Resource Value Mapping:

Estimating the Potential for Resource Recovery from Productive Sanitation in Urban Areas

SFD exchange meeting

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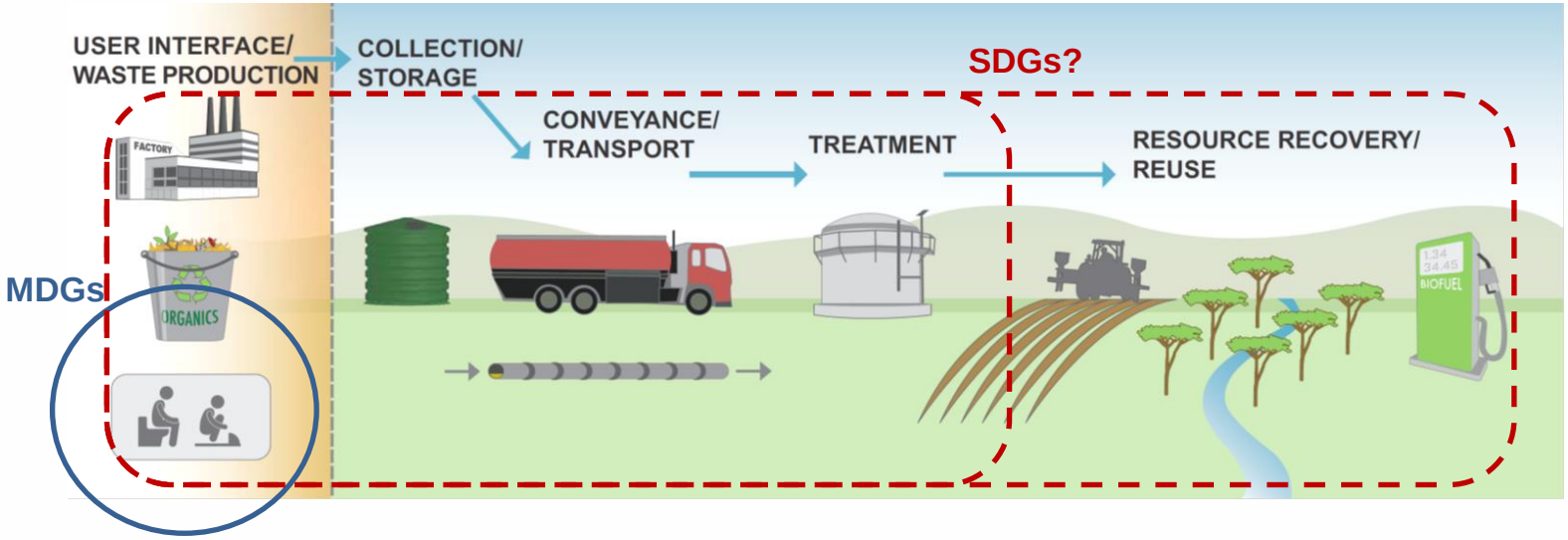
MDG to SDG

(Millennium Development Goals to Sustainable Development Goals)

*6.3 by **2030**, **improve water quality** by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, **halving the proportion of untreated wastewater, and increasing recycling and safe reuse globally***



Urban challenges:

Urban sanitation gap

- 700 million people lack improved sanitation access globally, of which 80 million is practicing open defecation

Cities are major resource consumers:

- 75-80% of natural resources
- 80% of supplied energy
- 50% of waste emissions
- and, 75% of GHG-emissions

And, pressure on resources is growing further:

- urban population in developing countries is expected to double by 2030, based on 2000 level
  (2000-2015 it raised from 2.83 to 3.9 billions)
- Global water demand that is estimated to increase with 55% by 2050.
- Climate change impacts, e.g. doughts and floods

