



# Sustainable Financing for Urban Solid Waste Disposal Services in Sri Lanka

*September 23, 2017*

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# Motivation

- Sri Lanka is a rapidly urbanizing country, with an increasing demand for urban services.
- Urban population approx. 40-45 %
- The shrinking size of open area in residential lands / changing lifestyles associated with urbanization
  - greater generation of
  - demand for municipal solid waste
- Insufficient allocations provided by the Central Government and negligible revenue collected for Municipal Solid Waste Management Services (MSWMS)
- Local authorities are struggling to balance their finances and demand for MSWMS
- A lucid reflection of this struggle is the lateral landslide experienced at an open dumping site in Colombo District on April 14, 2017



Underscored the importance of sustainable solutions for urban solid waste management in Sri Lanka.

# Objective

- Develop a conceptual paper
- Explore available financing mechanisms for sustainable financing of municipal solid waste management in Sri Lanka
- Draw on international experiences

# Background

- Over five million hhs
- Methods of solid waste disposal by hhs
  - Collection by local authorities, burn, bury, composting, disposing by occupants
- 2 + million urban hhs 40% rely on LA's for collection
- Methods of solid waste processing and disposal by LAs
  - Recycling , incineration, composting, bio gas generation and filling, & open dumping
- As already seen open dumping is associated with health hazards, negative environmental impact and high opportunity cost.

# Institutional framework for Financing

- The responsibility of providing MSWMS is with respective LA
  - Municipal Councils (MC)
  - Urban Councils (UC)
  - Pradeshiya Sabha (PS)
- Regulatory institutions
  - National Solid Waste Management Support Centre (NSWMSC)
  - Central Environmental Authority (CEA)
- Capital expenditure on MSWMS - allocation by Provincial Councils
- Recurrent expenditure for MSWMS - generated by LAs
- In many LAs the revenue on providing MSWMS is small.
  - LAs in Colombo and Gampaha districts the revenue collected < 10 % of respective total MSWMS expenses in 2016.

# Issues in Financing

1. MSWM involves substantial costs (equipment, technology), difficulty in recovering cost.
2. High dependency on grants allocated by the central government
  - Grants by the central government are influenced by the financial condition of the central government
  - unsustainable
2. Most LAs in Sri Lanka either do not collect or collect negligible service fees for SMWMS.
  - collected fees account for less than 1% of the MSWM
  - provides services to all households and businesses - but charged from large-scale businesses only
3. LAs are focused on balancing the deficit between total revenues and expenditures
  - inadequate attention is paid for sustainability activities

# Financing Options: Property Tax

- Main source of financing for MSWMS
- Guarantees collection of fees through threat of liens on property
- Necessitates competition with other critical municipal needs for allocation of funds
- Possibility of cost to commercial properties being transferred to residential users
- Capacity to socialize costs negates the incentive to reduce waste at household level



# User fees

(PAYT/ SMART/Unit Based Pricing)

- Purchase special tags/bags bins. Each tag/bag/bin carries the same price.
- Allocate specific no. of free tags/bags and additional tags/bags to be purchased at a per bag/tag rate.
- Subscribe to bins and to pay a monthly fee based on the volume of bin.
- Weigh waste at point of collection and charged according to the actual weight collected.
- Costs for publicity, tag printing/bag/bin manufacturing, distribution, administration, enforcement, and interacting with the public.

# Extended Producer Responsibility (EPR) schemes

- Producers / importers of certain products /packaging are involved in managing the waste resulting from their products
  - electronic equipment, lubricant oils, batteries, end-of-life vehicles
- Provides incentives to reduce wastes at the source
- Promotes product designs sensitive to responsible disposing of related waste
- Levy a charge on producers to fund publicly managed collection and recycling (Advanced recycling fees or product taxes).

# Deposit refund system

- A combination of tax and subsidy
- Deposit is paid by customers for potentially polluting products, when pollution is avoided by returning the products /residuals, a refund paid back.
  - In SL common with bottles
  - deposit of a 20 liter refillable plastic water bottle is approximately LKR 250
- Does not create revenues for the state, but ensures valuable/potentially hazardous materials (e.g. car batteries) are not disposed of, but rather recovered/recycled/treated appropriately.
- Rewards good environmental behavior.
- Success of deposit-refund systems depends on the infrastructure for segregated waste collection.

