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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
Ministry of Home Affairs, Provincial Councils and Local Government
Democratic Socialist Republic of Sri Lanka

THE STUDY ON IMPROVEMENT OF SOLID WASTE MANAGEMENT IN SECONDARY CITIES IN SRI LANKA

FINAL REPORT VOLUME Ⅲ SUPPORTING REPORT

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DECEMBER 2003

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This is Supporting Report.

In this report, the project cost is estimated using the September 2003 prices and at an exchange rate of 1 US$ = 117.02 Japanese Yen = 95.28 Rupees

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Chapter A Waste Amount and Composition Survey

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A.1 Introduction of the Field Surveys

The following field surveys conducted in the Study are described in this chapter:

1) Waste Discharge Rate Survey, conducted in Kandy and Matale
2) Waste Composition Survey, conducted in Kandy and Matale
3) Composition Survey of Waste Carried on Collection Vehicles, conducted in seven model towns
4) Waste Transportation Amount Survey

A.2 Waste Discharge Rate Survey

A.2.1 Methodology

Because it is generally accepted that waste amount and composition are related to income level, the waste amount survey was undertaken on three categories of waste, "High", "Middle" and "Low" income, each one representative of a particular income level.

The number of points was selected to ensure that the accumulated size of the working sample would be large enough to give reliable and representative results. On the other hand, the number of points that could be selected was limited somewhat by available resources.

The next step was to select households representative of the high, middle and low income households.

In the days leading up to the survey, the survey team visited the selected households to request cooperation from the residents for the survey. A questionnaire was filled out to obtain basic information, such as the number of people that would be residing there during the survey period, whether they had a regular collection service, etc.

To ensure that the waste discharged would be the daily generation amount, the 1st day of the survey was used as a trial. Households had the chance to discharge any waste that may have accumulated. The trial also helped in sorting out other problems.

Each day between 7:00 a.m. and 11:00 a.m. for seven consecutive days (i.e., the 2nd day to the 8th day of the survey period) the survey team visited every one of the 90 households to collect bags of waste. The bags were immediately tied with different colour string to identify the generation source, and then weighed and recorded.

A.2.2 Kandy

a. Sampling Points

The sampling points are summarised below.

Table A-1: Sampling Areas and No. of Points in Kandy

Category	Sampling area	No. of Points
High Income	Siyabalagastanna, Mulgampola	30
Middle Income	Katugastota, Ampitiya	30
Low Income	Mahaiyawa, Suduhumpola	30
Total		90

b. Results on Discharge Rate of Residential Waste

The results of the waste amount survey are summarized below.

Table A-2: Results of waste amount survey in Kandy

Municipality	Category	Income Range	Waste Amount (grams/capita/day)
Kandy	High Income	more than Rs.	666.5
	Middle Income		465.6
	Low Income		368.1
Average			502.1

A.2.3 Matale

a. Sampling Points

The sampling points are summarised below.

Table A-3: Sampling Areas and No. of Points in Matale

Category	Sampling area	No. of Points
High Income	Malwatta, Nagolla Road, Pullayar kovil Road, School Place	30
Middle Income	Gongawela, National Housing Scheem	30
Low Income	Mahadewata, Higgolla	30
Total		90

b. Results on Discharge Rate of Residential Waste

The results of the waste amount survey are summarized below.

Table A-4: Results of waste amount survey in Kandy

Municipality	Category	Income Range	Waste Amount (grams/capita/day)
Kandy	High Income	more than Rs.	447
	Middle Income		413
	Low Income		407
Average			422

A.3 Waste Composition Survey

A.3.1 Methodology

a. Type of Waste Analysed

The waste composition analysis of uncompacted raw waste was conducted for the following five types of waste:

- Three types of household waste (high, middle and low income)
- Two types of market waste

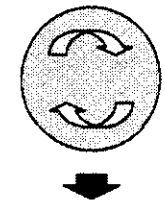
b. Sampling Method

All samples for the waste composition analysis were taken from the waste samples collected for the waste amount survey.

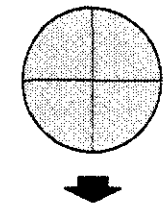
c. Quartering method to reduce the sample amount

Collected samples were mixed together resulting in a sample size of 40 to 50 kg. Then the volume of the mixture was reduced as described below until the sample size was approximately 30 to 40 litres. This process was conducted for every type of waste.

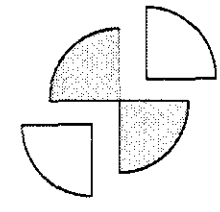
Step 1 "*Mixing*": If the waste contained large-sized items, those items were cut into smaller pieces and mixed again.



Step 2 "*Dividing*": Once the waste was well mixed, it was divided into four segments of approximately the same size.



Step 3 "*Reduction*": The two segments of waste diagonally opposite each other were removed and the remaining waste was mixed again.



The above steps were repeated until the volume of the remaining waste had been reduced to approximately 30 to 40 litres.

d. Physical Composition Analysis

The physical composition was measured on a wet basis (raw state, before drying). The sample was then divided into the following 11 components, and the weight of each measured.

