



# **The Biggest Leak in the Delivery Chain: Why We Need to Focus on Fecal Sludge Management**

Peter Hawkins, WSP

IWA Development Congress, Nairobi, October 2013



# Urban Sanitation: Some Challenges...

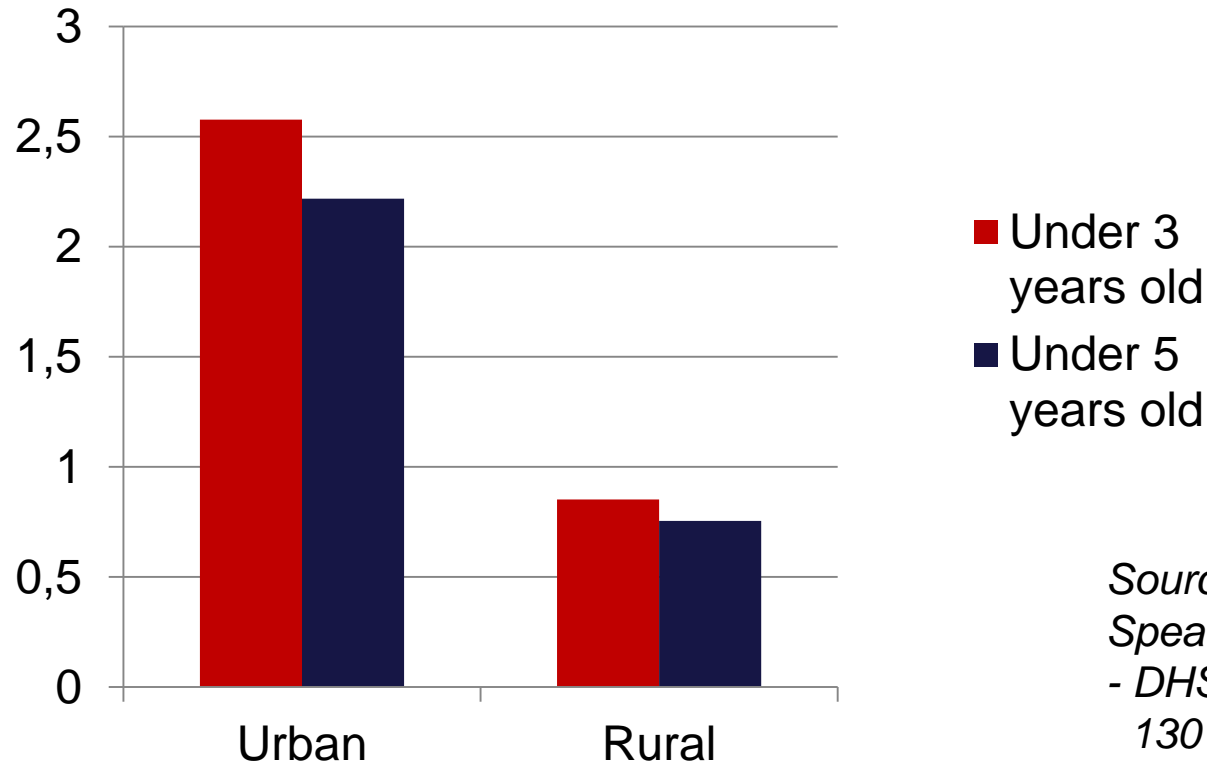


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# The Effects of High Population Density

