

# Social and market research on organic waste value chains in Sri Lanka: Research Summary



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

This document presents a summary of key findings from the report *Social and market research on organic waste value chains in Sri Lanka*. The report identifies end-user and value chain stakeholder perceptions of, and demand for, compost derived from Municipal Solid Waste (MSW), including compost enhanced with faecal sludge, for food production. To understand perceptions and demand for compost, the research also explored farmer perceptions of existing soil amendments (including chemical fertilisers and animal manure).

This is the second of four reports as part of the project From Urban Waste to Sustainable Value Chains: Linking Sanitation and Agriculture Through Innovative Partnerships, 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 focus on Municipality of Kaduwela and surrounding Homagama and Seethawaka Divisional Secretariat (DS) Divisions of Colombo District

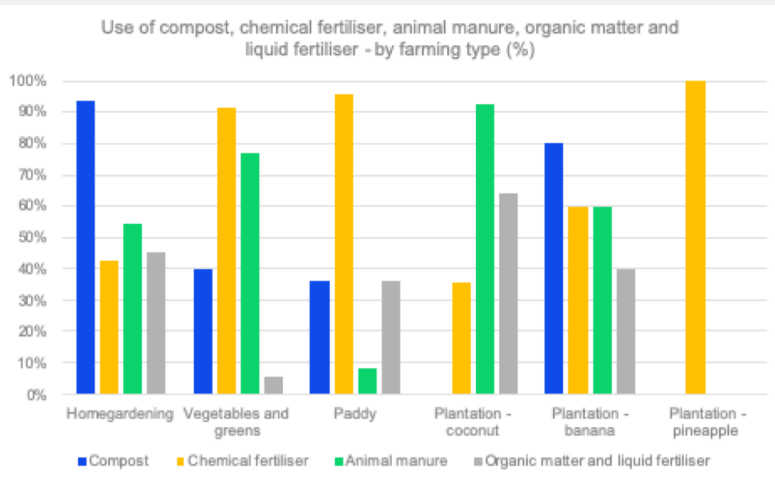
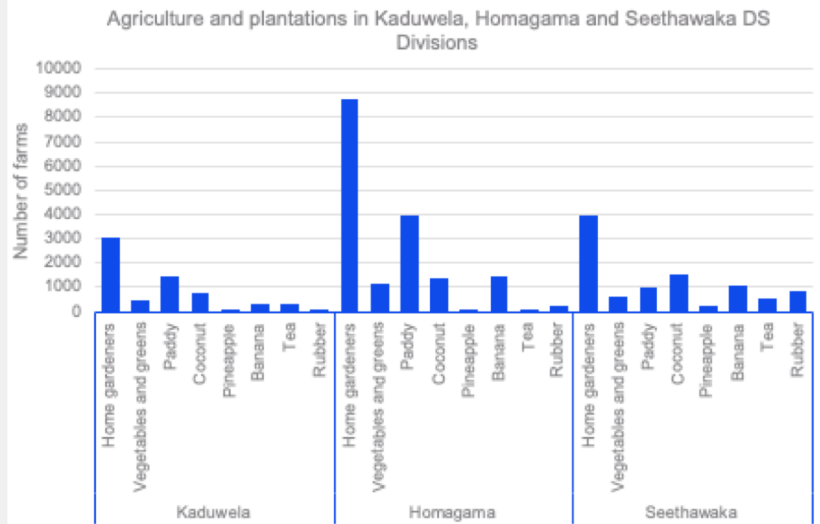
- In September 2019, a scoping study was undertaken to understand the farming systems with the potential to use compost products in the Kaduwela, Homagama and Seethawaka Divisional Secretariat (DS) Divisions of Colombo District (see map). The study identified six important farm types based on number of farms and total area in the districts as: home gardeners, vegetables and greens, paddy rice, coconut, banana and pineapple farms.
- In August 2020 the project team gathered data from 115 farmers in 20 small groups through a brief survey, a focus group discussion and in-depth interviews with selected participants on farming systems, plant nutrient sources and usage, and perceptions of compost samples. (See photo on right of farmer examining samples of compost)
- Interviews were undertaken with compost and fertiliser retailers and compost producers to augment understandings of farmer awareness of, and demand for, compost derived from MSW, including compost enhanced with faecal sludge, for food production.



