From urban waste to sustainable value chains:
Linking sanitation and agriculture through innovative partnerships

Showcase of research project findings and implications – 8 March 2022

IWMI International Water Management Institute

Janathakshan

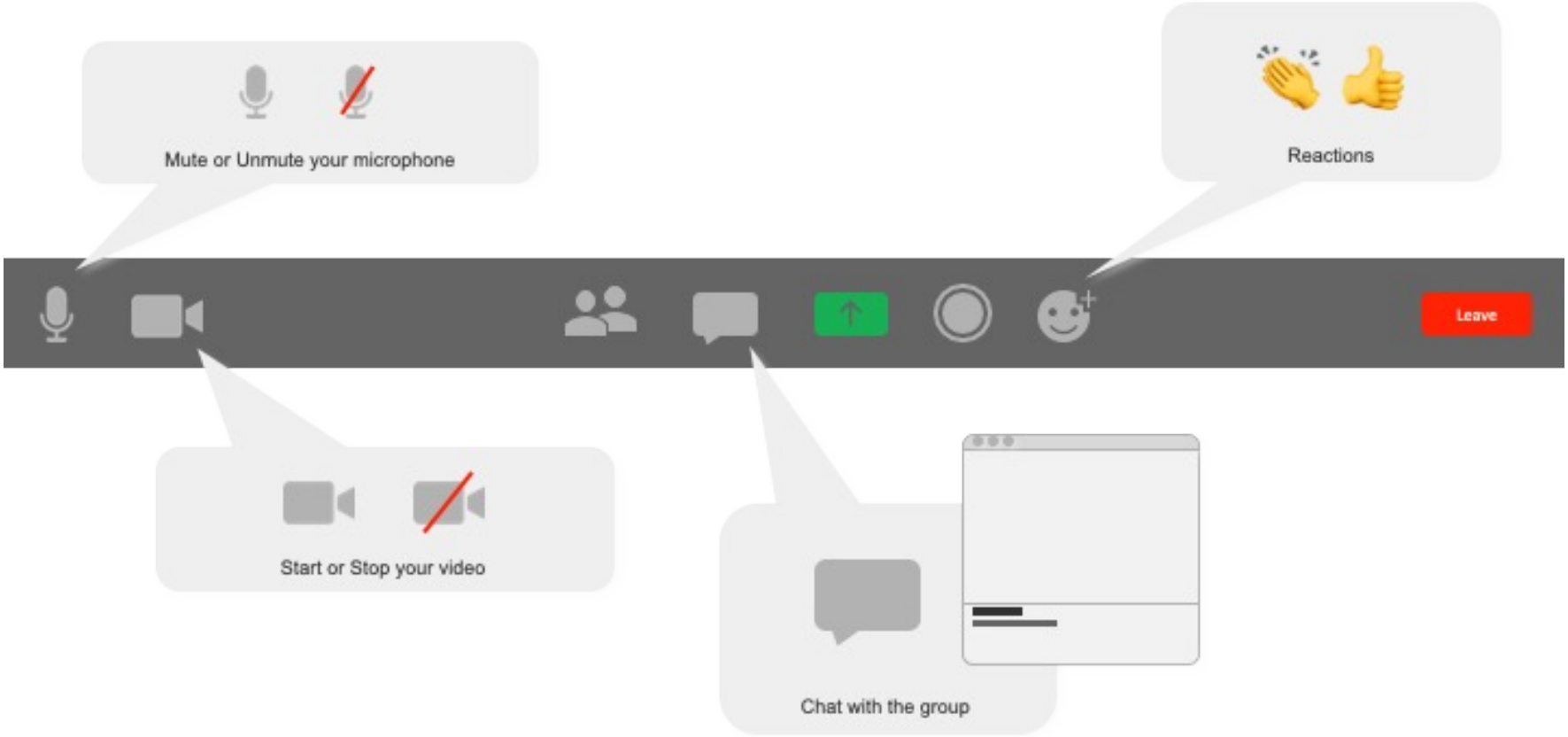
UTS Institute for Sustainable Futures

Australian Aid

Forum agenda

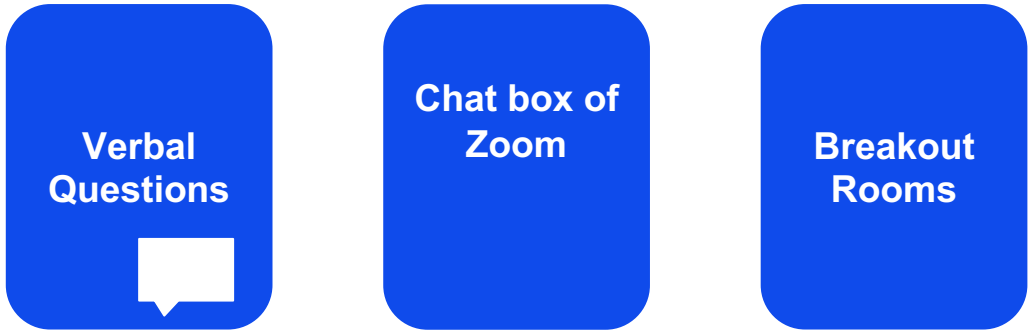
1. Welcome, introductions
2. Opening remarks from State Ministry of Agriculture
3. Brief overview of research project and findings
4. Options for building urban waste to sustainable value chains
5. Remarks from Australian High Commissioner
6. Participant discussions and feedback
7. Ongoing research priorities
8. Thanks and close

Introduction to Zoom



Introduction to Zoom

- Please add your name, organisation and role in the Chat box
- Recording of meeting
- Housekeeping – please keep yourself on mute – unless you want to speak – please share your video if you like
- Zoom functions we will use



Presentation and Facilitation Team

Presenters

- Dr Keren Winterford, ISF-UTS
- Professor Mohamed Esham, SUSL
- Dr Federico Davila, ISF-UTS
- Nilanthi Jayathilake, IWMI
- Damitha Samarakoon, Janathakshan

Additional Group Facilitators

- Anjana Hettige, SUSL
- Isuru Wijetunga, SUSL
- Asitha Weweldeniya, Janathakshan
- Gothami Chandraratne, Janathakshan
- Samitha Daranagama, IWMI


Session 2:
Opening remarks

Opening remarks