- Kitchen waste
- Paper
- Textile
- Soft plastic
- Hard plastic
- Grass and wood
- Leather and rubber
- Metal
- Glass
- Ceramic and stone
- Others (soil, etc.)

The results of the physical composition are presented as percentages.

e. Waste Bulk Density

The waste sample was then put into a calibrated plastic bucket and dropped three times from a height of 30 cm. The volume and weight were then recorded. Subsequently, the bulk density of the waste sample was calculated with the following formula.

$$Bulk\ Density\ (kg/litre) = \frac{Weight\ of\ Waste\ in\ Original\ Condition\ (kg)}{Volume\ of\ Waste\ (litre)}$$

f. Moisture Content

After measuring the weight on a wet basis, the samples were dried for 24 hours in an oven (105°C) and then the weight on a dry basis of each item was measured again. Subsequently, the moisture content was calculated by the following formula.

$$Moisture\ Content\ (\%) = \frac{Original\ Weight\ (g) - Dry\ Weight\ (g)}{Original\ Weight\ (g)} \times 100$$

A.3.2 Kandy

The physical characteristics of household waste and market waste were analysed for seven consecutive days from June 15th to June 21st (same as waste amount survey). The results of the waste composition analysis are summarized below.

Table A-5: Results of Physical Composition Analysis in Kandy

Unit: %

Components	Residential Waste				Market Waste			Vehicle Collection Waste
	High Income	Middle Income	Low Income	Average	Market A	Market B	Average	
Kitchen waste	69.28	64.49	77.11	71.11	74.14	83.47	79.67	58.21
Grass & wood	12.17	14.42	7.81	11.04	16.82	12.69	14.37	12.31
Paper	7.50	8.18	4.51	6.50	4.18	1.54	2.62	11.95
Textile	1.03	1.25	1.11	1.12	2.22	0.30	1.08	1.40
Soft plastic	3.99	5.68	2.76	3.94	1.80	0.44	0.99	7.28
Hard plastic	1.13	0.88	0.62	0.87	0.12	0.01	0.05	0.66
Leather & rubber	0.19	0.83	0.34	0.41	0.00	0.00	0.00	0.68
Metal	0.96	1.24	0.64	0.91	0.14	0.03	0.08	0.84
Glass	0.86	1.35	1.07	1.08	0.11	0.00	0.04	1.13
Ceramic & stone	2.76	1.36	3.88	2.84	0.47	1.49	1.08	5.13
Others	0.10	0.32	0.14	0.18	0.00	0.01	0.01	0.40
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Bulk Density	0.32kg/l	0.32kg/l	0.38kg/l	0.35 kg/l	0.34kg/l	0.33kg/l	0.32kg/l	0.30kg/l
Moisture content	59%	60%	66%	-	75%	76%	-	52%

Remarks: Market A: Kandy Central Market
Market B: Menikkumbura Market Complex

Table A-6: Organic and In-organic Ratio

unit: %

Components	Residential Waste			Market Waste		Vehicle Collection Waste
	High Income	Middle Income	Low Income	Market A	Market B	
Organic wastes	81.45	78.91	84.93	90.96	96.16	70.52
In-organic wastes	18.55	21.09	15.07	9.04	3.84	29.48

Table A-7: Inorganic Recyclables and Inorganic Non-recyclables Ratio

unit: %

Components	Residential Waste			Market Waste		Vehicle Collection Waste
	High Income	Middle Income	Low Income	Market A	Market B	
Organic wastes						
In-organic wastes						

A.3.3 Matale

The physical characteristics of household waste and market waste were analysed for seven consecutive days from July 17th to June 21st (same as waste amount survey). The results of the waste composition analysis are summarized below.

Table A-8: Results of Physical Composition Analysis in Matale

Unit: %

Components	Residential Waste				Market Waste			Vehicle Collection Waste
	High Income	Middle Income	Low Income	Average	Market A	Market B	Average	
Kitchen waste	68.67	63.39	67.51	66.45	72.02	62.76	68.52	61.29
Grass & wood	12.33	20.79	13.78	15.74	10.37	13.62	11.61	18.14
Paper	9.01	4.83	7.12	6.93	9.72	12.34	10.72	6.40
Textile	0.92	1.46	1.64	1.35	0.83	2.61	1.51	1.07
Soft plastic	2.45	2.46	3.40	2.77	3.53	4.30	3.82	3.94
Hard plastic	1.18	0.52	0.80	0.82	0.14	0.51	0.28	0.41
Leather & rubber	0.28	0.56	0.35	0.40	0.05	0.88	0.36	1.11
Metal	0.49	0.35	0.28	0.37	0.12	0.29	0.18	0.42
Glass	2.49	1.19	0.27	1.30	0.52	0.38	0.47	0.36
Ceramic & stone	1.73	4.11	4.28	3.40	2.48	2.03	2.31	6.60
Others	0.46	0.34	0.58	0.46	0.18	0.29	0.22	0.26
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Bulk Density	0.32kg/l	0.25kg/l	0.31kg/l	0.29kg/l	0.38kg/l	0.32kg/l	0.35kg/l	0.33kg/l
Moisture content	47%	49%	52%	-	43%	51%	-	55%