# Farming practices and current use of compost, chemical fertilisers and animal manure

Home gardening is the most common type of farming across the three DS Divisions based on the number of farmers. In terms of farm types, Seethawaka has a high number of plantations, whereas Homagama is dominated by paddy farming. Kaduwela also has a high number of poultry farmers (potential sources of manure). In addition to agriculture, Kaduwela and Seethawaka have industries such as beverage and garment manufacturing, while Homagama is planned to be developed as an education hub.

(see figure on right).



- Most farmers use a mix of soil amendment products, using an average of two types of products.
- Home gardeners and banana farmers have high rates of compost use, and many also use animal manure, chemical fertilisers and organic matter.
- Chemical fertilisers are used at high rates by vegetables and greens, paddy and pineapple farmers.
- Many vegetables and greens farmers also use animal manure in addition to chemical fertilisers.
- Coconut farmers frequently use animal manure, often in combination with chemical fertiliser or organic matter. (see figure on left).

## Farmer perceptions on compost, chemical fertilisers and animal manure

- Around half of all farmers in the study currently use compost. Farmers tend to use chemical fertilizers because of a combination of experience and ease of use, and to a lesser extent price/availability and plant growth response. Farmers tend to use animal manure because of a combination of experience, advice and availability. Farmers tend to use compost because they see it as helping to produce healthy food that is free from chemicals, toxins and poisons. Many farmers also commented that compost leads to better quality plants and has benefits for plant growth and yield, particularly if used with chemical fertilizers or animal manure.

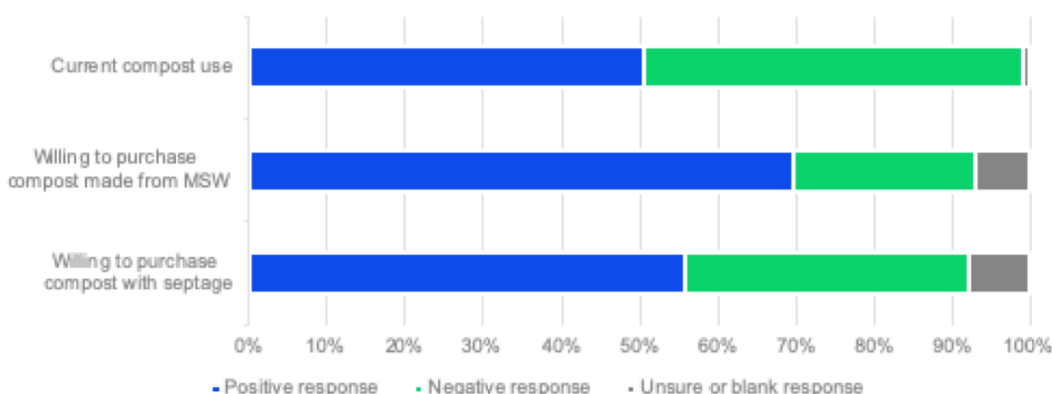
## There was different perception of chemical fertilizers and animal manure and compost between the farming groups

- Vegetable and greens farmers are mainly concerned about plant growth and yield (which was frequently suggested as a reason for using chemical fertilisers, and to a lesser extent manure and compost).
- Home gardeners were generally concerned about human health affects (commonly noted as a reason for using compost, and a reason for not using chemical fertilisers).
- Paddy farmers and coconut farmers are often concerned about price and availability (paddy farmers noted that they receive low priced or free chemical fertilisers and coconut farmers receive low priced or free poultry manure from neighbouring farms).