Brief remarks from Sri Lanka Gov. Rep Ms. P. Malathy Additional Secretary State Ministry of Agriculture (State Ministry of Promoting the Production & Regulating the Supply of Organic Fertilizer, and Paddy and Grain, Organic Food, Vegetables, Fruits, Chilies, Onion and Potato Cultivation Promotion, Seed Production and Advanced Technology Agriculture)


Session 3:
Brief overview of project

Research partnership

The project “From Urban Waste to Sustainable Value Chains: Linking Sanitation and Agriculture Through Innovative Partnerships” is funded under the **Knowledge and Linkages for an Inclusive Economy** (KLIE) Grants Program of the Australian Department of Foreign Affairs and Trade (DFAT).

This project is a partnership between the Institute for Sustainable Futures at the University of Technology Sydney (UTS-ISF), the International Water Management Institute (IWMI), Janathakshan (GTE) Ltd, Sabaragamuwa University of Sri Lanka (SUSL) and the Sri Lankan Department of Agriculture (DoA).

Research purpose

This applied research project in Sri Lanka connects the waste management, sanitation and agriculture sectors through the circular economy, to improve food security and environmental health.

This project seeks to answer the question: **“What are the enablers and barriers for public and private institutions in Sri Lanka to advance the implementation of sustainable and innovative value chains to improve sanitation, health and food security?”**

The project seeks to establish the knowledge, linkages and policy foundations for enabling local entrepreneurs and policy-makers to implement innovative value chains that determine how organic urban waste and sanitation systems can be transformed to deliver smallholder farmers with agricultural inputs.

