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RUAF FOUNDATION



# Food Waste Management in City Region Food System

COLOMBO (SRI LANKA)

Policy brief





## Background

About 60% of Sri Lanka's municipal solid waste (MSW) is generated in its Western Province where the Colombo District contributes half [2100 t/day] and within the district the Colombo Municipal Council [CMC] 700 t/day or 10% of the national total. These 700 t are produced on just 37 square kilometers by a population of about 550,000 [2012]. This is about 2.6% of the national population [or 15% of the national urban population] on less than 1% of the country's land area.

To cope with this load, CMC is working with three private companies [Abans, Carekleen and Burns] to share the responsibility across the city where almost all waste is collected. Among all districts of Sri Lanka, Colombo district accounts for the highest proportion of households relying on local authorities and the private sector for solid waste [68%; Figure 1]. At the national level, only 20% of households rely on such support, while nearly half [47%] burn their waste. Another 23% dispose it within (or outside) their premises, while about 8 % resort to backyard composting of the organic waste fraction.

While within CMC the collection rate is in general keeping pace with waste generation, only 75% of generated waste gets collected in the larger Colombo district. But also within CMC, collection can show significant temporal variation, for example, due to heavy rainfall and inaccessible landfills resulting of piles of trash in the streets.

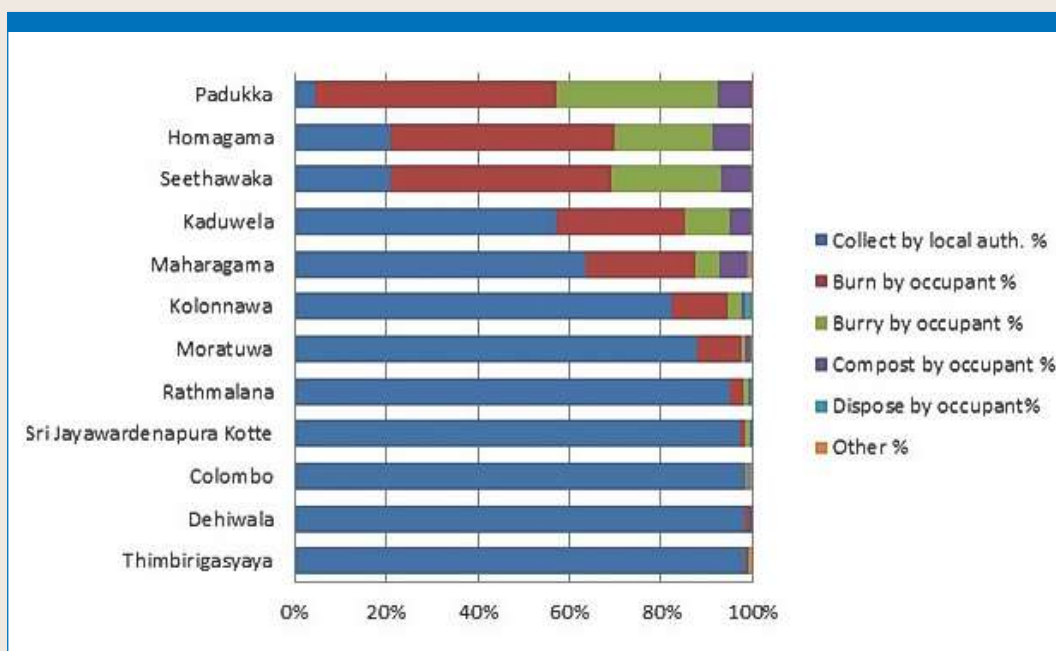


Figure 1: Methods of Solid Waste Disposal in Colombo District – 2012

Source: Sri Lanka Census of Population and Housing, 2011; graph by Bilesha Weeraratne;

<http://www.ips.lk/talkingeconomics/2017/04/24/pay-as-you-throw-a-solution-to-sri-lankas-mounting-garbage-issue/>



Meethotamulla dumpsite collapse (dark area shows where the landslide went down) (Source: ©SLAF media)

Accelerated by the collapse of the CMC-managed Meethotamulla landfill in the Colombo district, which resulted on 14th of April 2017 in the destruction of over 140 homes and 30 deaths, MSW management has become one of the most discussed and complex challenges in Colombo. Proposed solutions focus largely on safe disposal, but also resource recovery and reuse (RRR) as 63% of the waste consists of compostable organic [food] residues. Although the Meethotamulla dumpsite has been closed, alternative locations in proximity remain hard to find. Interim solutions like close to the wetland sanctuary of the Muthurajawela marsh received Cabinet approval but are certainly far from desirable given that the location is known for its unique and diverse ecosystem.

In short: Alternative locations for landfills are hard to find and there is an urgent need to discuss ways to reduce, recycle, recover and reuse in particular the large fraction of organic [food] waste.



