Faecal Sludge Management in Urban and Peri-urban Areas of LMICs
Challenges and sustainable solutions

Elisa Roma, PhD

Elisa.roma@lshtm.ac.uk

London School of Hygiene and Tropical Medicine

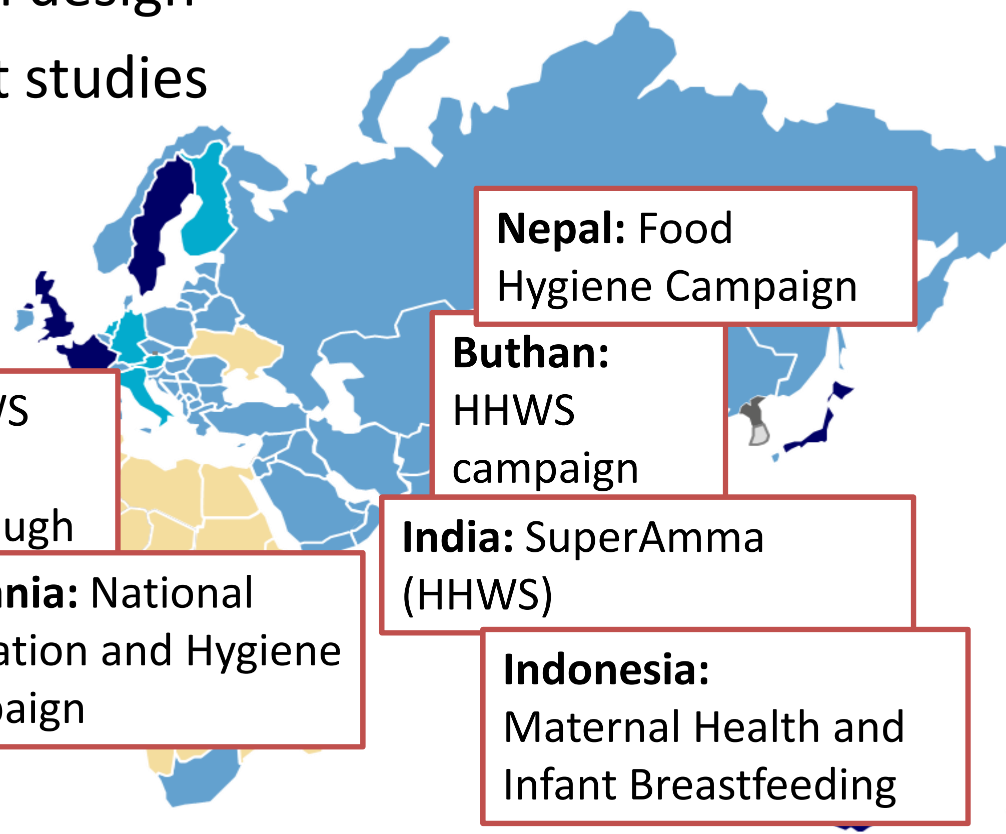
About us

LSHTM

University of the Year 2016 Europe's leading school of global health + tropical medicine

Environmental Health Group

- Behaviour change intervention design
- Evaluation- process and impact studies
- Operational research



Haiti: Handwashing with Soap +CWSS

Nigeria: HWWS Campaign delivered through CLTS

Tanzania: National Sanitation and Hygiene Campaign

Nepal: Food Hygiene Campaign

Buthan: HHWS campaign

India: SuperAmma (HHWS)

Indonesia: Maternal Health and Infant Breastfeeding

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Our focus: Tanzania

Population growth:

75 mil by 2030, with 5% in urban areas

High sanitation coverage but with unimproved facilities, such as traditional pit latrines (75%)