Effect on Child Height of Eliminating Open Defecation

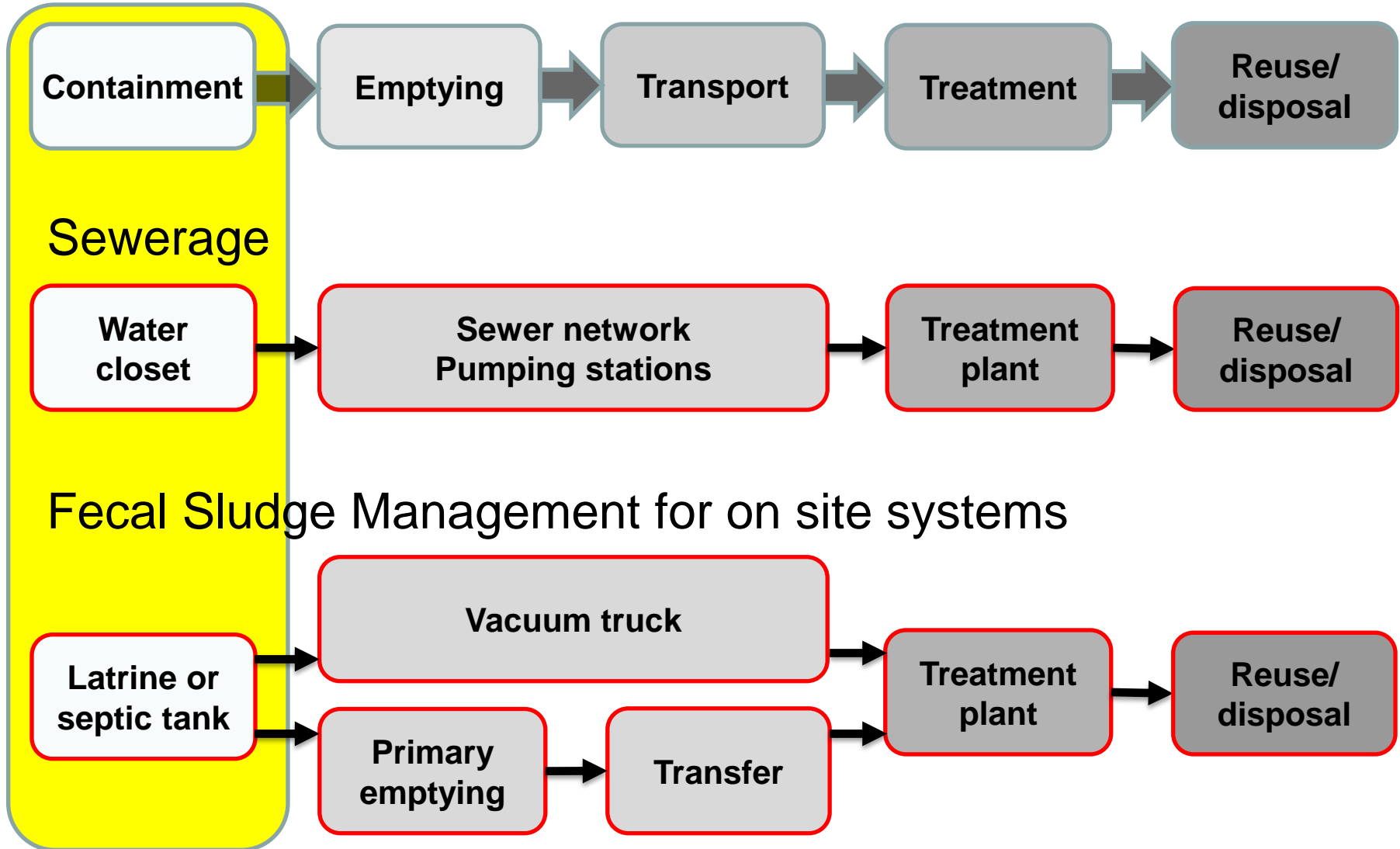


Source:  
Spears, D (2013)  
- DHS data from  