# Farmer willingness to purchase compost from MSW or made with septage

- More farmers are willing to purchase compost than currently use it, suggesting there is potential to increase compost demand.
- Farmers are more willing to purchase compost made from MSW than they are to purchase compost that contains septage, except for coconut farmers who prefer compost with septage.
- Around 70% of farmers are willing to purchase compost made from MSW, because they feel it has a good nutrient content and a reasonable price. Many commented that they are only willing to use it if it is of a high quality, meets the approval of government or a standard, and is free from anything harmful.
- Just over half of farmers are willing to use compost that contains septage. Farmers gave similar reasons to why they would be willing to use compost made from MSW, but in addition noted that they are willing to use compost made with septage if it gives good results for plant growth and yield.
- Farmers who are not willing to use compost from MSW commented that this is because they are uncertain about the contents and concerned that it could include plastics, chemicals, germs/diseases or other harmful substances. For compost with septage, many farmers felt it is unsuitable for use on foods for home consumption.

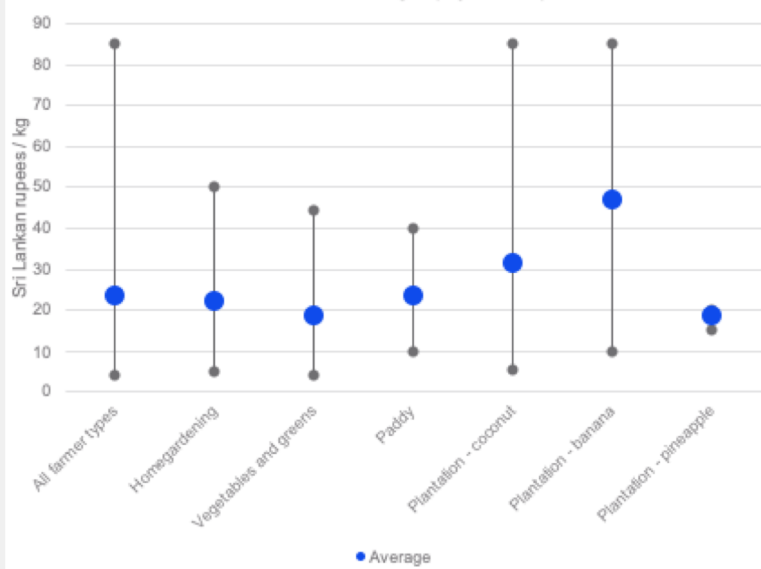
Comparison of current compost use with willingness of farmers to purchase compost made with MSW or septage



## Farmer practices and perceptions relating to cost of compost:

- There was a wide range in the price that farmers were willing to pay for compost, from Rs. 4.30 to Rs. 85.00 per kg, with an average of approximately Rs. 23.00 rupees per kg.
- Coconut and banana farmers were willing to pay much higher prices than other farmer types on average.
- The average price farmers are willing to pay is higher than the current minimum price of compost made from MSW.
- Although farmers show a willingness to pay in line with costs of compost samples currently in the market, they also expressed that they are expecting a high quality product for these prices, which currently may not be met.

Price farmers are willing to pay for compost



# Implications for future organic waste value streams



## Market segmentation

Values and needs differ between farmer groups (potential market segments) - it is unlikely that a single compost product could meet the needs of all potential users.



## Education on the use, benefits and application of compost

Education required to address current misunderstanding of compost and its use with chemical fertilisers.



## High quality production and adherence to standards

Compost quality needs to be improved and produced to standards, free from contamination. There is farmer demand for quality compost.



## Pricing

Compost must be available to farmers at low / reasonable price. Farmers are willing to pay more than current minimum market price for improved quality compost.



## Improved transport and purchasing options

High costs for transport is a barrier to farmer access to compost – innovative transport distribution business models are required



## Promote indigenous seed varieties

Increase the availability of traditional seeds and promote their use which may respond better to organic inputs



## Government support

Increased involvement of the government could help to promote compost use, including support for options highlighted above such as developing recommendations on compost use, on-farm trials or demonstrations, increasing the technical knowledge of extension officers and supporting standards development and certification.

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