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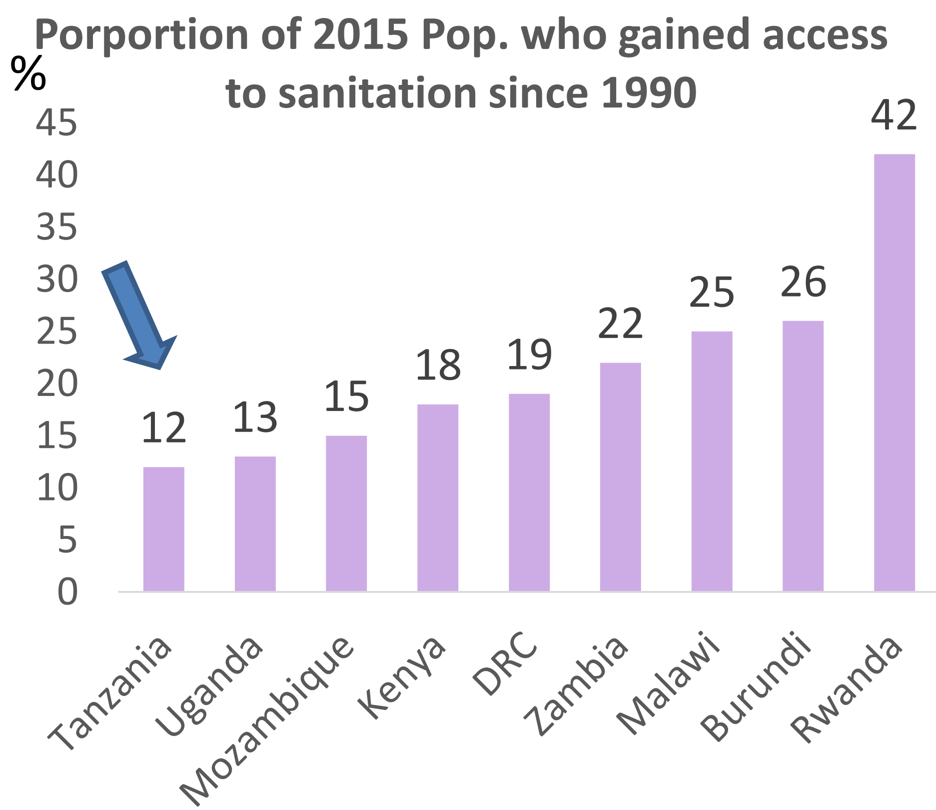
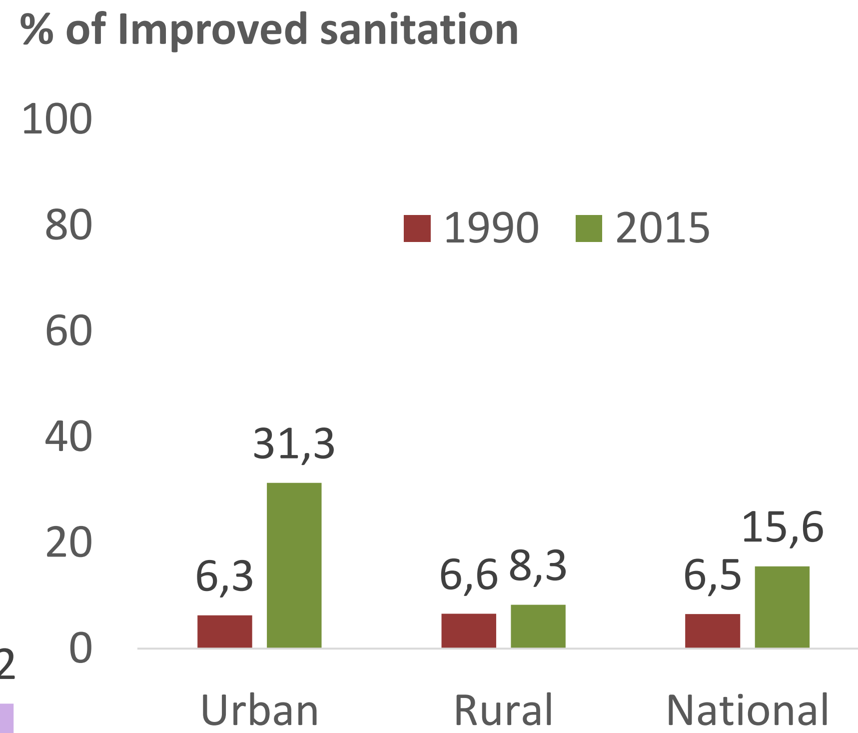
What progress has been made?

Tanzania vs Neighbours





FSM4

Our Mission

Design the Phase II National Sanitation and Hygiene Behaviour Change Campaign

Regions	32
LGAs	176
Cities and towns	148
Villages	15,000
Population	49 mil

The Campaign

Mass media campaign

Channels: TV, radio, social media

District **below-the-line activities**

Routine contact with health systems

Direct consumer contact events (rolling schedule)

Market Penetration by Private Sector

Support the market and improve the chain for new/existing sanitation and hygiene products

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How?