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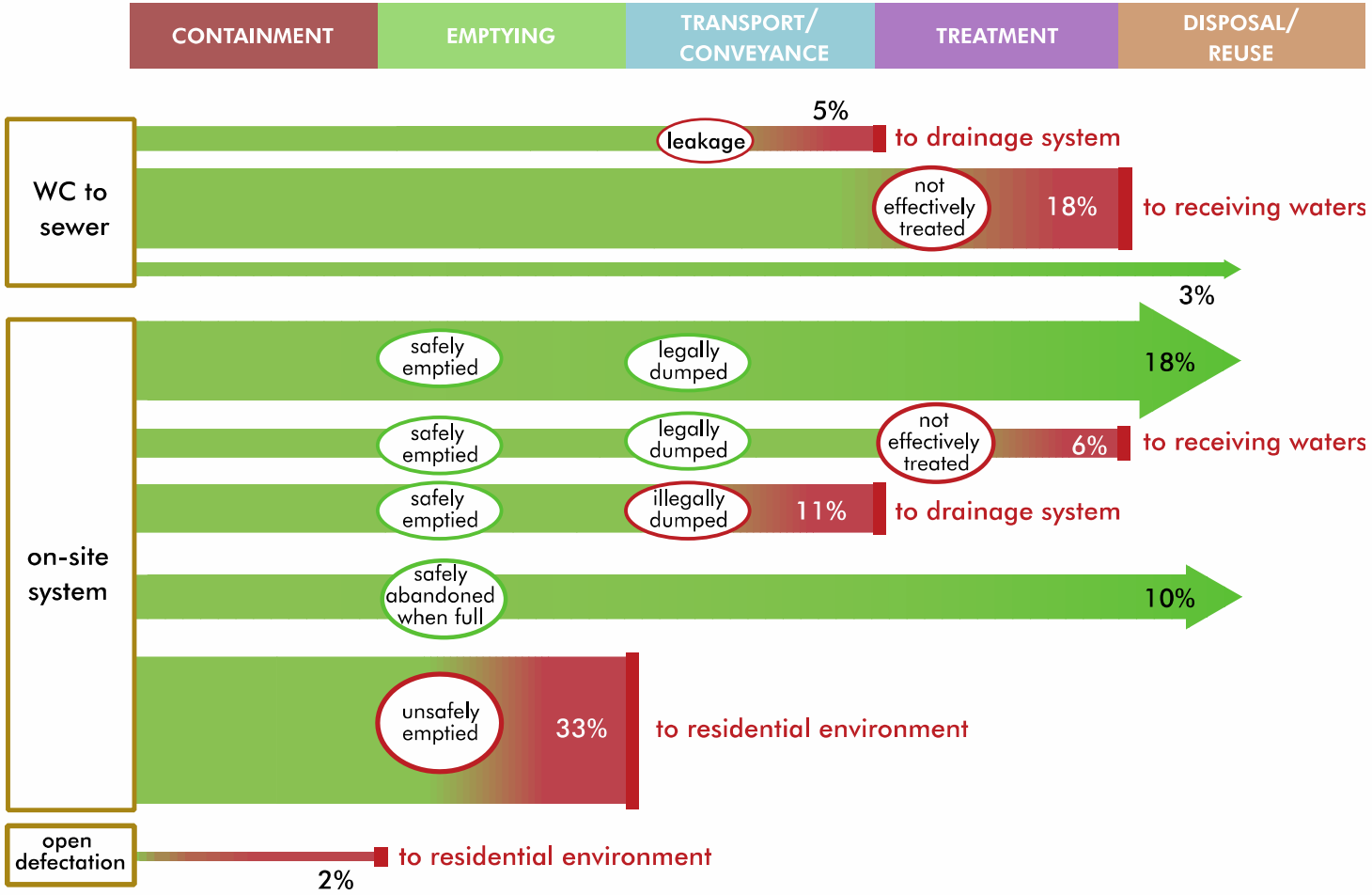
Sources: *UNICEF and WHO (2015) Progress on Sanitation and Drinking Water: 2015 Update and MDG Assessment*

UNEP (2012). Sustainable, Resource Efficient Cities. Making it Happen!; 2012.

WWAP (2015). The United Nations World Water Development Report 2015: Water for a Sustainable World; UNESCO. Paris