Remarks: Market A: King Street Central Market
Market B: Gongawela Market Area

Table A-9: Organic and In-organic Ratio

unit: %

Components	Residential Waste			Market Waste		Vehicle Collection Waste
	High Income	Middle Income	Low Income	Market A	Market B	
Organic wastes	80.99	84.18	81.29	82.44	76.38	79.43
In-organic wastes	19.01	15.82	18.71	17.56	23.62	20.57

Table A-10: Inorganic Recyclables and Inorganic Non-recyclables Ratio

unit: %

Components	Residential Waste			Market Waste		Vehicle Collection Waste
	High Income	Middle Income	Low Income	Market A	Market B	
In-organic Recyclables	16.54	10.81	13.52	14.86	20.43	12.6
In-organic Non-recyclables	83.46	89.19	86.48	85.14	79.57	87.40

A.4 Composition of Waste Carried by Collection Vehicles

Table A-11: Waste Composition Results

unit:%

Town / Component	Badulla	Chilaw	Gampaha	Kandy	Matale	Negombo	Nuwara Eliya
Kitchen waste	64.29	36.60	57.27	58.21	61.29	45.57	71.61
Grass & wood	14.10	29.70	15.25	12.31	18.14	24.72	5.74
Paper	10.84	6.75	14.35	11.95	6.40	8.85	11.12
Textile	1.31	1.34	1.46	1.40	1.07	3.50	1.22
Soft plastic	3.09	3.11	6.50	7.28	3.94	3.98	5.42
Hard plastic	0.29	1.00	1.25	0.66	0.41	0.76	0.26
Leather & rubber	0.44	0.13	0.36	0.68	1.11	0.94	0.14
Metal	0.80	0.81	0.47	0.84	0.42	0.45	0.71
Glass	1.82	0.25	1.35	1.13	0.36	0.82	0.92
Ceramic & stone	2.79	12.13	1.18	5.13	6.60	8.41	2.56
Others	0.23	8.18	0.55	0.40	0.26	2.00	0.30
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Bulk Density	0.31kg/l	0.20kg/l	0.15kg/l	0.30kg/l	0.33kg/l	0.26kg/l	0.39kg/l
Moisture content	no survey	no survey	no survey	52%	55%	no survey	no survey

A.5 Waste Transportation Amount Survey

The average amounts of waste carried by each type of waste collection vehicle were determined by actually weighing them ten times by a weighbridge.

Type of Collection Vehicle	Volume Capacity	Average Transportation Amount
4WT Tractor and Trailer	6.26 m^3	2.428 tons/trip
Small Compactor	4.00 m^3	2.435 tons/trip
Large Compactor	8.00 m^3	4.011 tons/trip

A.6 Estimation on the Lower Calorific Values of Waste

The lower calorific values of wastes were estimated based on the waste physical composition data obtained by the waste composition survey during the Study using one of the estimation formulas.

A.6.1 Estimation Method Adopted

The following method was used for the estimation:

Proximate Analysis, Heat Measurement and Elemental Analysis of Waste, Nobuhisa Watanabe, Journal of the Japan Society of Waste Management Experts, Vol. 11, No.6 (November 2000)

The lower calorific value was calculated by adding the estimated values of the moisture amount of each matter, volatile solids amount, ash content amount, high calorific value, and moisture content including hydrogen, which were identified based on the reference data shown in Watanabe's report.

Table A-12 shows the data used, which was taken from the data proposed in the report prepared by the committee of experiments and tests of waste in the Japan Society of Waste Management Experts. However, the unit calorie data of kitchen waste in Japan, approximately 4,000 kcal/kg, seemed too high for the kitchen waste in Sri Lanka[1], so the representative data shown in "Integrated Solid Waste Management" were used instead.

Table A-12: Representative Data

	Moisture	Ash	Moisture	Calorific value	Hydrogen
	Wet basis	Dry basis	Dry basis	Dry basis	Wet basis
	%	%	%	kcal/kg	%
Kitchen waste	75.38	18.50	7.54	1,110*1	5.81
Paper	15.69	11.23	4.41	3,949	5.88
Textile	16.14	6.90	3.25	4,709	6.27
Soft plastic	16.25	9.46	1.54	7,641	9.81
Hard plastic	16.25	9.46	1.54	7,641	9.81
Grass & wood	42.63	6.59	5.39	4,347	5.40
Leather & rubber	8.57	12.29	0.00	6,179	6.91
Metal	0.00	100.00	0.00	0	0.00
Glass	0.00	100.00	0.00	0	0.00
Ceramic & stone	0.00	100.00	0.00	0	0.00
Others*2	15.00	41.82	3.98	2,931	4.00*3

*1: Integrated Solid Waste Management p84
*2: "Others" means materials passed through a screen size of 5mm
*3: These data were proposed by Watanabe

Note: The data enclosed by thicker line were assumed for this estimation.

[1] Kitchen waste in Sri Lanka contains higher moisture due to their major food of curry.

a. Example Calculation of Waste Calorific Values

The following table shows the calculation of the calorific value of waste in Kandy.