130 countries

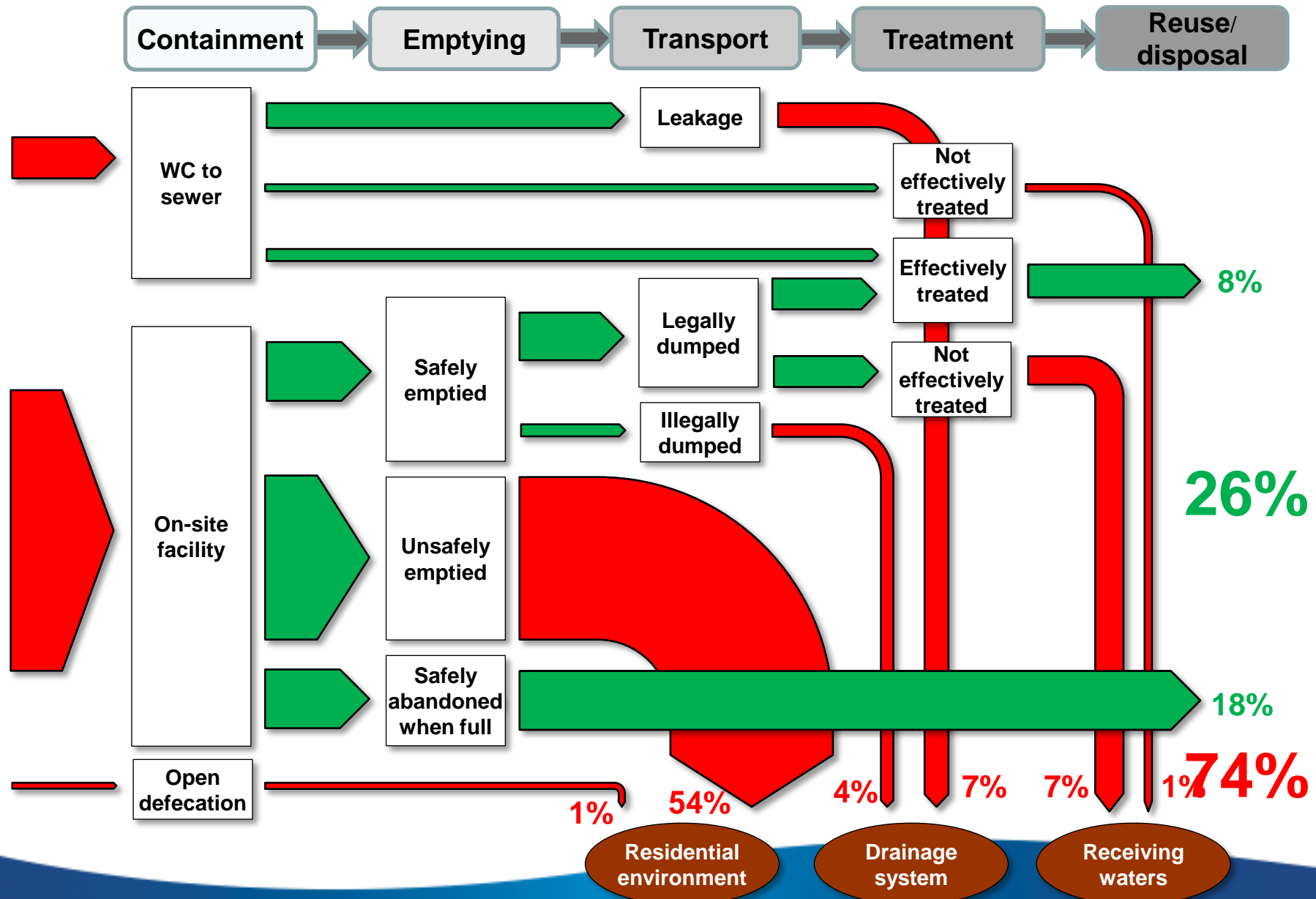
**High population density increases intensity of exposure to pollution created by others**