Research scopes of work

Organic waste system assessment in targeted study regions

Political economy analysis

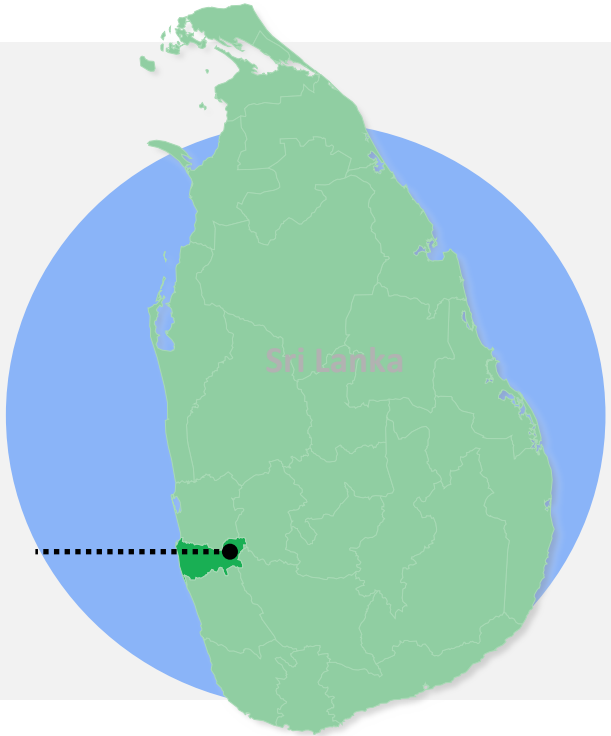
Social & market research

Options for building urban waste to sustainable value chains

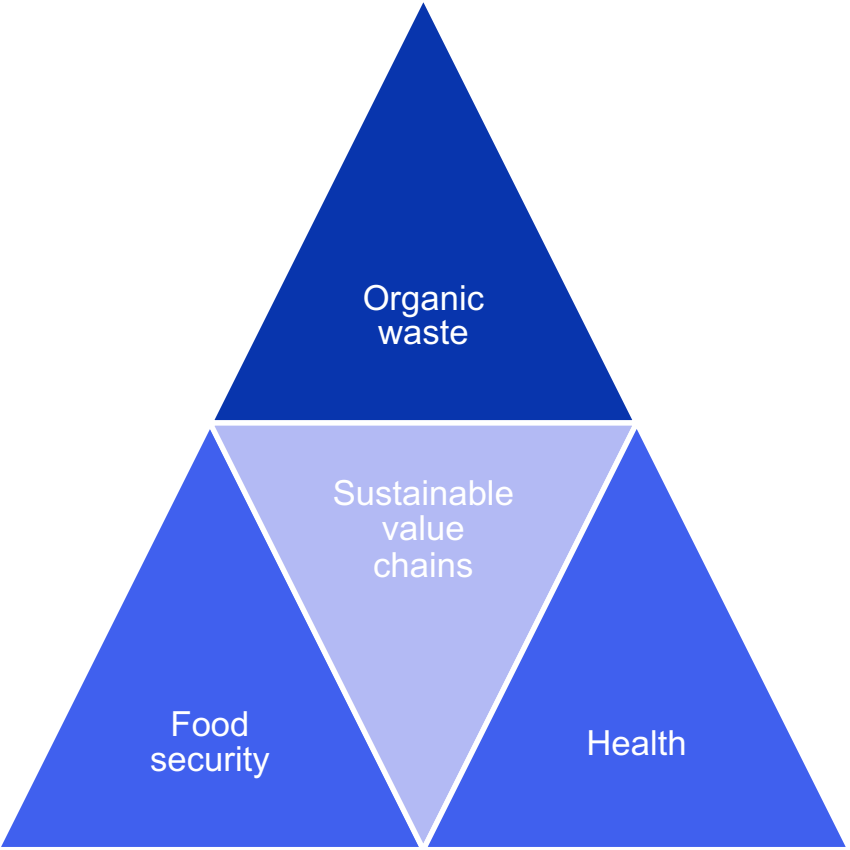
Case study location

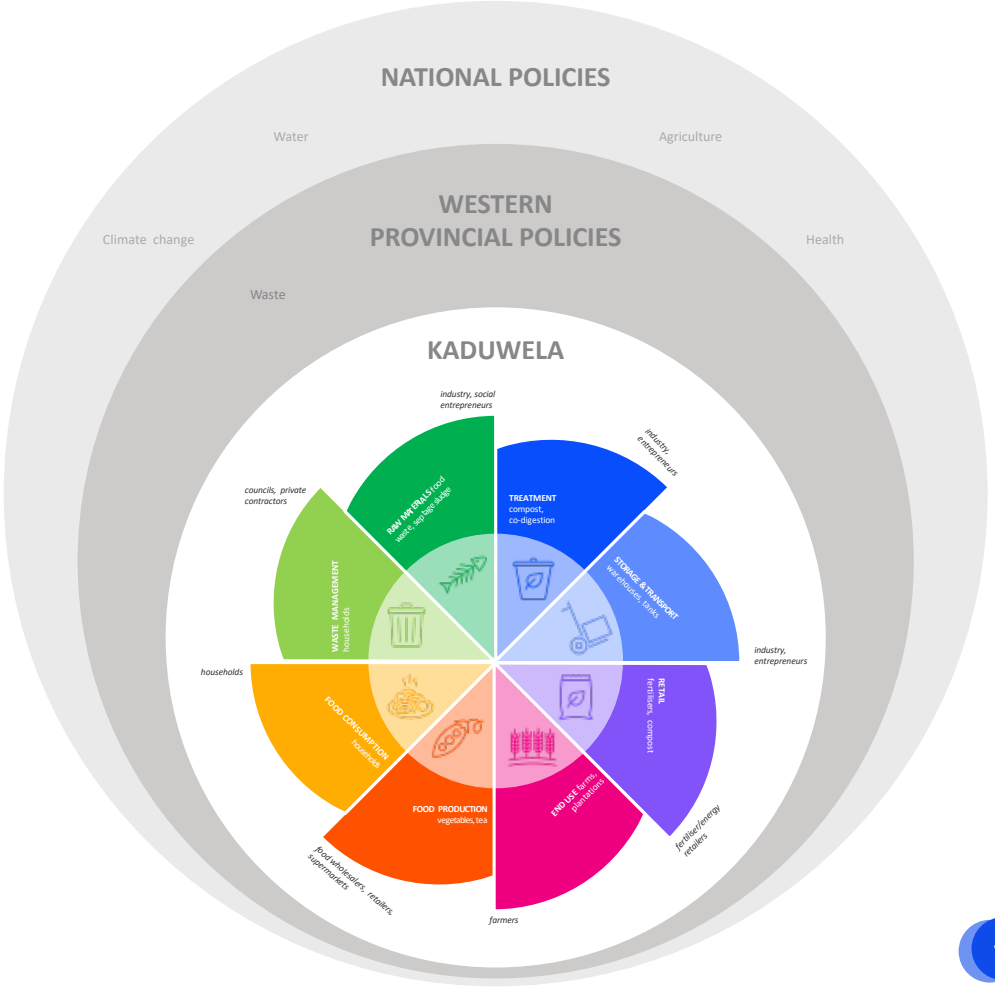
Municipality of Kaduwela

The Kaduwela Municipal Council (KMC) is a suburb of Colombo District in Sri Lanka's Western Province with a land area of 87.7 km2 and a total population of 264,451 in 2018 distributed over 56,997 residential households. It represents 4% of the population of Western Province (11% that of Colombo District) and operates one out 17 composting facilities in Western Province.



Research nexus





Highlights of research findings

Most biodegradable municipal **waste** collected by councils is **not utilised**.

Approximately 60% of collected municipal **waste is biodegradable**.

Waste collection fees and sales of recyclables and compost, covers very little **ongoing costs.**

It is unlikely that a single compost product could meet the **needs of all different farmer groups.**

Compost quality needs to be improved, produced and monitored to standards. **There is farmer demand for quality compost**.

Education for retailers & farmers required to address current misunderstanding of compost and its use with chemical fertilisers.

Highlights of research findings

High costs for transport is a barrier to farmer access to compost.

Planning and mapping of social, environmental, and economic costs required for infrastructure of composting and/or septage and waste management