- ✓ Engage FSM innovators/ventures/private suppliers who meet agreed criteria
- ✓ Support offerings through assistance (research, trials, distribution set up); i.e. Behaviour change
- ✓ Help to build capacity and incentives for good regulation

Which are the candidate innovations to trial/test/scale in Tanzania?

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Objectives of this study

1. Inventory of existing innovations for FSM in LMICs*.
2. Identify key criteria for assessing WASH innovators which can be adopted in Tanzania.

Methods

- Non systematic desk review/published and grey literature in English
- Ventures identified grouped throughout FSM chain

Venture	FSM chain component addressed							Finance
	User interface	Containment	Emptying	Transport	Treatment	Disposal	Reuse	
	✓	✓	✓	✓	✓			

Results

- Increased R&D in FSM components in the past decades:
- 49 WASH innovation ventures identified:
  - 4 operate at prototype level
  - 29 operate at pilot project stage
  - 16 beyond pilot stage (Scale?)

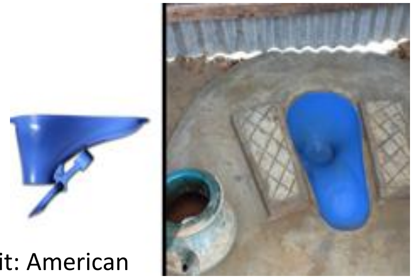
Results

Business model*	Partners	Ministry of Agriculture, IADB, Ministry of Water
	Customers	Household with ~8 people; 50 USD monthly income
	Marketing	Dedicated SOIL marketing staff-community event, door to door
	Activities	Cash payment for toilet rental and waste collected by SOIL Transport of waste to plant.
	Financing	n/a
	Cost structure	Toilet construction with local material 50 USD without shelter and 175-400 USD with shelters. 3/4 USD a month for toilet and servicing rental
	Revenues	International grants and private donations; Sales of compost

*Adapted from Johnson et al. 2007 as in Messmer & Gebauer, 2013

Benefits/Innovation	Toilet can be installed anywhere/rocky soil, high water table
Bottlenecks	Appropriate use is necessary for best results
Contact/link	https://www.oursoil.org/

Results: Innovation



Credit: American standard

User interface upgrading/modular components

Ex. Lixil, Envirosan, Sanitation Solutions/Duraplats, Sulabh, Watershed

Credit: Banza toilet

On-site treatment toilet technologies (dry)- Container based

Banza, Loowatt , Clean Team, X-Runner, SOIL, Sanergy, eKutir, Earth Auguer, Ecoloo, Mosan Mobile, Sanivation

Credit: Bear Valley Ventures

On-site treatment technologies (wet)-with/without interface

Bear Valley Venture, GSAP Microflush Toilet, Biofilm toilet, Paul Clean Tech,Phree Loo BORDA Dewats, Cava Constructions Ltd

Waste management services

The Bio cycle, Jekora compost, Mosan Mobile Sanitation, Pivot , Sulabh, Waste2energy, Slamson, Sanergy

Credit: Sanergy

Results: Financial products

Households subscription to periodic waste collection by ad hoc staff	✓ Banza ltd, Clean Team, X-Runner, SOIL, Sanergy
Provision of financial products to facilitate consumers choice	✓ Loans to consumers (E-Kutir Svadha, Gramalaya, GSAP) ✓ Incentives/rewards (Thrive Health) ✓ Insurance (E-Kutir Svadha); ✓ Customer payment Facilitation (X-runner)
Franchising local entrepreneurs and sales agents	✓ Marketing training and capacity building (WaterShed; Sanergy, IDE Sanmark) ✓ Market entry facilitation (E-kuthir Svadah, PSMBV) or initial material purchase in bulk (e.g. Sanishop)
Direct sale of by-products from waste treatment	✓ Biogas (Waste2energy, Sulabh, the Biocycle, Loowatt) ✓ Charcoal (e.g. Slamson Ghana Ltd, Pivot) ✓ Compost (SOIL, X-runner etc)

Challenges: Unknown

Technological Suitability	Development stage? Bundles (product/services) for customer segments? Customer needs satisfied? BOP the poorest of the poor addressed?
Demand Generation	Reaching customer segments? Which Behaviour change target? Proven demand for the product/service offering? Product range to address different aspirations?
Financial Viability	Supported by external funds or is it self-funded? Sustainability of the funding provided? beyond start-up funds? Presence of economy of scale make the product scalable?
Enabling Environment	Offer depending on complex enabling environment? Is there government buy-in? Conducive regulatory and legislative environment?