# The Sanitation Service Chain

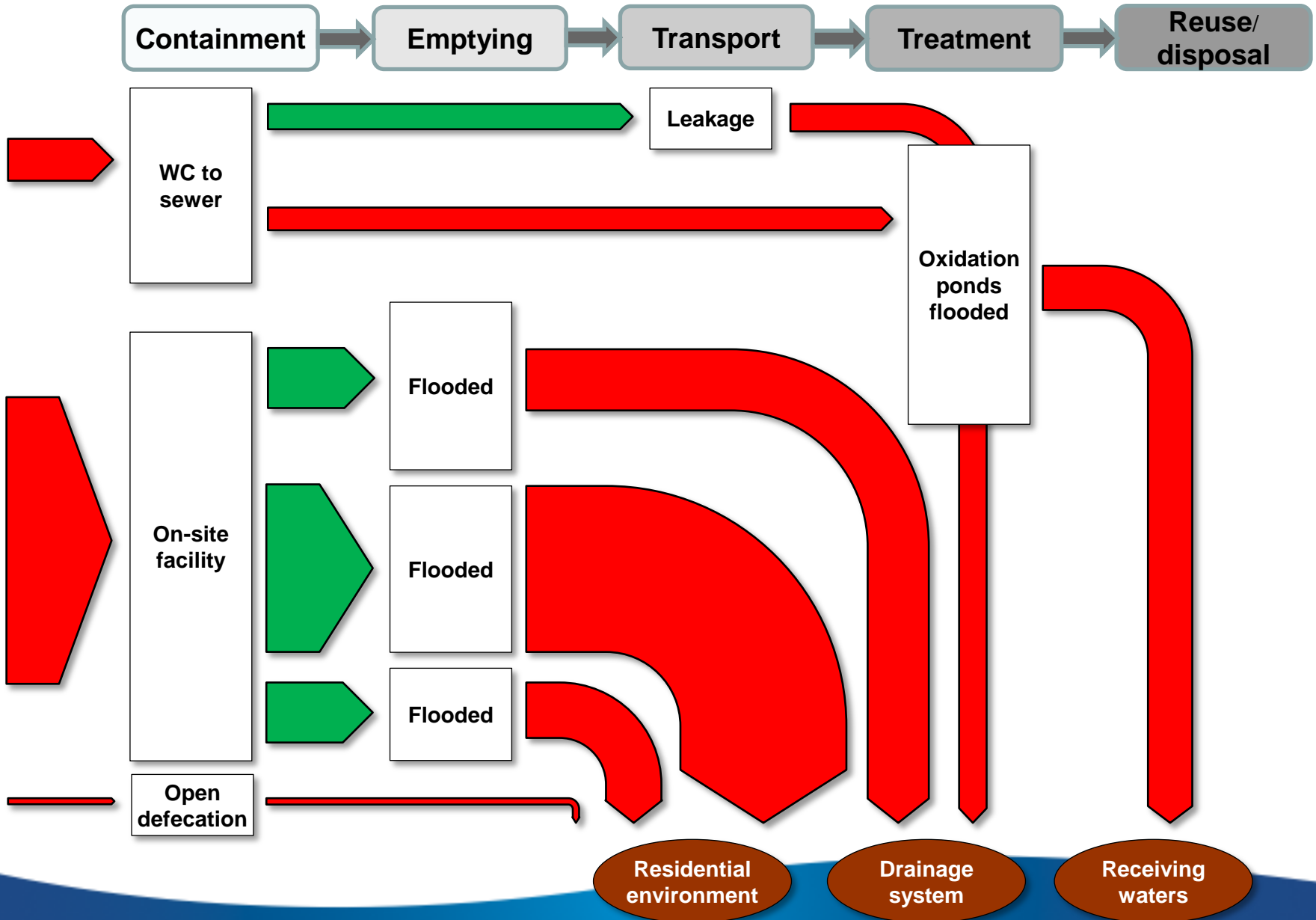
## MDGs



# Fecal Waste Flows – Estimated for Maputo



# Fecal Waste Flows – Effect of Flooding



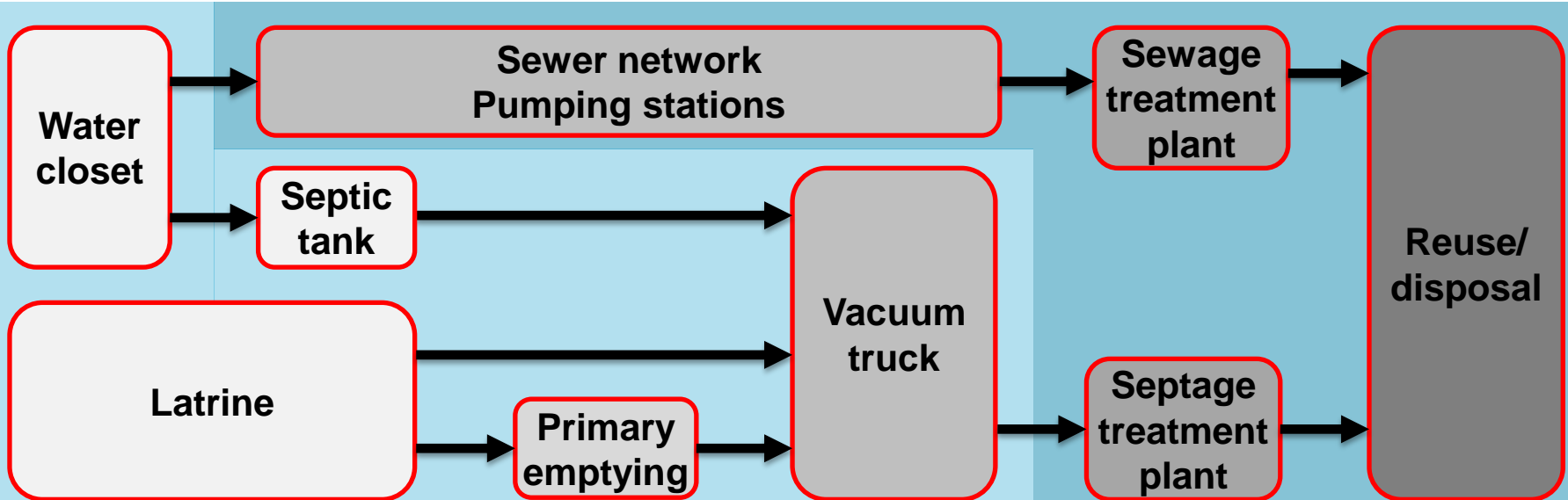
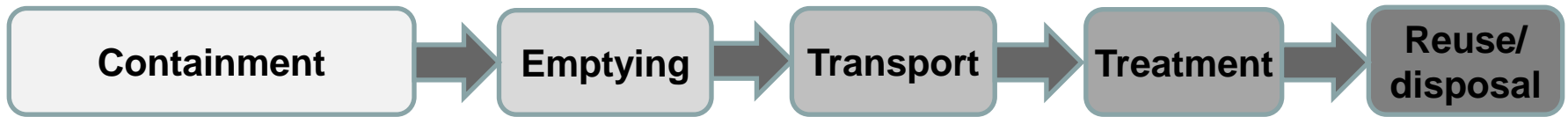
# Complementary Services



Sanitation only works well alongside effective

- ❖ Drainage
- ❖ Solid waste management
- ❖ Urban planning

# Urban Sanitation is About Services



- Materials supply
- Construction
- Public toilets
- Desludging

## Customer Services

- Sludge treatment
- Sewerage O&M
- Drainage maintenance
- Solid waste management

## Public Services

## Infrastructure Development

*backed by*



# How to Manage the Service Chain?

## National Enabling Environment

- Policy and prioritization of poor-inclusive urban services

## Local Governance

- Planning and coordination
- Legislation and enforcement

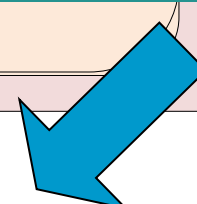
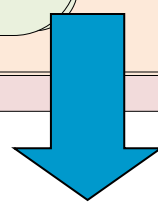
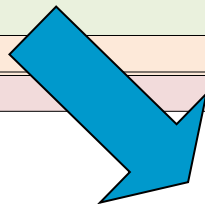
## Community Consultation