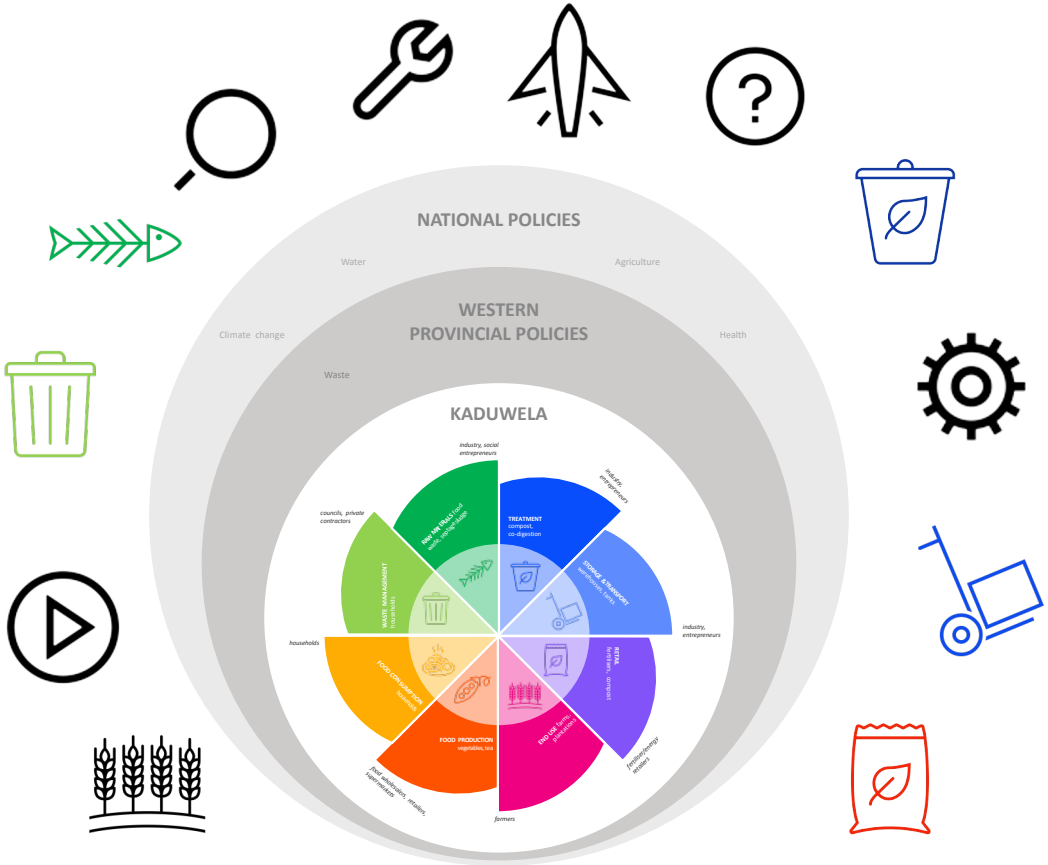
Governance to be improved for multi-stakeholder buy-in to business models / value chains.

There is still a **technical capacity gap** at municipal levels and the Local Authorities.

Innovating towards integrative approaches between waste and agriculture sectors requires risk taking, compromise, to achieve combined outcomes.

Existing knowledge provides a platform to develop the right partnerships at scale to pilot interventions.

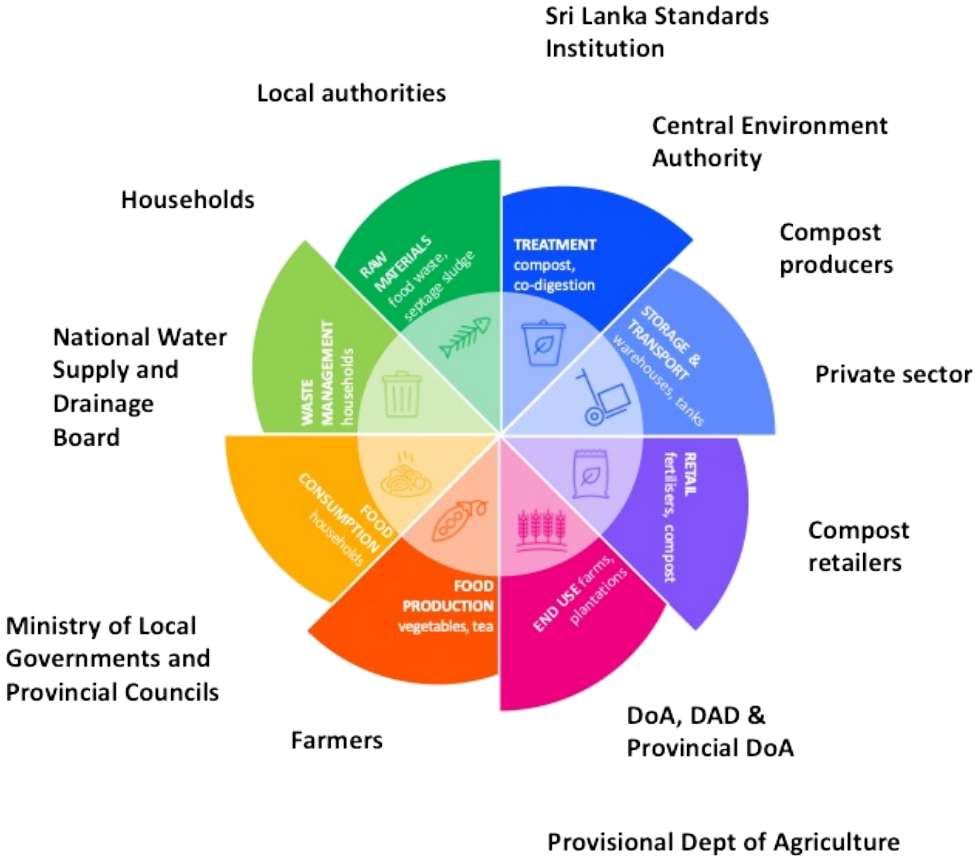
Highlights of research findings – inform options for building urban waste to sustainable value chains