Table A-13: Example of Calculation

	Percentage	Estimated moisture contents		Estimated volatile solids	Estimated Ash contents		Estimated higher calorific value		Estimation of moisture contents 水素分由来		予め存在する水	
		Moisture	Moisture	Volatile solids	Ash	Ash	Unit calory*2	Calorific	Hydrogen	Hydrogen	Hydrogen	Hydrogen
	%	%	g/kg*1	g/kg*1	%	g/kg*1	kcal/kg	kcal	%	g/kg*1	%	g/kg*1
Kitchen waste	58.21	**75.38**	438.8	143.3	**18.50**	26.5	**1,110**	159	**5.81**	8.33	**7.54**	10.80
Paper	11.95	**15.69**	18.7	100.8	**11.23**	11.3	**3,949**	398	**5.88**	5.93	**4.41**	4.45
Textile	1.40	**16.14**	2.3	11.7	**6.90**	0.8	**4,709**	55	**6.27**	0.73	**3.25**	0.38
Soft plastic	7.28	**16.25**	11.8	61.0	**9.46**	5.8	**7,641**	466	**9.81**	5.98	**1.54**	0.94
Hard plastic	0.66	**16.25**	1.1	5.5	**9.46**	0.5	**7,641**	42	**9.81**	0.54	**1.54**	0.08
Grass & wood	12.31	**42.63**	52.5	70.6	**6.59**	4.7	**4,347**	307	**5.40**	3.81	**5.39**	3.81
Leather & rubber	0.68	**8.57**	0.6	6.2	**12.29**	0.8	**6,179**	38	**6.91**	0.43	**0.00**	0.00
Metal	0.84	**0.00**	0.0	8.4	**100.00**	8.4	**0**	0	**0.00**	0.00	**0.00**	0.00
Glass	1.13	**0.00**	0.0	11.3	**100.00**	11.3	**0**	0	**0.00**	0.00	**0.00**	0.00
Ceramic & stone	5.13	**0.00**	0.0	51.3	**100.00**	51.3	**0**	0	**0.00**	0.00	**0.00**	0.00
Others	0.41	**15.00**	0.6	3.5	**41.82**	1.5	**2,931**	10	**4.00**	0.14	**3.98**	0.14
	100.00	-	526.4	473.6	-	122.9	-	1,475	-	25.89		20.60
										= 18/2		
									Moisture	233		547

High solid calorific value = 1,475 kacl/kg

Lower waste calorific value = 1.475−0.6(233+547) = 1,007 kcal/kg

Note

*1: The amount included in 1 kg of waste.

*2: The calorific value of waste per kg of material.

b. *Estimation of Lower Calorific Value*

b.1 Waste in Kandy

Table A-14: Estimation of Higher and Lower Calorific Values of Waste in Kandy

Components		Residential Waste			Market Waste		Vehicle Collection Waste
		High Income	Middle Income	Low Income	Market A	Market B	
Kitchen waste	(%)	69.28	64.49	77.11	74.14	83.47	58.21
Paper	(%)	7.50	8.18	4.51	4.18	1.54	11.95
Textile	(%)	1.03	1.25	1.11	2.22	0.30	1.40
Soft plastic	(%)	3.99	5.68	2.76	1.80	0.44	7.28
Hard plastic	(%)	1.13	0.88	0.62	0.12	0.01	0.66
Grass & wood	(%)	12.17	14.42	7.81	16.82	12.69	12.31
Leather & rubber	(%)	0.19	0.83	0.34	0.00	0.00	0.68
Metal	(%)	0.96	1.24	0.64	0.14	0.03	0.84
Glass	(%)	0.86	1.35	1.07	0.11	0.00	1.13
Ceramic & stone	(%)	2.76	1.36	3.88	0.47	1.49	5.13
Others	(%)	0.13	0.32	0.15	0.00	0.03	0.41
Total	(%)	100.00	100.00	100.00	100.00	100.00	100.00
Bulk Density	(kg/l)	0.32	0.32	0.38	0.34	0.33	0.30
Moisture content	(%)	59	60	66	75	76	52
Moisture estimated	(%)	60	57	63	64	69	53
High calorific value	kcal/kg	1,120	1,330	840	970	640	1,480
Lower calorific value	**kcal/kg**	**630**	**840**	**350**	**460**	**120**	**1,010**

b.2 *Waste in Matale*

Table A-15: Estimation of Higher and Lower Calorific Values of Waste in Matale

Components		Residential Waste			Market Waste		Vehicle Collection Waste
		High Income	Middle Income	Low Income	Market A	Market B	
Kitchen waste	(%)	68.67	63.39	67.51	72.02	62.76	61.29
Paper	(%)	9.01	4.83	7.12	9.72	12.34	6.40
Textile	(%)	0.92	1.46	1.64	0.83	2.61	1.07
Soft plastic	(%)	2.45	2.46	3.40	3.53	4.30	3.94
Hard plastic	(%)	1.18	0.52	0.80	0.14	0.51	0.41
Grass & wood	(%)	12.33	20.79	13.78	10.37	13.62	18.14
Leather & rubber	(%)	0.28	0.56	0.35	0.05	0.88	1.11
Metal	(%)	0.49	0.35	0.28	0.12	0.29	0.42
Glass	(%)	2.49	1.19	0.27	0.52	0.38	0.36
Ceramic & stone	(%)	1.73	4.11	4.28	2.48	2.03	6.60
Others	(%)	0.45	0.34	0.57	0.22	0.28	0.26
Total	(%)	100.00	100.00	100.00	100.00	100.00	100.00
Bulk Density (kg/l)		0.32	0.25	0.31	0.38	0.32	0.33
Moisture content (%)		47	49	52	43	51	55
Moisture estimated (%)		59	58	59	61	56	56
High calorific value	kcal/kg	1,090	1,140	1,130	1,060	1,390	1,220
Lower calorific value	**kcal/kg**	**610**	**660**	**650**	**560**	**900**	**750**