- Planning, setting service levels
- Sanitation for rented housing

**Customer Services**

**Public Services**

**Infrastructure Dev't**



**Sustained Poor-inclusive  
Urban Sanitation Services**

# Some Key Drivers of Poor-inclusive Urban Sanitation Services

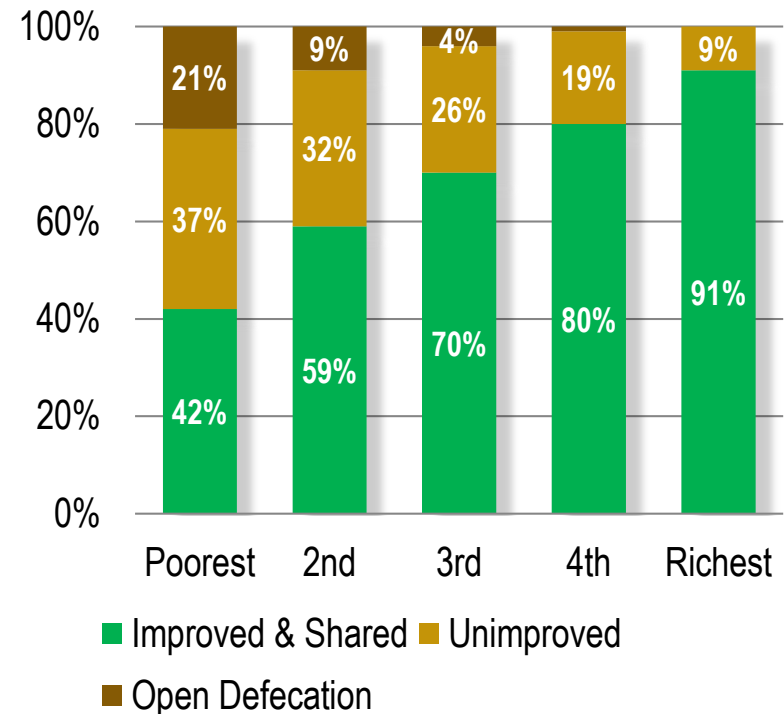


- ❖ **Policy – mainstreaming sanitation into governance**
  - Mobilize champions with evidence-based advocacy
  - Clear role definitions, accountability mechanisms and incentives
- ❖ **Financing mechanisms**
  - Affordable user fees
  - Market and private sector finance
  - Public sector fiscal mechanisms and subsidies
  - IFIs/development partners (infrastructure focus)
- ❖ **Institutional setup – financial and technical capacity**
  - Local government – coordinating role
  - Service provision by private sector, utilities...
- ❖ **Regulation, monitoring and technical norms**
  - Flexibility over space and time
  - Environmental legislation
  - Naming and shaming
  - User feedback

# Why Fecal Sludge Management is Important

- ❖ **Most urban sanitation access is via on-site systems:** <10% of urban Africa has sewer access
- ❖ **Virtually all poor people use on-site sanitation** or have no access to improved sanitation
- ❖ **Most urban on-site sanitation is not linked to a transport and treatment system,** resulting in gross contamination of the environment.