Session 4:

Options for building urban waste to sustainable value chains

Sustainable value chains recognize role and responsibility of multiple actors



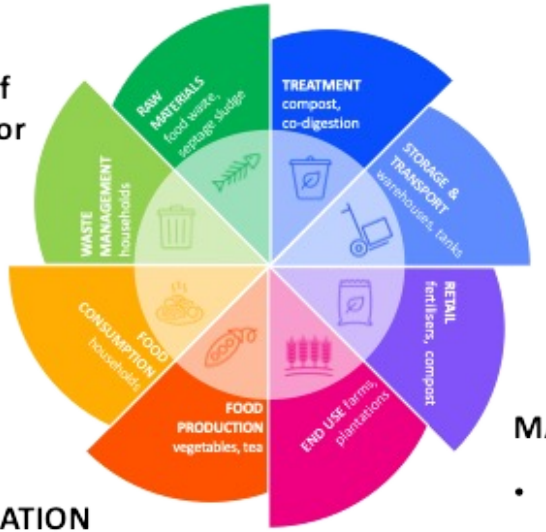
Options for building urban waste to sustainable value chains

QUANTITY

- Increase volume of waste treatment for compost

QUALITY

- Added septage to compost
- Improved waste treatment practices



MARKETING

- Market compost to farmer segments

AWARENESS– EDUCATION ON COMPOST USE

- Education to farmers
- Education to retailers

Option 1: QUANTITY - Increase volume of waste treatment for compost

Expected system change:

- Reduce waste (of collected municipal waste)
- Increase revenue from re-use of collected waste (resource) for compost
- *Increase agriculture yields*
- *Food security*

Option 2: QUALITY – Improved waste treatment practices

Expected system change:

- Better utilization of municipal (organic) solid waste
- Improve quality of compost products
- Increase revenue from waste collection
- Added nutrient value to compost
- *Increase agriculture yields*
- *Food security*

Option 3: QUALITY - Added septage to compost

Expected system change:

- Better utilization of (waste) faecal sludge
- Increase revenue from septage management
- Increase revenue with value addition to compost (co-composting with dried septage sludge)
- Added nutrient value to compost
- *Increased agriculture yields*
- *Food security*

Option 4: MARKETING - Market compost to farmer segments

Expected system change:

- Range of different compost products fit-for-purpose for different farming
- Increased farmer demand for compost
- Increase availability and accessibility of compost (transport and price)
- Increase revenue from re-use of collected waste for compost
- *Increased agriculture yields*
- *Food security*

Option 5: AWARENESS – EDUCATION - Education to farmers on compost use

Expected system change:

- Increase farmer awareness about compost value and use
- Increase farmer demand for compost
- Increase farmer practice of compost

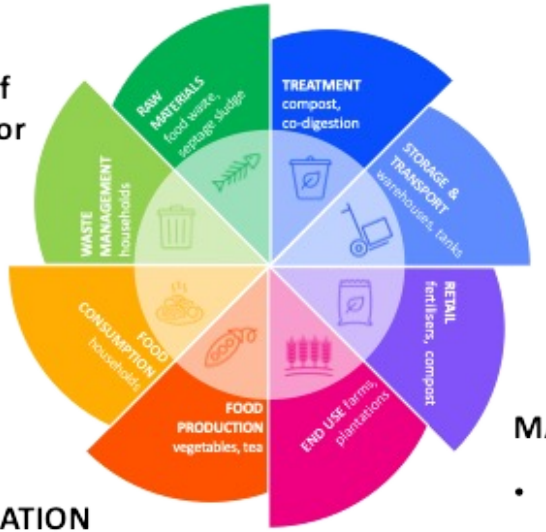
Options for building urban waste to sustainable value chains – for increased agriculture yields and food security

QUANTITY

- Increase volume of waste treatment for compost

QUALITY

- Added septage to compost
- Improved waste treatment practices



MARKETING

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AWARENESS– EDUCATION ON COMPOST USE