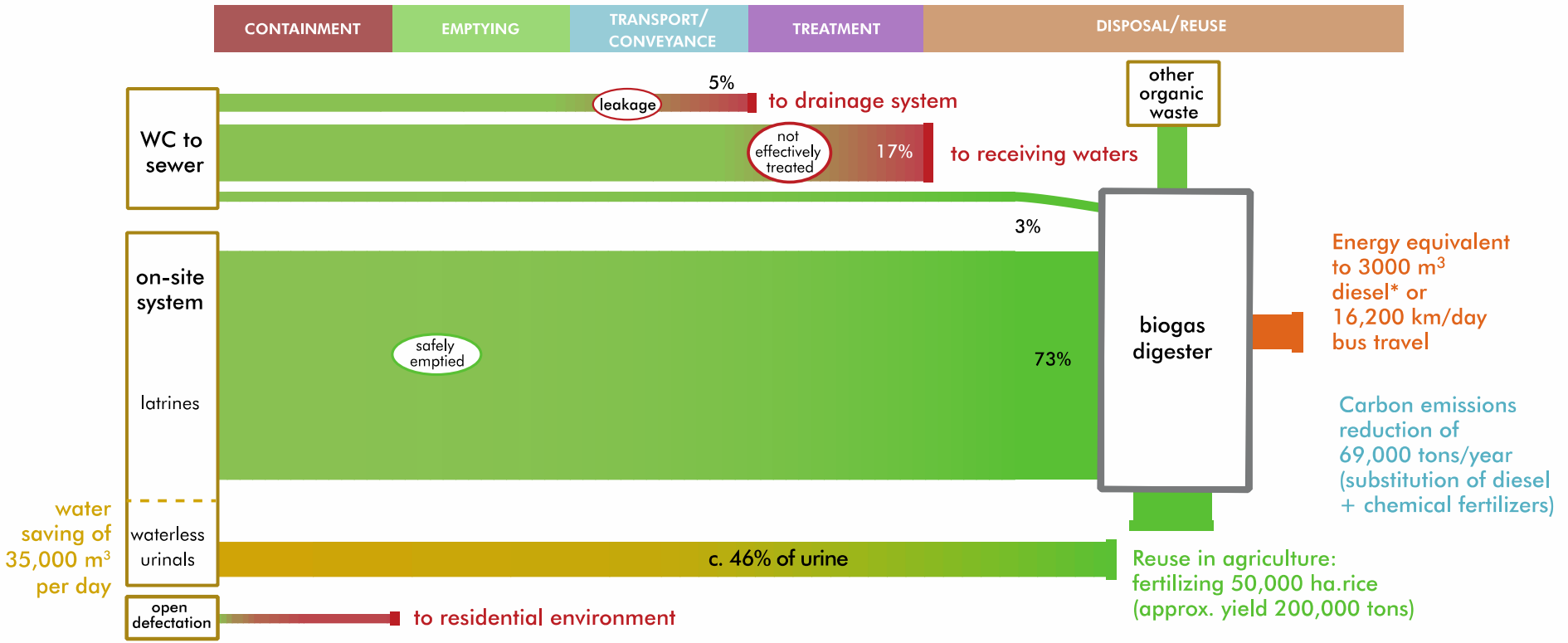
Faecal waste flows in Dakar, Senegal – present status



