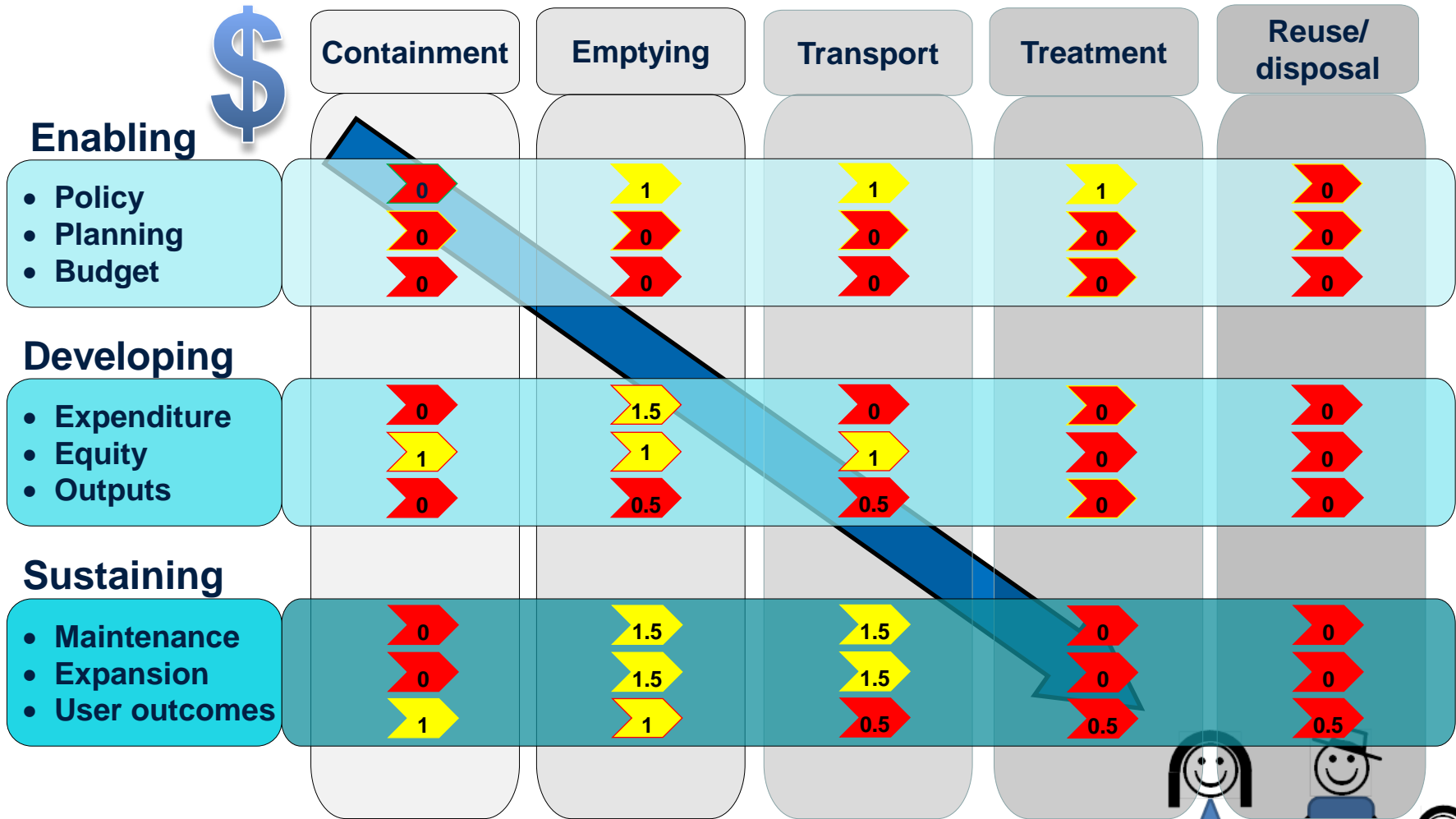
# Service Delivery Assessment Framework



Example: Balikpapan



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Example: Balikpapan



# Political Economy Analysis

## Who will be responsible for and interested in ensuring adequate FSM?

- Many stakeholders. Motivations? Coordination?
- Clarify roles and accountability relationships
- Both formal and informal processes and institutions
- Identify degrees of influence and interest
- Target key centers/individuals of influence
- Align interests for sustainability and 'win-win'
- Consider regulation, rewards, sanctions



# Expected Output

- **Diagnostic tools:**

- SFD \*
- SaniPath-FSM \*
- Sludge volume estimation
- SDA

\* *Linked to Emory University, GIZ, BMGF work.*

- **Project design inputs:**

- Political Economy Analysis
- Re-use potential and markets
- Economic analysis

- **Project implementation guidelines**

- Products for different target audiences
- Explicit consideration of political economy
- Synergy to other initiatives from BMGF, SANDEC etc



# Thank You



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