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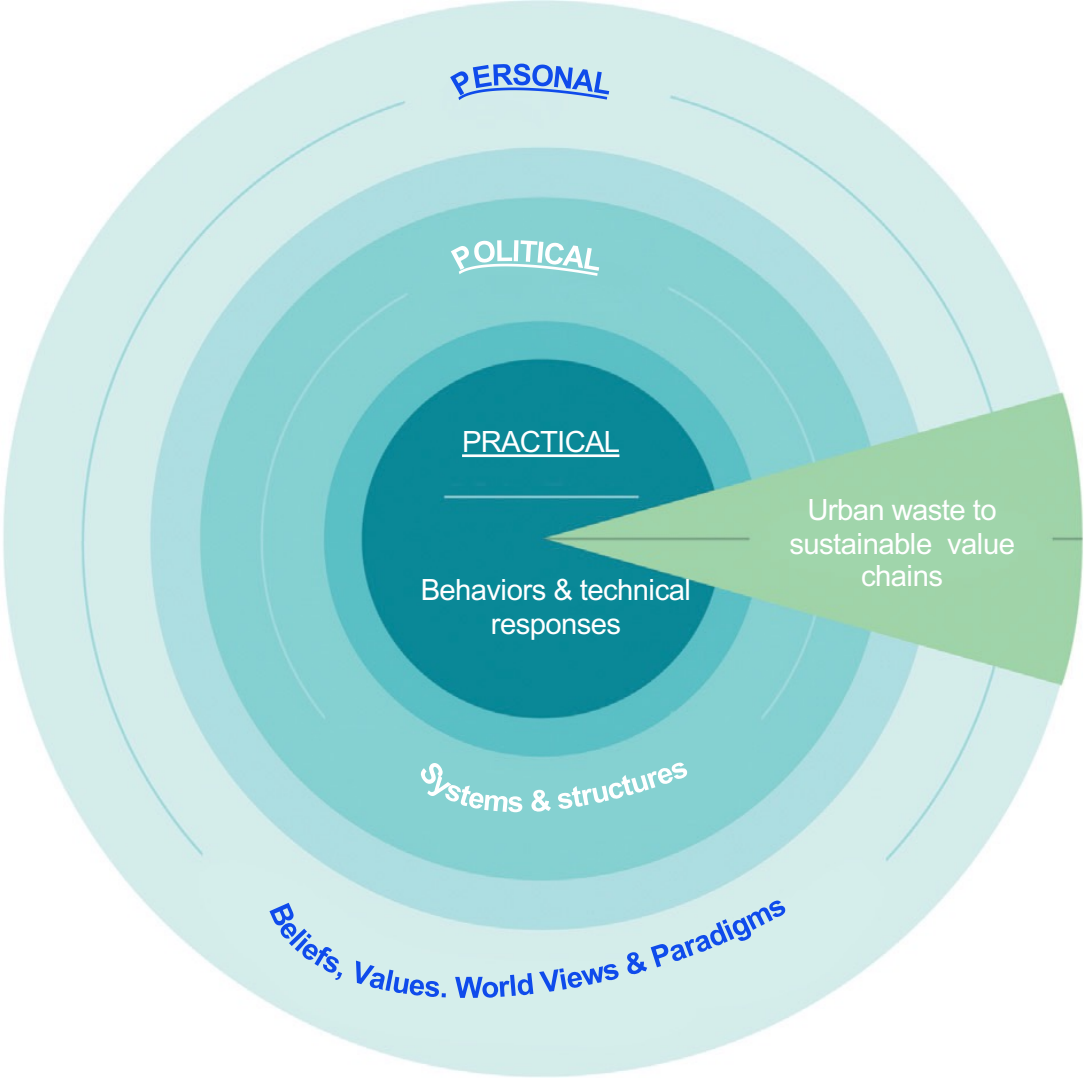
Actions to deliver options can be categorized as 3 types



- Use alternative word to promote use of organic waste as a *'resource'* input
  - **Value** waste as resource and resource **segregation**
  - Shift negative perception of use of **septage in compost production**

- Facilitate **information exchange between MCs** needed re waste treatment / compost production

- Strengthen
  - **standards and certification** of compost products
  - **monitoring of quality**

- Promote
  - quality standards and certification
  - compost use

- Produce variety of compost products

- Promote and incentivise financial viability for compost production and use

Behaviour responses

- **Household** segregation of waste
- **Farmer** use of compost
- **Farmer** knowledge of quality compost
- **Municipal Council** segregation of waste as part of quality compost production
- **Retailers** educated on compost composition