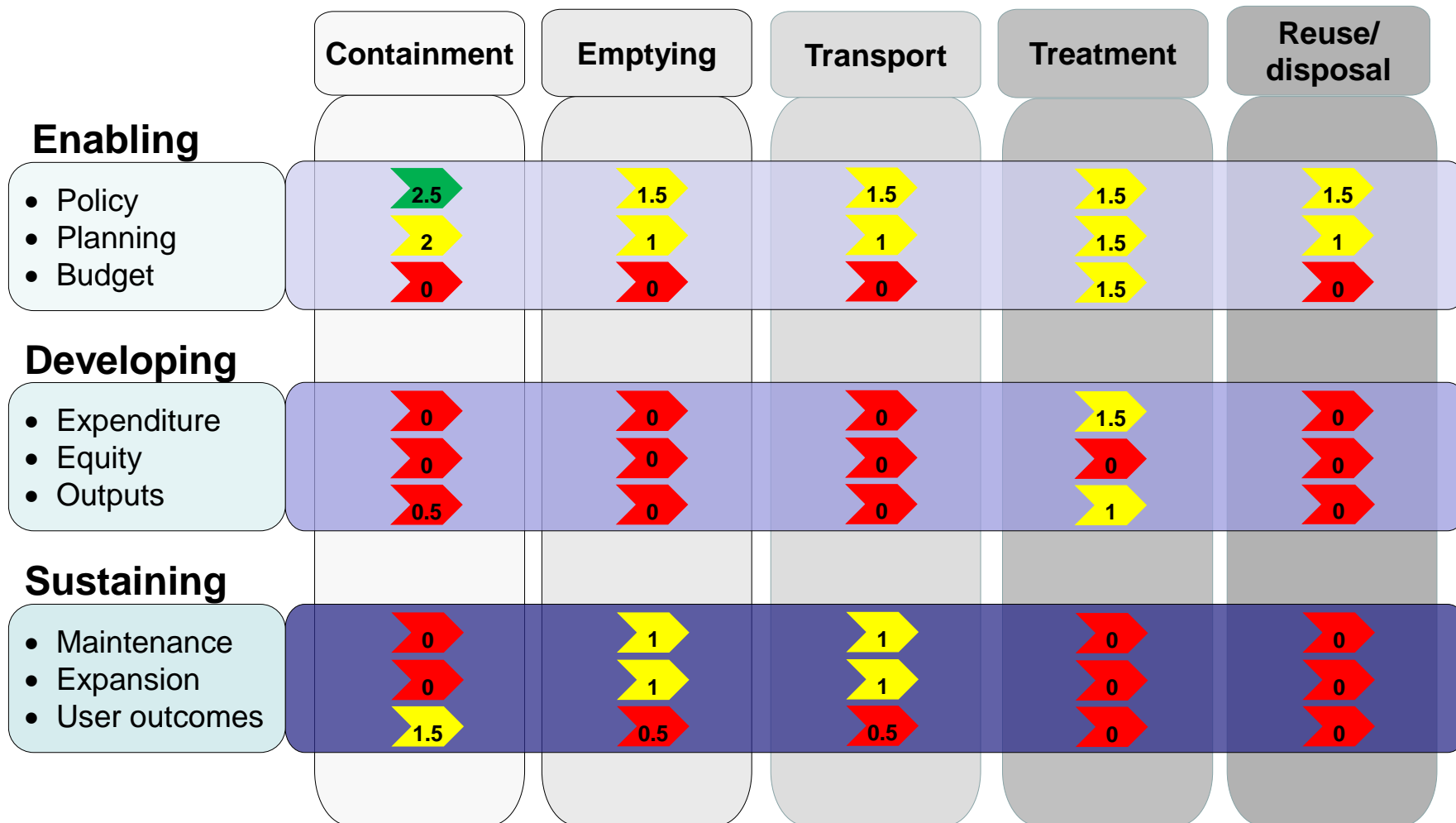
Urban Sanitation in Sub-Saharan Africa by Wealth Quintile



# FSM in 12 Cities

Country	City	Population (millions)	% Access to		
			sewer	on-site	OD
<b>Latin America</b>					
<b>Bolivia</b>	Santa Cruz	1.7	40%	<b>52%</b>	8%
<b>Honduras</b>	Tegucigalpa	1.3	81%	<b>16%</b>	3%
<b>Nicaragua</b>	Managua	2.0	40%	<b>52%</b>	8%
<b>Africa</b>					
<b>Mozambique</b>	Maputo	1.9	10%	<b>89%</b>	1%
<b>Senegal</b>	Dakar	2.7	25%	<b>73%</b>	2%
<b>Uganda</b>	Kampala	1.5	9%	<b>90%</b>	1%
<b>South Asia</b>					
<b>Bangladesh</b>	Dhaka	16.0	20%	<b>79%</b>	1%
<b>India</b>	Delhi	16.3	75%	<b>24%</b>	1%
<b>East Asia</b>					
<b>Cambodia</b>	Phnom Penh	1.6	25%	<b>72%</b>	3%
<b>Indonesia</b>	Palu	0.4	-	<b>91%</b>	9%
<b>Philippines</b>	Dumaguete	0.1	-	<b>97%</b>	3%
<b>Philippines</b>	Manila	15.3	9%	<b>88%</b>	3%