Based on WSP 2014

Source: Andersson et al., forthcoming 2016

Potential of resource recovery in waste flows in Dakar, Senegal

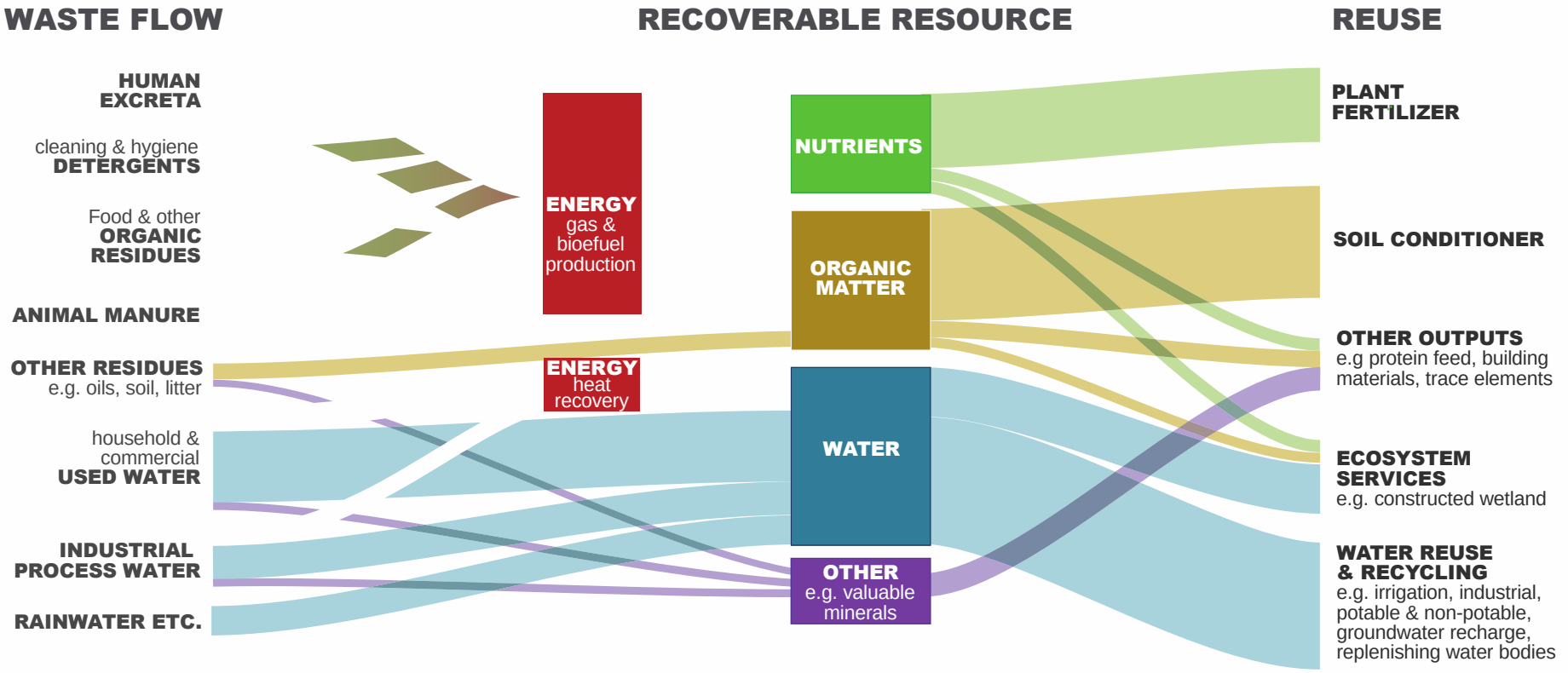


* Adjusted to compensate for increased diesel use in transportation.

Source: Andersson et al., forthcoming 2016

Resource Value Mapping (REVAMP) Tool

- A tool for evaluating the resource recovery potential of urban waste streams



Source: Andersson et al., forthcoming 2016

Resource Value Mapping (REVAMP) Tool

Objectives:

Tool to support integrated waste resource management and recovery, advancing in sustainable water and sanitation service, and addressing multiple urban development challenges through increased cross-sectoral stakeholder engagement

Target users:

Policy-makers and planners, water, sanitation and waste managers, entrepreneurs and investors; development practitioners, students and researchers

Key initial features:

- *Estimate the resources that could be recovered in various forms (such as water, plant nutrients, biogas);*
- *Estimate quantities of reuse products that could be produced;*
- *Estimate potential revenues from different reuse products;*
- *Comparison of reuse options, based on energy and nutrient content, and potential revenues, - to support decision making on city sanitation and waste management plans.*

REVAMP *Testing in Kampala*

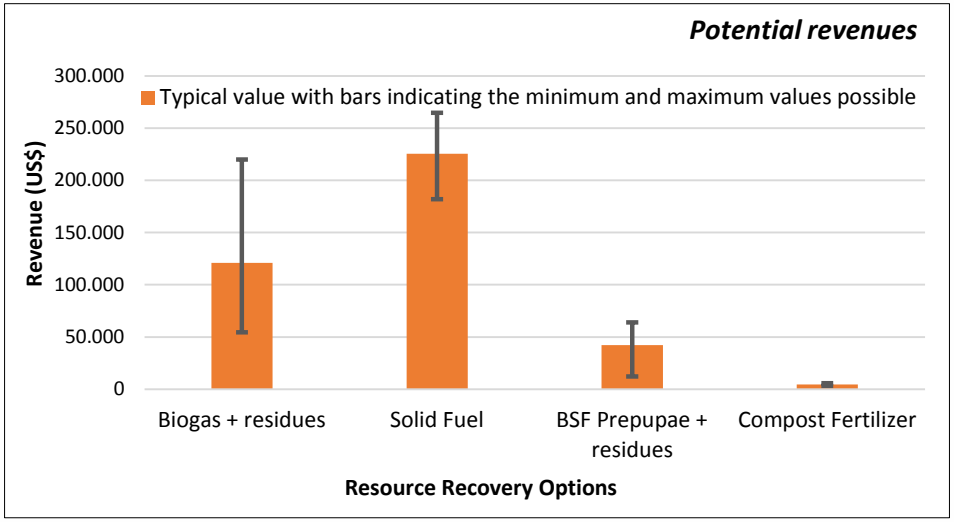
An early version of the tool was trialed in the Ugandan capital, Kampala, in 2016.