Technical responses

- Improve **land** size and quality necessary for waste treatment and compost production
- **Transport** costs are high and need to be reduced
- **Technology** improvements
- Technical **staff expertise and skills** for quality compost production
- Improve **record keeping**
- **Quality inputs** for compost production required

Session 4:

Participant questions / clarifications / comments


Session 5:
Remarks

Welcome remarks

Brief remarks from Mr David Holly Australian High Commissioner to Sri Lanka

Session 6:

Participant small group discussions

Group discussions

Actions to take:

1. What actions can you take to deliver options? (you-organization)
2. What actions do others need to take? (who-organization)

Types of action:

3. What actions can be done tomorrow?
4. What will take longer to change?

Small group report back and discussion

Session 7:

Ongoing research priorities

What are your priorities to progress the agenda of urban waste to sustainable value chains

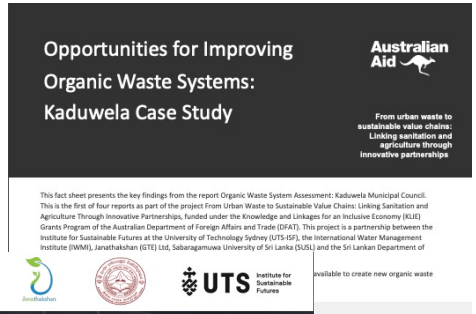
1. What current initiatives are you aware of which are progressing this agenda of building urban waste to sustainable value chains?

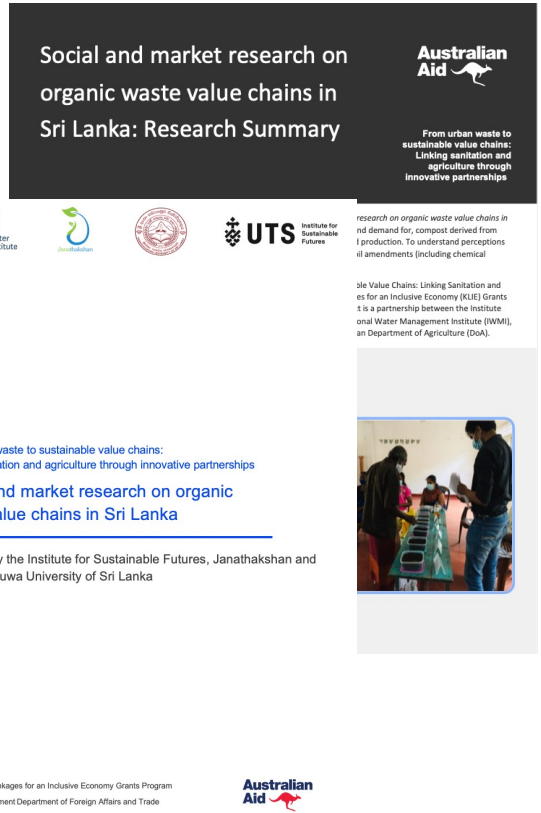
2. What research initiatives can be done in the future to progress building urban waste to sustainable value chains?

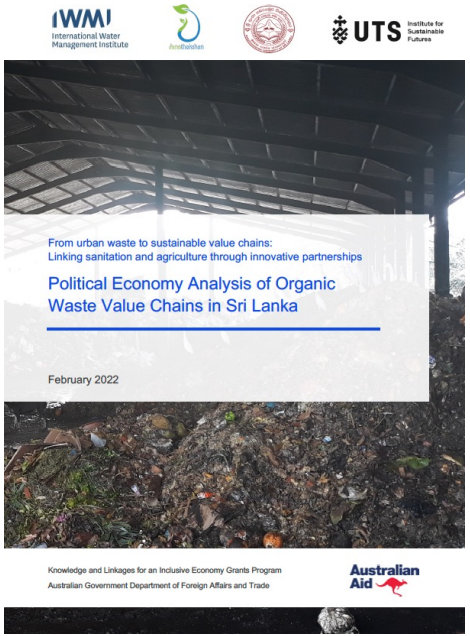
Write your responses in the chat box
1 – your response
2 – your response


Session 8:
Thanks and close

Access research findings







https://www.uts.edu.au/isf/explore-research/projects/urban-waste-sustainable-value-chains-linking-sanitation-and-agriculture-through-innovative-partnerships-sri-lanka