# Service Delivery Assessment



Example: Kampala

# Key Findings

## **FSM is 'invisible' to policy-makers**

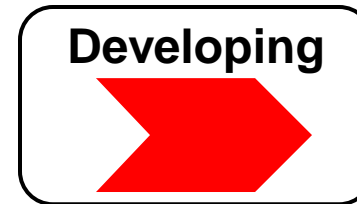
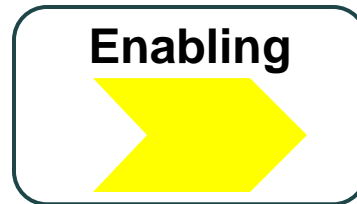
- ❖ Sewerage widely regarded as 'proper' solution
- ❖ FSM seen as stop-gap solution for slums and left to informal and private service providers
- ❖ Very little information available

## **FSM is generally poor**

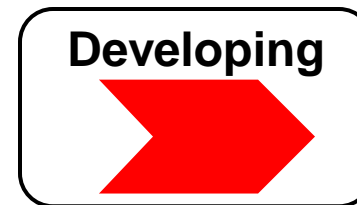
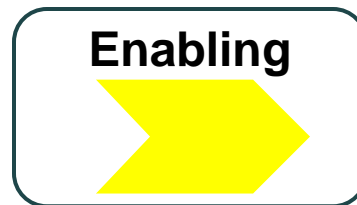
- ❖ Many toilets hard to empty
- ❖ Widespread manual emptying
- ❖ Unregulated vacuum tankers, illegal dumping
- ❖ Treatment facilities generally lacking

# Typology of cities

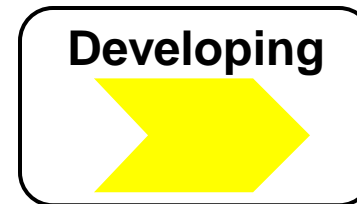
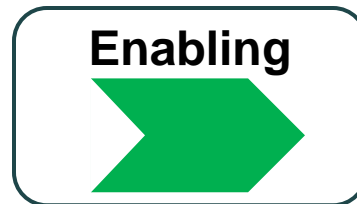
Type 1  
**Poor FSM**  
e.g. Delhi, Dhaka



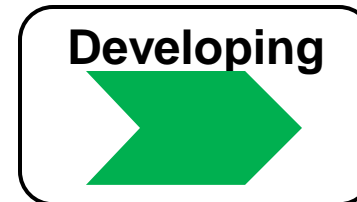
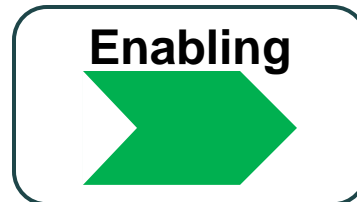
Type 2  
**Basic FSM**  
e.g. Kampala



Type 3  
**Partial FSM**  
e.g. Dumaguete,  
Palu, Dakar



Comparator:  
**Managed FSM**  
e.g. Malaysian cities



# Type 1: Poor FSM

No framework, almost no services

→ **Critical interventions for immediate impact**

## Enabling

- Undertake diagnostic studies
- Review sanitation policy, include FSM
- Develop plans (services, finance, institutions)

## Developing

- Consult with communities on needs, aspirations
- Promote private sector emptying services
- Control dumping

## Sustaining

- Stimulate customer demand and willingness to pay for improved FSM services



# Type 2: Basic FSM

Some framework, some services

→ **Strengthen framework and services**

## Enabling

- Build public sector capacity to oversee FSM
- Establish norms and standards for FSM
- Introduce regulation of service providers

## Developing

- Strengthen FSM service providers (business development, finance)
- Build and/or rehabilitate FS treatment capacity

## Sustaining

- Institute monitoring mechanisms
- Establish incentives to use treatment facilities
- Develop funding streams for public sector

# Type 3: Partial FSM

Framework in place, services exist

→ **Consolidate, regulate and develop re-use**

## Enabling

- Develop institutional and regulatory framework to stimulate re-use markets
- Introduce penalties for indiscriminate dumping

## Developing

- Develop business models for re-use
- Strengthen monitoring and disseminate information to customers

## Sustaining

- Finance for improved re-use and disposal
- Introduce specific pro-poor financial arrangements



**Thank you for**



**your attention**