Present place of dumping adjacent to an internationally recognized wetland within the CMC area [Source: ©FAO,IWMI,RUAF (Unpublished)]

## Context

### Waste management in Colombo

In 2014, CMC spent LKR 1.530 billion [USD 11.7 m] on MSW management. Several institutions are directly or indirectly involved. Waste collection and disposal responsibilities are vested with the local authorities, either a municipal council (as per the Municipal Councils Ordinance -1947), urban council (Urban Councils Ordinance – 1939) or local council (Pradeshiya Sabha Act – 1987). Provisions related to waste management and disposal, are made under the National Environmental Act No.47 of 1981 and Public Nuisance Ordinance.

There are a myriad of institutions concerned with waste management at different stages, including the Ministry of Local Government and Provincial Councils, Ministry of Mahaweli Development and Environment, the Urban Development Authority under the Ministry of Megapolis and Western Development, the Central Environmental Authority (CEA) as regulatory body, the National Solid Waste Management Support Centre, Western Province Waste Management Authority, and the Local Authorities.

### Focus: Food Waste

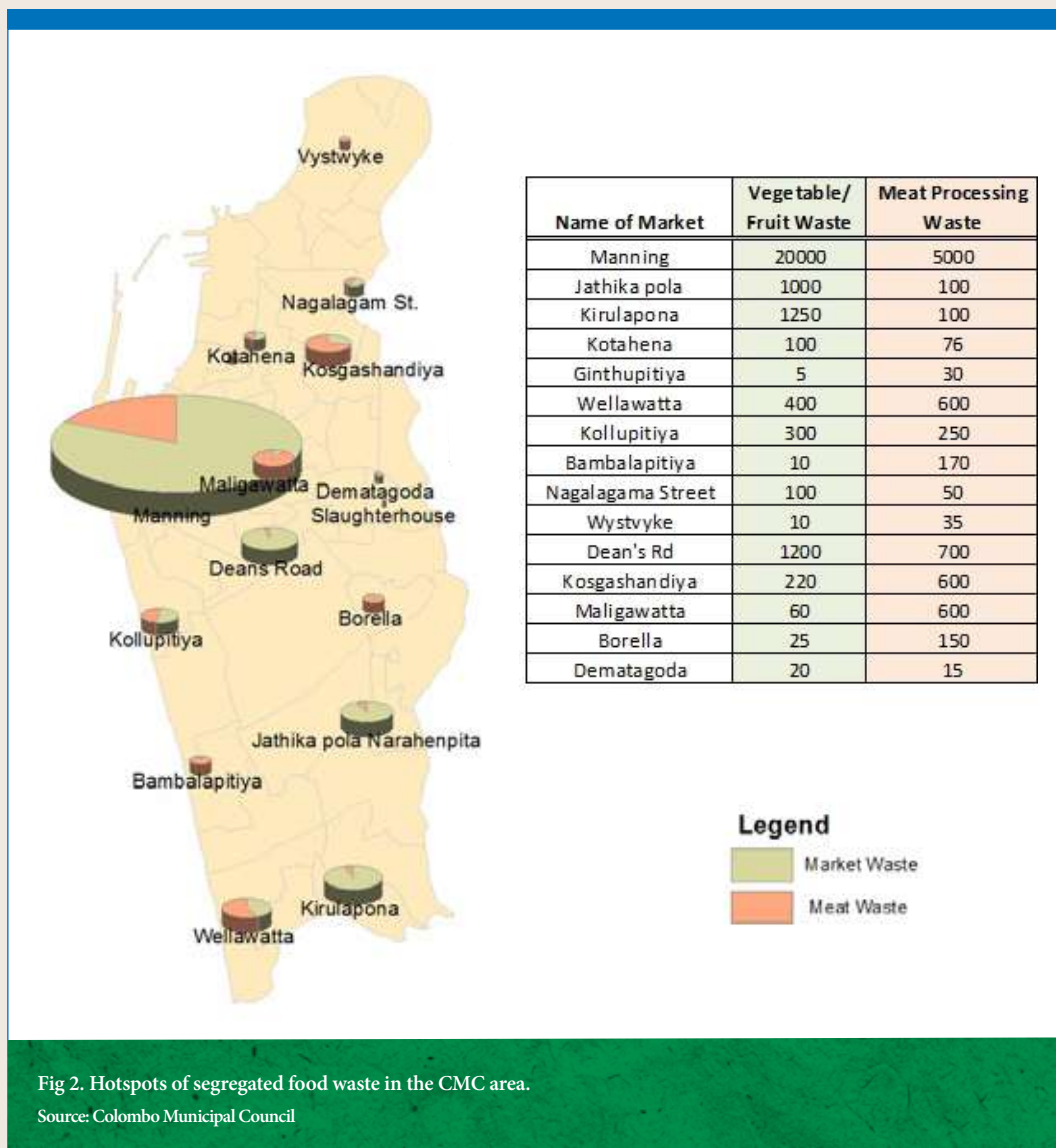
About 80% of the organic waste is short-term biodegradable food waste. Thus, the amount of food waste can be estimated as 353 t/day, which is half of the total waste generated. Although Colombo only introduced at the end of 2017 the need for source segregation at household level, a substantial portion [ca. 146t/day] of the generated food waste is already segregated (see Table) to enter dedicated recycling processes.