Next Steps

- Further refine assessment of our tool to support decision.
- Key informant interviews with innovators/suppliers/ventures.
- Discuss potential collaborations in Tanzania.

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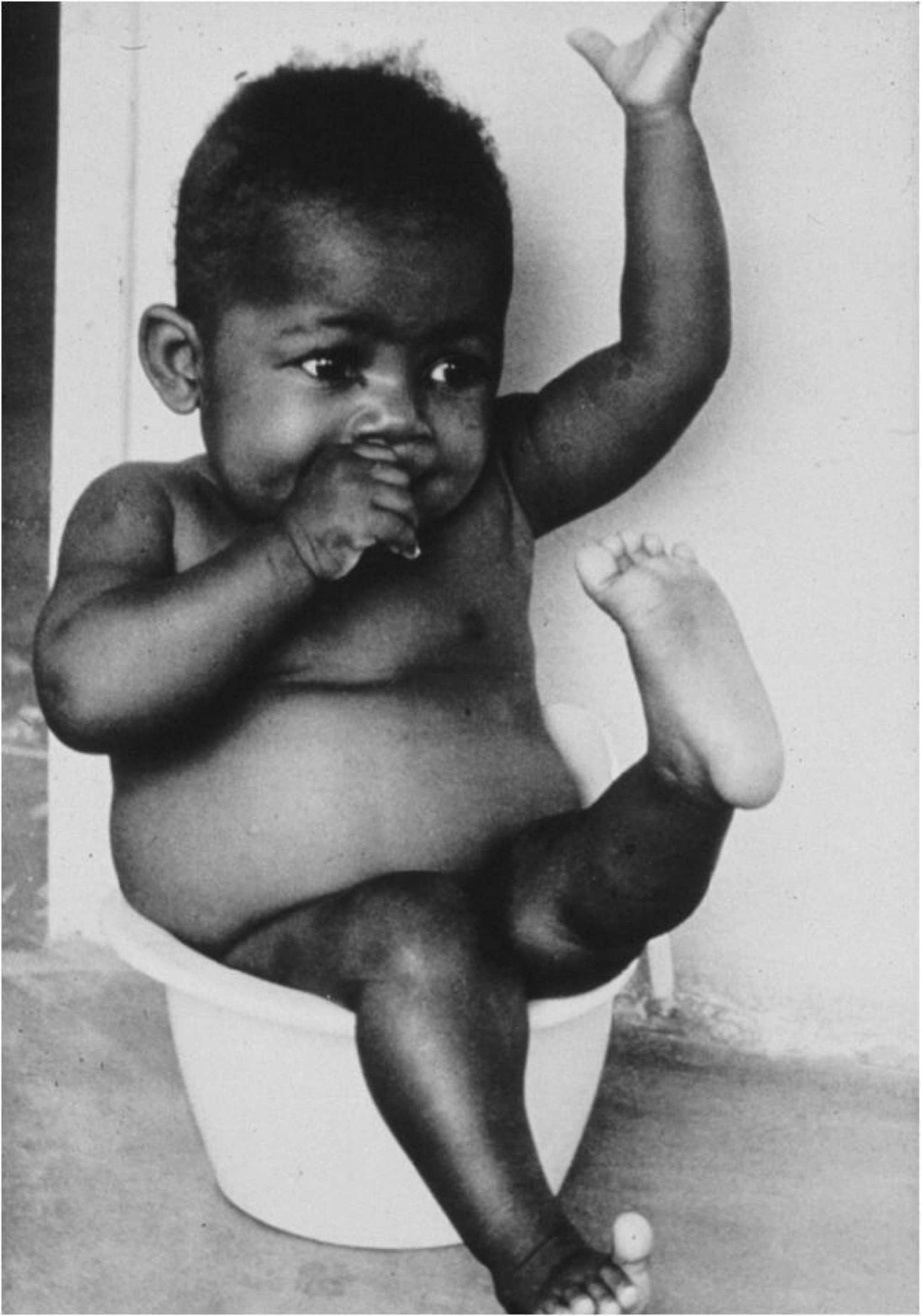

Thank you

Questions?

Elisa.roma@lshtm.ac.uk

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