# Private sector financing

- Lease :
  - pvt co. is entitled to operate a service with assets owned by the LA.  
private co. is responsible for fee collection to cover the operation and maintenance costs.
- Build Own Operate (BOO) :
  - Pvt. party is responsible for design, construction, operation, services and financing of the investment
- Build Own Operate Transfer (BOOT) :
  - Similar to BOO + transfers the asset to the LA at the end of the contract period.
- Build Operate Transfer (BOT):
  - Similar to BOOT, but no ownership for the pvt party during the period of the contract.

# Results based financing

- International Institutions provide financial payments or in-kind rewards to a service provider conditional on the recipient undertaking a set of pre-determined actions or achieving a pre-determined performance goal.
- Does not always require more staff/ vehicles/equipment/ bigger landfill space - can maximize the use of existing resources
- Effective tool to attract the private sector and support PPPs, particularly in fragile situations
  - Nepal and West Bank has successfully implemented RBF

# What would work in SL ?

- One size does not fit all countries
- Important to understand the context and adopt a strategy that best suits Sri Lanka
- Sri Lanka would benefit from a combination of financing strategies that share the responsibility between consumers, producers, and state.
- Taiwan was successful in addressing its waste management issues in a model that involved
  - public awareness
  - shared responsibility between users and producer
  - Strong institutional framework
- SL can draw from Taiwan's experience to develop a sustainable financial solution for MSWMS.

# What would work in SL ?

- PAYT scheme as in Taiwan to assign responsibility to users,
  - general waste : pre-purchased special garbage bags
  - recyclables and organic waste: FOC to incentivize sorting waste and save on garbage bags
- Similar pilot project in Boralasgamuwa PS (Western Provincial Council)
  - perishable: collected FOC, twice a week
  - mixed waste: pre-purchased special g garbage bags, once in 2 weeks, cost LKR 40 per 20 liter bag

# What would work in SL ?

- Large proportion of poor households
  - may not be able to cope with the additional cost for waste collection
- Traditionally provided FOC in most areas
  - Low political will , public resistance
- 'User fees might better serve, and be designed for, behavior change than for cost recovery' (Ren & Hu, 2014).
- Pricing : below market rate, but large enough to make consumers conscious about reducing waste generation



# What would work in SL ?

- A modest fee for MSWMS is prudent for Sri Lanka, until the LAs are capable of :
  - improving the cost efficiency and transparency
  - gaining public trust and support to tackle the bigger challenge of cost recovery
- Willingness to Pay (WTP) in SL LKR 70.50 - 111.40 per month (survey in 2015/16)
- Complement the user fees with state financial allocations

# What would work in SL ?

- Littering and illegal dumping already very high in Sri Lanka
  - user fees may increase these issues
- Increase awareness to discourage littering/illegal dumping
- Improve monitoring violation/implementation of penalties
- Pursue proposed support from the tri-forces and the police for monitoring waste disposal
- Emulate Taiwan's on policy no curbside waste/ responsible for own trash
  - restricting residents to place trash out for collection
  - 1st time offenders : warned
  - 2nd time + offenders : public posting of the video footage + fine up to \$200

# What would work in SL ?

- Introduce Extended producer responsibility systems
- Taiwan : National Recycling Fund, directly financed by manufacturers and importers seeking to do business in Taiwan
- Fees : cost of collecting/recycling their product - revenues generated by selling any recovered resources
- May result in higher prices if producers pass the responsibility back to the user
- SL can initially provide the producers the option of voluntary participation with possibility for eligibility for incentives.

# What would work in SL ?

- Existing private sector participation
  - CMC: Burns Environmental Technologies (Pvt.) Limited (BETL) , Abans Environmental Services (AES).
  - WMA of the WPC: 22-year Concession Agreement between the Fairway Waste Management (Pvt) Ltd to create a sustainable model for MSW processing (Karadiyana in the WP).
  - LAs in Gampaha and Kurunegala districts : Insee Ecocycle in Puttalam, segregated non-recyclable plastic and polythene waste is `co-processed' in the cement plant
- Private sector participating has resulted in LAs collecting more waste due to channeling more resources (vehicles, technology).
- Needs political will/responsibility to create a conducive environment for private partnership.

# Finally,

- Sustainable financing of MSWMS is a long term goal, may not provide immediate solutions for issues of cost recovery
- Important to be realistic about
  - capabilities
  - challenges
  - demands of the rapidly urbanizing population
  - growth trajectory of the economy
- Instead of a single method, Sri Lanka would benefit from a combination of financing strategies that share the responsibility between consumers, producers as well as the state.



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