b.3 Estimated Calorific Values of Waste in Each Model Town

The physical composition of waste samples taken from waste collection vehicles was surveyed at each model town in the Study. However, the moisture contents of these samples were not analysed. Under these conditions, the lower calorific values of waste were estimated.

Table A-16: Estimated Calorific Values of Waste in Each Model Town

unit:%

Town / Component	Badulla	Chilaw	Gampaha	Kandy	Matale	Negombo	Nuwara Eliya
Kitchen waste	64.29	36.60	57.27	58.21	61.29	45.57	71.61
Grass & wood	14.10	29.70	15.25	12.31	18.14	24.72	5.74
Paper	10.84	6.75	14.35	11.95	6.40	8.85	11.12
Textile	1.31	1.34	1.46	1.40	1.07	3.50	1.22
Soft plastic	3.09	3.11	6.50	7.28	3.94	3.98	5.42
Hard plastic	0.29	1.00	1.25	0.66	0.41	0.76	0.26
Leather & rubber	0.44	0.13	0.36	0.68	1.11	0.94	0.14
Metal	0.80	0.81	0.47	0.84	0.42	0.45	0.71
Glass	1.82	0.25	1.35	1.13	0.36	0.82	0.92
Ceramic & stone	2.79	12.13	1.18	5.13	6.60	8.41	2.56
Others	0.23	8.18	0.55	0.40	0.26	2.00	0.30
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Bulk Density	0.31kg/l	0.20kg/l	0.15kg/l	0.30kg/l	0.33kg/l	0.26kg/l	0.39kg/l
Moisture content	no survey	no survey	no survey	52%	55%	no survey	no survey
Moisture Content (Calculation)	57.0	43.4	53.5	52.6	56.0	48.0	59.4
Higher Calorific Value (kcal/kg)	1,190	1,590	1,600	1,480	1,220	1,580	1,140
Lower Calorific Value (kcal/kg)	**710**	**1,190**	**1,120**	**1,010**	**750**	**1,140**	**640**

A.6.2 Examination on the Estimated Results

a. Actual moisture content and estimated moisture content

The moisture content of waste samples only in Kandy and Matale were measured in the Study. Then the relationship between the estimated and actual moisture contents were plotted in a correlation diagram. It implies that both data of Kandy are well correlated but in the data of Matale the estimation data tends to be higher, as shown in the figure.

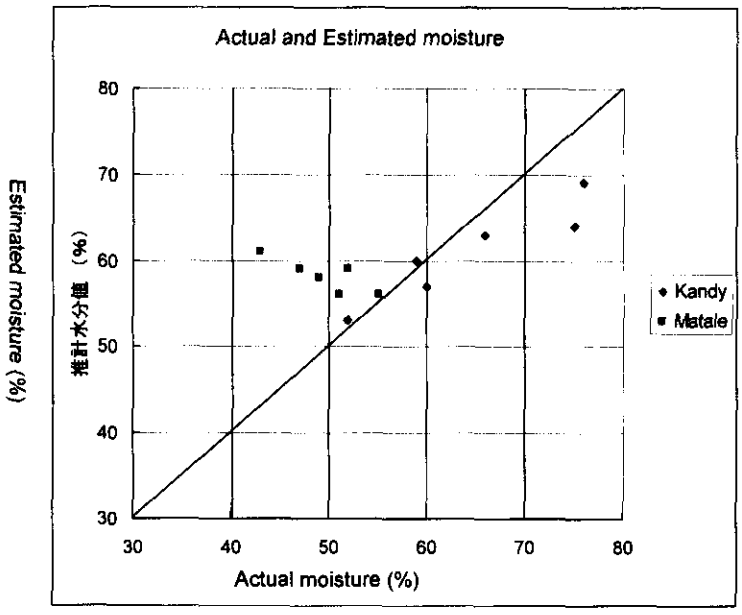


Figure A-1: Correlation of Actual and Estimated Moisture

This correlation diagram implies the following:

- The moisture content of waste in Kandy is more than that in Japan.
- The moisture content of waste in Matale is less than that in Japan.

This fact suggests that both data are quite different from the data of waste in Japan. The lower calorific value of waste in Matale was analysed by adjusting the data to coincide the estimated moisture content data with the actual moisture content data. The moisture content ratios of kitchen waste and grass/wood wastes were reduced by 10% and 5% respectively, and the adjusted data are shown in Table A-17. The fact that the differences among these data decreased suggests that the kitchen waste and grass and wood are quite wetter than those in Japan. As for the other components, the data of waste in Japan shows they are generally drier than those in Sri Lanka. The deviation of data can be attributed to the difference in the average moisture content of wastes.