Source of Food Waste	Amount (MT/Day)
Segregated	
Restaurants	110
Markets	25
Slaughter houses and Meat shops	9
Prisons	2
<b>Total</b>	<b>146</b>

### Current situation

So far, CMC has not embarked on a larger holistic waste management strategy that includes reduce, reuse and recycle (RRR) approaches linking for example with the National Pilisaru project led by the CEA. Current recycling efforts are household-based (backyard composting) or anecdotal and driven by the private sector (e.g. hotels supporting piggeries). Given the availability of already sorted organic waste and the new legislation calling for waste segregation at household and institutional level, opportunities for resource recovery as well as green businesses are raising. CMC is well placed to lead this process through an integrated waste management plan, putting in place supporting regulatory and fiscal mechanisms in support of private sector participation to make RRR a reality. There is a significant potential to reduce the generation of food waste. Several supermarket chains adopted the option to reduce prices for fruits, vegetables and other products before weekends and close to their shelf life. Initiatives to reuse food waste for example to feed livestock, or produce compost or bio-energy, however, are only slowly emerging. Such initiatives are needed, especially for the hotspots of food waste production (Figure 2).

A right step was the announcement in 2017 that profits from solid waste management and organic fertilizer sales will be exempt from income tax. Also policy level focus on the management of MSW progressed significantly in 2017. Especially the new directives concerning the permitted types of plastic shopping bags, lunch sheets and take-away food containers, as well as on household-based waste sorting were important steps towards the reduction of polluting waste, recycling and better landfill management.



However, authorities are still struggling with the enforcement of the new legislation, especially at household level. The strategy to leave unsorted waste behind might lead to public health hazards or environmental pollution as households start dumping their uncollected waste elsewhere. There is an increasing call for fines, taxes on shopping bags and refund on all types of bottles, plastic and glass. Given the complexity of the institutional landscape, leadership is needed, as

otherwise the burden of implementation remains at the lowest and often weakest end of the chain, i.e. with the local authorities as per the Local Authority Act. The institutional challenge is however larger. There appear to be work redundancies, passing of responsibility, unclear resource allocation for multiple institutions, limited direct customer contact and as a result a high degree of public dissatisfaction.

## Recommendations

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- Streamline the MSW sector with an empowered umbrella body that coordinates integrating and implementing MSW management:
  - Reason: Vertical and horizontal complexity of the institutional landscape; implementation of regulations detached from their management.
  - Action: Coordinating body to be appointed
  - Outcome: Higher degree of overall efficiency, cost savings, higher customer satisfaction
- Create an enabling investment climate for private sector engagement in RRR:
  - Reason: RRR businesses are relatively new to Sri Lanka and there could be further financial and regulatory incentives like the existing tax exceptions for the import of renewable energy equipment.
  - Action: Introduce financial schemes to attract and incentivize local entrepreneurs to enter RRR businesses, discourage food wastage in the retail sector, and support waste valorization processes.
  - Outcome: Reducing waste management volumes while creating value added resource recovery products.
- Create an enabling environment at household level:
  - Reason: Currently CMC is attempting to adopt source separation for household and institutional waste but buy-in is limited.
  - Action: CMC to improve on customer communication and awareness creation, support a refund for bottles, fines for non-source-separating entities, and a price for plastic shopping bags.
  - Outcome: Household buy-in; further reduced organic waste load.
- Link food waste generator and potential user:
  - Reason: There is demand for food waste as animal feed, but the link between waste source and the potential user [what, where, when] is missing.
  - Action: CMC can be the moderator (e.g. low-cost web-based platform/phone app) for facilitating direct producer-user linkages.
  - Outcome: Further waste reduction and transport savings for CMC, and quality feed for the local livestock industry.
- Introduce by-laws to encourage food waste reduction in canteens and catering:
  - Reason: High percentage of food waste is generated by institutional canteens, in food courts and through event catering.
  - Action: Extend source segregation to all businesses, canteens of private and public schools, hospitals, food courts, etc. by [a] capacity development in food waste reduction, [b] providing incentives (e.g. school ranking to create peer-pressure) and/or penalties; and [c] infrastructure support in public markets to keep food fresh.
  - Outcome: Less food waste and lower pollution; environmental education.



## Contacts

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