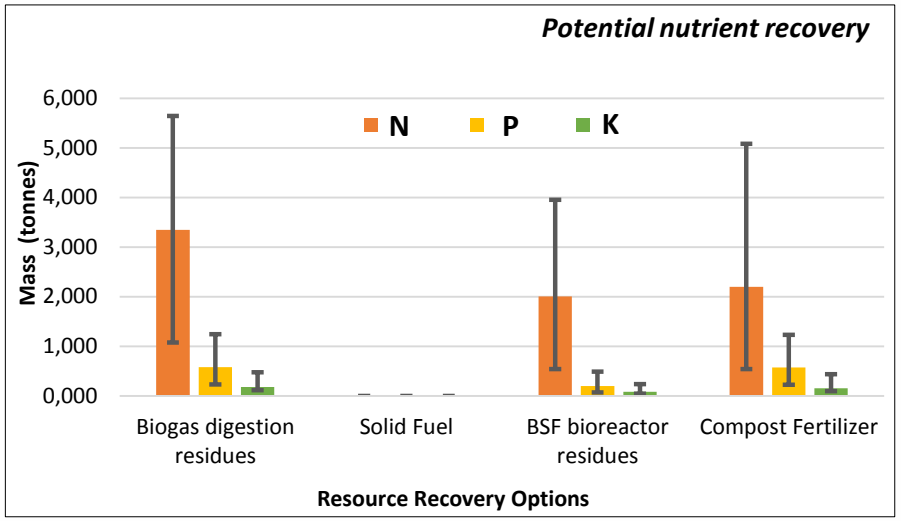
1.5 million people; around 90% of households use on-site sanitation systems (mainly pit latrines and septic tanks); the rest 10% are connected to the sewer system.

Waste stream amounts in Kampala

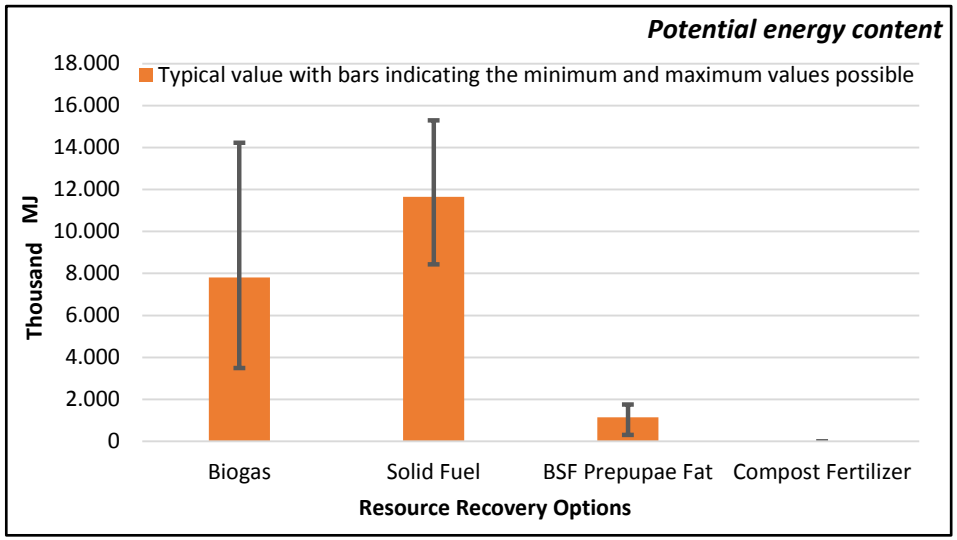
	Scenario 1 Current daily collection	**Scenario 2** Potential daily collection
Faecal sludge (m^3/day)	390	900
Sewage sludge (tonnes/day)	66	282
Organic solid waste (tonnes/day)	700	2199

REVAMP Testing in Kampala





REVAMP *Testing in Kampala*



The potential production of solid combustion could meet the daily needs of 1,108,700 people currently met by firewood, alleviating some of the rapid forest loss.

REVAMP – Next steps?

- Expand the capacity of the tool to incorporate more waste streams (e.g. wastewater and animal manure) and more resource recovery options.
- Include new set of crucial variables: the capital and running costs, and environmental impacts of different resource recovery schemes.
- Migrate the tool from spreadsheets into a more visual platform - where it can be more intuitive and provide an improved user experience
- Validation in a range of varied towns/cities, with a partcipapatory process to populate, test and refine tool functions and user-interface.
- Potential integration with other models & decision support tools for sanitation & waste management
- Expanding with research partners and co-funding

Thanks!!

New release!!

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