Table A-17: Adjusted Calorific Values

Components		Residential Waste			Market Waste		Vehicle Collection Waste
		High Income	Middle Income	Low Income	Market A	Market B	
Measured	Moisture content (%)	47	49	52	43	51	55
Before adjustment	Estimated moisture (%)	59	58	59	61	56	56
	High calorific value kcal/kg	1,090	1,140	1,130	1,060	1,390	1,220
	Lower calorific value kcal/kg	610	660	650	560	900	750
After adjustment	Estimated moisture (%)	52	51	52	53	49	49
	High calorific value kcal/kg	1,190	1,260	1,240	1,160	1,490	1,330
	Lower calorific value kcal/kg	730	800	770	680	1,020	880

A.6.3 Kitchen Waste, Grass/Wood Waste and Lower Calorific Value

Figure A-2 shows the correlation between kitchen and grass/garden waste with lower calorific values.

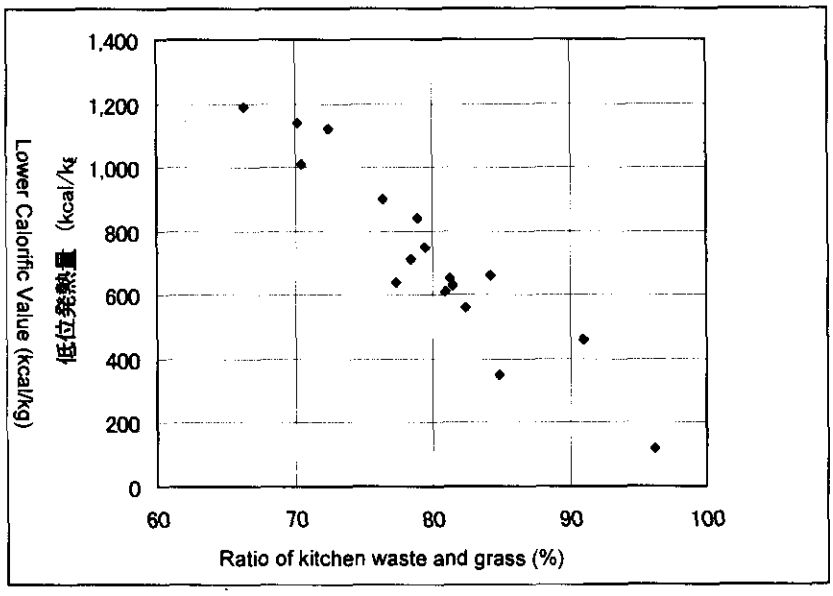


Figure A-2: Correlation of Kitchen Waste and Grass/Wood with Lower Calorific Values

Both the amount of kitchen and grass/wood wastes with lower calorific values show a clear correlation.

A.6.4 Reference Data of Lower Calorific Values

Table A-18 shows the reference data of the lower calorific value of each waste category. The difference in the lower calorific value can be found only in kitchen waste. This is considered to be due to the difference of the test method.

Table A-18: Reference Data of Lower Calorific Values

Components	Japan	Developed countries except Japan	
unit	Dry base kcal/kg	Ranges kcal/kg	Representative data kcal/kg
Kitchen waste	3,982	830 - 1,670	1,110
Paper	3,949	2,780 - 4,450	4,000
Textile	4,709	3610 - 4,720	4,170
Soft plastic	7,641	6670 - 8,890	7,780
Hard plastic			
Grass & wood	4,347	4170 - 4,720	4,450
Leather & rubber	-	5000 - 6,670	5,560
Metal	-	60 - 280	170
Glass	-	30 - 60	30
Ceramic & stone	-		
Others*2	2,931	560 - 2,780	1,670

A.7 Results

As the data on waste in Kandy and Matale show, there was quite a large difference between the actual moisture content and the standard data given by the estimation method. Although the lower calorific values were estimated without adjustments in this study, they have to be actually measured in order to obtain data with sufficient accuracy for the design of waste treatment plants such as an incineration plant. The estimated lower calorific values of waste should be used only as a standard value for reference.

However, the values obtained through the estimation imply that all waste samples are not suitable for incineration due to the low calorific values. It requires a large amount of auxiliary fuel for burning waste, which results in high operational costs. The incineration technology cannot be an economic treatment measure for waste in local towns in Sri Lanka at present.

