

15th July, 2014

How much solid waste are Port Moresby Citizens generating?

1. Background and Objectives

Since the J-PRISM project commenced in February 2011, WMD has conducted three waste audits. The objectives of the waste audits are to understand the total waste amount and analyze the contents to determine the waste composition. WMD will use this basic information in order to prepare and implement sustainable programs for promoting recycling, collecting and transporting the solid waste, and disposing of the solid waste at the landfill.

2. Audit Implementation Method

The audits are implemented with the cooperation of residents, offices, hotels, supermarkets, wholesalers and retail stores. A number of households representing low, middle and high income levels, and commercial concerns are selected.

The waste audit team conducts interviews with the selected households and commercial concerns and collects information regarding their solid waste discharge practices, the number of household members, and employees and commercial activity area for the commercial concerns.

These households and commercial concerns taking part in the waste audit give the WMD audit team the waste they are generating every day for one full week. The WMD audit team weighs the waste daily to estimate the amount of waste generated by each resident and commercial activity. The team also analyzes samples of the waste in order to determine the waste composition; i.e. the amounts of food wastes, papers, plastic, metals, glass, cardboard, etc.



Weighing of paper and cardboard waste



Analysis of waste components

3. Summary of Results

3.1 Waste Unit Generation Rates

The results of the domestic unit generation rates in kilograms per person per day (kg/capita/day) are shown in the Table 1.

Table 1 Unit Generation Rates (2011 – 2014)

Year	Low income	Middle income	High income	Sampling location
2011	0.49	0.37	0.57	MNW
2013	0.23	0.38	0.38	MNE
2014	0.29	0.36	0.43	MS
Average	0.34	0.34	0.46	
	Domestic waste unit generation rate 0.38 kg/person/day			

The general trend is that high income people buy more and waste more, and NCDC is no exception as we can note from the audit results. If we consider that the estimated population in of NCDC is 386,400 persons; this means that in one day this population produces 146 tons of domestic waste.

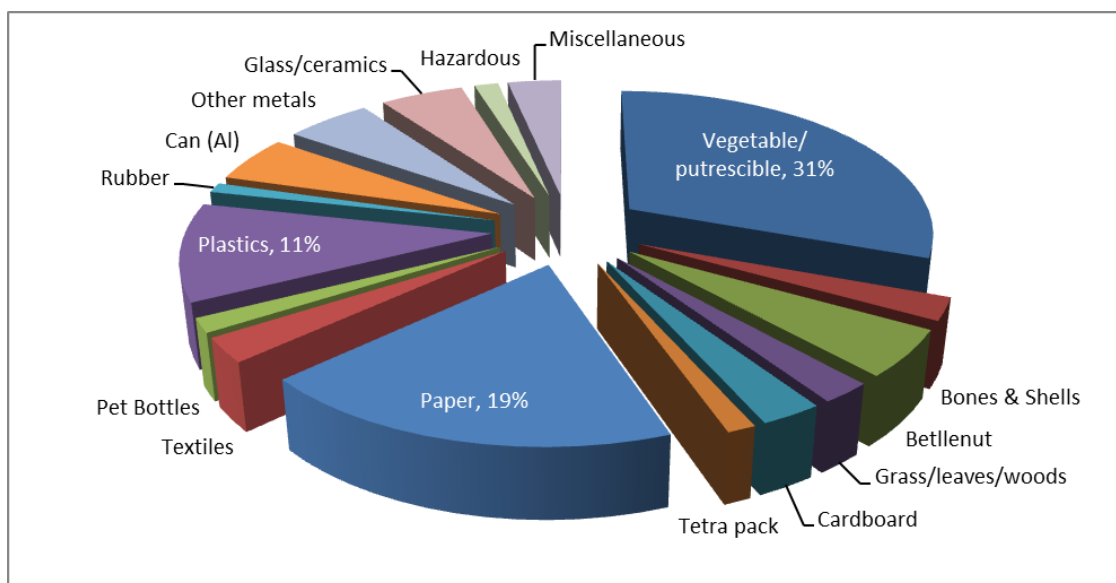
In addition to the domestic waste, there is also the commercial waste which is being produced by the restaurants, hotels, offices, shops, etc. in the city. The waste audit survey shows that for each 1m² of commercial space, a daily amount of 0.085 kilograms of commercial waste was generated. Considering a commercial area of 3m² per resident, we can estimate that in one day 99 tons of commercial wastes are produced in NCDC. Therefore the total solid waste we are generating in the city every day is about 250 tons.

You may have noticed the yellow and green waste collection trucks (compactors) that have been collecting the waste in NCDC since last year. We would need to transport about 65 loads with these trucks every day to transport this total amount of waste to the disposals site.

3.2 Waste Composition

The following graph in Figure 1 shows the composition of the domestic waste.

Figure 1 Materials Composition of Domestic Waste



In NCDC we are throwing away large amounts of kitchen waste (45 tons), followed by paper (27 tons) and plastics (16 tons). While many of the citizens of NCDC enjoy chewing the Bettlenut, about 8 tons of Bettlenut are produced every day by them.

We need to make more efforts to minimize food, paper and plastics wastes.

4. Conclusion

The unit generation rate of total domestic and commercial waste in NCDC, at 0.63 kilogram/person/day is still within the acceptable norms (in the US and some countries in Europe the respective value is about 2.0 kilogram/person/day and in Japan it is over 1.0 kilogram/person/day).

However, as the residents of NCDC improve their economic conditions, and the population increases the waste amount will grow. It is necessary for all of us in the national capital to do our best to reduce the amounts of waste we are generating through embracing better consumption habits, and realizing that we all need to do our best to protect our environment and conserve our precious resources.

WMD would like to thank all the citizens of Port Moresby that cooperated with us to implement the waste audit survey. This survey is one of the activities NCDC is implementing under the Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management in Pacific Island Countries (J-PRISM) implemented by Japan International Cooperation Agency (JICA).

For further information on the waste audit survey you may contact Mr. Ronnie Ranu and/or Ms. Vivianne Morofa, Officers at WMD.