



Training Program on Municipal Solid Waste Characterization Survey

Expert Briefing by Sycom Projects Consultants Private Limited



OBJECTIVE OF WASTE CHARACTERIZATION

- To understand what is there in the city's waste in terms of **materials and Physical and Chemical Ingredients**



WHY SUCH A CHARACTERIZATION SURVEY ?

- Each City/Town is different and will have different waste composition and hence needs such characterization for processing of waste – like composting type, recycling types, energy recovery, Bio-gas or any other treatment



WHEN SUCH A WASTE CHARACTERIZATION SURVEY IS DONE?

- When a city/Town wants to prepare a comprehensive plan or Detailed Project Report to **understand waste generation and composition and what infrastructure is required for the present and future, characterization is done.**





HOW IS THE WASTE CHARACTERIZATION SURVEY DONE ?

STAGE 1

PRE- SURVEY ACTIVITIES:

1. Identification and grouping of survey sites
2. Sampling Plan Preparation
3. Prepare and identify material requirements
4. Conduct Orientation of Surveyors
5. Sending of Communication Letters to Municipalities
6. Waste Sorters and Bags/Containers



STAGE 2

- Survey for 3-5 Days depending upon requirement and time.
- Informing – to be Surveyed households, commercials, institutions etc.
- For 3-5 days all waste is collected and stored in a safe place.
- After 3-5 days all waste is sorted and weighed.
- From day 1, if it is mixed waste could be stored separately to prevent rotting/smelling.
- Waste is sorted in organic, recyclables, residual and special waste.
- All waste is weighed and data entered.

STAGE 2 - Continued

- All waste separately weighed and put into fixed size containers to understand volume

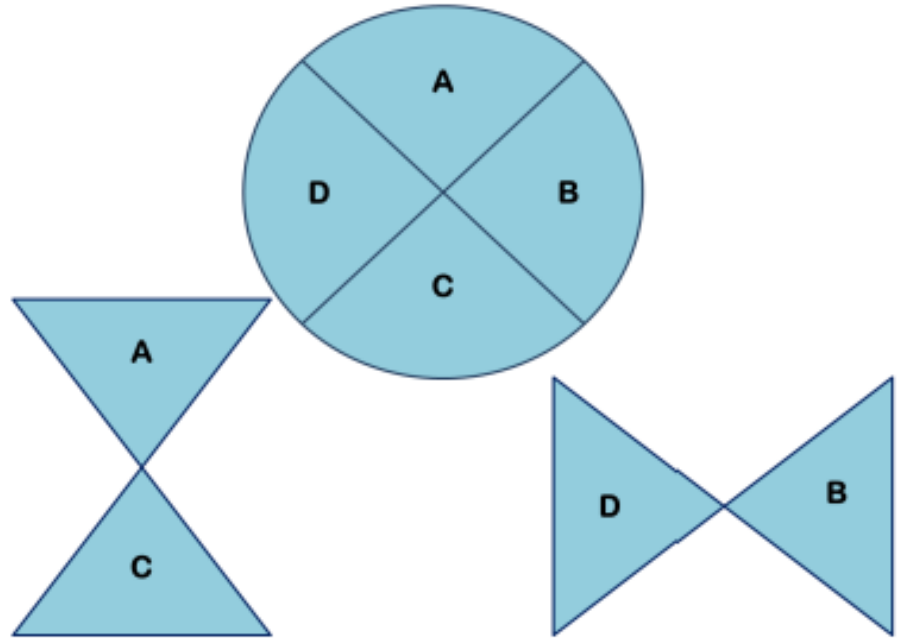
NEXT

- All the waste is mixed thoroughly
- Make a Cone of the mixed waste
- Use Quartering Method until required quantity of waste is ready for sample
- All Collected waste material is then properly disposed.



WHAT IS CONING AND QUARTERING?

- Coning and quartering is a method used for analytical chemical analysis to reduce the sample size without creating a systematic bias



AN EXAMPLE OF DATA COLLECTED IN A PHILIPPINES

Table 3. Municipal waste composition % share at all sources

Major sources	Total waste generation		Wastes composition				
	Kg/day	%	Compostable	recyclables	residuals	special	Fine residuals
Households	195.02	42.07	125.3	45.96	18.81	2	2.95
Institutions (schools, government offices and health center)	151.24	32.62	59.04	55.10	32.90	0.5	3.7
Commercial	63.45	13.68	28.00	17.70	12.40	1.4	4.2
Public market	53.9	11.63	21.60	16.90	10.30	0.9	3.95
TOTAL	463.61		233.94	135.66	74.41	4.80	14.80
% of Total WACS		100.00	50.46	29.26	16.05	1.04	3.19

WASTE COMPOSITION - EXAMPLE

Material classification	Calculated Amount (kg)	%*
Paper	6.00	3.470
Glass	1.50	0.868
Metals	4.20	2.429
Plastics	12.10	7.000
Textiles	4.00	2.313
Non-food Total	37.90	21.920
Food and Putrescibles	53.30	30.827
Misc-combustibles	25.90	14.980
Misc. Non-combustibles	26.60	15.384
Household hazardous waste	1.40	0.809
Total	172.90	100

Putrescibles = biodegradable material, *Percentage (by weight in kg)



STAGE 3 - DATA CONSOLIDATION AND ANALYSIS

- Tons per day generated by total population
- In Cubic Meters
- Per day in kilogram by Households/Shops/Institutions/Markets etc
- And same by composition like Biodegradable, Recyclables, Residuals, Specials waste (E waste, Bio Medical waste or any other category)

STAGE 3 - DATA CONSOLIDATION AND ANALYSIS - Continued

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THANK YOU.. !

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