A.8 Detailed Data

This is set out in Annex to Chapter

Annex

Waste Amount and Composition Surveys

1 Detailed Waste Amount and Composition Survey

1.1 Kandy

1.1.1 Locations of Sampling Points

List of High Income Sampling Points in Kandy

No.	Zone	No. of Person	Address	Contact Person
RH 01	Siyabalagastanna	3	No.5, Weerakoon Garden, Kandy	Mrs.S.Wijesekara
RH 02		7	No.6, Weerakoon Garden, Kandy	Mrs.M.Rasheena
RH 03		9	No.1/7, Siyabalagastanna, Kandy	Mrs.W.Gunarathna
RH 04		8	No.10 A,Weerakoon Garden, Kandy	Mrs.M.Shoodh
RH 05		4	No.12/2, Weerakoon Garden, Kandy	Mr.T.Kumarasingha
RH 06		4	No.18.1/2, Siyabalagastanna Road, Kandy	Miss.C.Gonawala
RH 07		6	No.30/1/1, Weerakoon Garden, Kandy	Mrs.N.Nawarathna
RH 08		4	No.27 A, Weerakoon Garden, Kandy	Mrs.R.Disanayaka
RH 09		5	No.28/25 A,Weerakoon Garden, Kandy	Mrs.P.Mohideen
RH 10		6	No.10/24, Siyabalagastanna Road, Kandy	Mrs.Liyanage
RH 11		5	No.12/24, Weerakoon Garden, Kandy	Mrs.R.Hasari
RH 12		11	No.20/5, Weerakoon Garden, Kandy	Mr.M.Rafeed
RH 13		9	No.20/41 A, Weerakoon Garden, Kandy	Mr.Jameel
RH 14		3	No.24/36, Weerakoon Garden, Kandy	Mrs.S.Nawarathna
RH 15		5	No.20/38, Weerakoon Garden, Kandy	Mrs.Riyal
RH 16	Mulgampola	10	No.89, Mulgampola Road, Kandy	Mr.M.T.Manzoor
RH 17		4	No.77 A, Mulgampola Road, Kandy	Mr.Jaufer
RH 18		5	No.73, Mulgampola Road, Kandy	Mr.Maharuff
RH 19		5	No.71, Mulgampola Road, Kandy	Mr.Bulumulla
RH 20		3	No.44, Mulgampola Road, Kandy	Mr.Kaffur
RH 21		3	No.1/53, Mulgampola Road, Kandy	Mrs.L.Perera
RH 22		6	No.28, Mulgampola Road, Kandy	Mr.Balasubramaniam
RH 23		3	No.24 1/3, Mulgampola Road, Kandy	Mr.S.C.Vithane
RH 24		7	No.6, Mulgampola Road, Kandy	Mr.Punchihewa
RH 25		6	No.582/4, Mulgampola Road, Kandy	Mr.Shafie
RH 26		6	No.16 A, Mulgampola Road, Kandy	Mr.Chandrananda
RH 27		6	No.582/8, Mulgampola Road, Kandy	Mrs.Fathima
RH 28		6	No.582/9, Mulgampola Road, Kandy	Mrs.Liyanage
RH 29		20	No.582, Mulgampola Road, Kandy	Mr.Amit
RH 30		6	No.3, Mulgampola Road, Kandy	Mr.K.B.Senavirathna
Total		185	***	***
Average		6.17	***	***

List of Middle Income Sampling Points in Kandy

No.	Zone	No. of Person	Address	Contact Person
RM 01	Katugastota	9	No 22, Galagedera Patumawatha, Katugastota	Mr.P.Ekanayaka
RM 02		3	No.14/2, Galagedera Patumawatha, Yatiwawala, Katugastota	Mr.P.Rathnayaka
RM 03		3	No.9/1, Galagedara Lane , Katugastota	Mrs.R.Ekanayaka
RM 04		6	No.1/7, Galagedara Patumaga, Katugastota	Mr.N.Bandara
RM 05		5	No.128, Galagedara Road, Katugastota	Mrs.P.Waththawa
RM 06		5	No.125, Galagedara Road, Katugastota	Mr.D.Rathnayaka
RM 07		5	No.163, Kurunagala Road, Katugastota	Mr.I.Silva
RM 08		7	No.99/B, Kurunagala Road, Katugastota	Mrs.M.Nasar
RM 09		5	No.114 A, Kurunagala Road, Katugastota	Mrs.K.Disanayaka
RM 10		4	No.97, Kurunagala Road, Katugastota	Mrs.S.Fahira
RM 11		4	No.112 A, Galagedara Road , Katugastota	Mrs.L.Hitihamu
RM 12		4	No.74 A, Kurunagala Road, Katugastota	Mrs.A.Rasak
RM 13		5	No.70, Kurunagala Road, Katugatota	Mrs.A.Rahuman
RM 14		8	No.66, Kurunagala Road, Katugastota	Mrs.R.Begam
RM 15		6	No.84, Kuronagala Road, Katugastota	Mrs.S.Piris
RM 16	Ampitiya	10	No.26/29, Ampitiya Road, Nuwarawela, Kandy	Mr.K.Saman
RM 17		4	No.32/39, Ampitiya Road, Nuwarawela, Kandy	Mrs.Rathnayaka
RM 18		4	No.35/29, Ampitiya Road, Nuwarawela, Kandy	Mr.Chandrapala
RM 19		12	No.281 A/29, Ampitiya Road, Nuwarawela, Kandy	Mrs.Liyanage
RM 20		4	No.281/29, Ampitiya Road, Nuwarawela, Kandy	Mr.A.Harath
RM 21		6	No.45/29, Ampitiya Road, Nuwarawela, Kandy	Mr.Karunadasa
RM 22		3	No.271/29, Ampitiya Road, Nuwarawela, Kandy	Mr.P.Rajasekar
RM 23		6	No.8/29, Ampitiya Road, Nuwarawela, Kandy	Mr.Mudiyanse
RM 24		8	No.131, Ampitiya Road, Kandy	Mr.B.V.D.Perera
RM 25		5	No.119, Ampitiya Road, Kandy	Mr.P.Uduwela
RM 26		3	No.111, Ampitiya Road, Kandy	Mr.Jayasingha
RM 27		3	No.63, Ampitiya Road, Kandy	Mr.P.B.R.Mullagama
RM 28		6	No.76, Ampitiya Road, Kandy	Mrs.Geewamali
RM 29		4	No.76 A, Ampitiya Road, Kandy	Mr.D.W.David
RM 30		5	No.171, Ampitiya Road, Kandy	Mr.Warnasooriya
Total		162	***	***
Average		5.40	***	***

List of Low Income Sampling Points in Kandy

No.	Zone	No. of Person	Address	Contact Person
RL 01	Mahaiyawa	8	No.B.20, M. C. Mahaiyawa, Kandy	Mrs.T.Selvi
RL 02		15	No.27, M. C. Mahaiyawa, Kandy	Miss.J.Tiron
RL 03		5	No.20, M. C. Mahaiyawa, Kandy	Mrs.C.Siriwardana
RL 04		9	No.16, M. T. Mahaiyawa, Kandy	Mr.S.Sinnaiya
RL 05		4	No.18, M. T. Mahaiyawa, Kandy	Mr.D.Maheshwari
RL 06		14	No.13/28, M. T. Mahaiyawa, Kandy	Mrs.A.Fawsi
RL 07		5	No.13/26, M. T. Mahaiyawa, Kandy	Mrs.M.Perera
RL 08		4	No.30, M. T. Mahaiyawa, Kandy	Mr.K.Selfa
RL 09		5	No.13/28, M. T. Mahaiyawa, Kandy	Miss.A.Thomsan
RL 10		6	No.25, A.A. Darmasena Mawatha, Mahaiyawa, Kandy	Mrs.L.Arnolda
RL 11		6	No.30, M. T. Mahaiyawa, Kandy	Mrs.K.Senanayaka
RL 12		6	No.41, M. T. Mahaiyawa, Kandy	Mrs.K.Risweena
RL 13		5	No.37, M. T. Mahaiyawa, Kandy	Mrs.J.Babi
RL 14		5	No.45, M. T. Mahaiyawa, Kandy	Mrs.Thilakanala
RL 15		6	No.47, M. T. Mahaiyawa, Kandy	Mrs.M.Siththiumma
RL 16	Suduhumpola	6	No.29, Suduhumpola Road, Kandy	Mr.H.M.Kulasooriya
RL 17		3	No.18, Suduhumpola Road, Kandy	Mr.K.H.S.De Silva
RL 18		6	No.1/5, Suduhumpola Road, Kandy	Mr.S.Pathirana
RL 19		4	No.3/34, Suduhumpola Road, Kandy	Mr.S.Balu
RL 20		6	No.34, Suduhumpola Road, Kandy	Mr.Vangadasalam
RL 21		4	No.40, Suduhumpola Road, Kandy	Mr.R.P.Premadasa
RL 22		5	No.44, Suduhumpola Road, Kandy	Mrs.S.Vijeladsumy
RL 23		10	No.48/10/2, Suduhumpola Road, Kandy	Mr.S.Pichchi
RL 24		4	No.58, Suduhumpola Road, Kandy	Mr.Jerajh
RL 25		6	No.68, Suduhumpola Road, Kandy	Mr.D.M.Ginadasa
RL 26		6	No.70, Suduhumpola Road, Kandy	Mr.W.A.Ruwan
RL 27		3	No.49, Suduhumpola Road, Kandy	Mrs.Chandralata
RL 28		4	No.49/1 A, Suduhumpola Road, Kandy	Mr.M.mashahir
RL 29		7	No.42 A, Suduhumpola Road, Kandy	Mr.P.Wijerathna
RL 30		6	No.38, Suduhumpola Road, Kandy	Mr.E.W.W.K.Peyasena
Total		183	***	***
Average		6.10	***	***

1.1.2 Waste Discharge Amount Survey Data

Results of Waste Amount Survey in Kandy (Generation Source: Residential Waste-High Income)

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
RH 01	3	1,900	1,800	1,750	1,950	1,600	1,800	1,300	12,100	1,729	576.2
RH 02	7	7,800	2,200	3,000	6,200	1,600	4,600	9,200	34,600	4,943	706.1
RH 03	9	7,900	3,100	5,300	3,150	6,800	6,200	5,000	37,450	5,350	594.4
RH 04	8	2,300	2,800	3,000	2,000	4,200	2,200	5,400	21,900	3,129	391.1
RH 05	4	1,900	1,050	2,000	1,800	1,300	1,750	1,200	11,000	1,571	392.9
RH 06	4	3,000	1,950	1,100	2,950	1,500	1,300	1,600	13,400	1,914	478.6
RH 07	6	11,800	3,700	3,750	2,950	4,150	2,600	14,700	43,650	6,236	1,039.3
RH 08	4	2,900	2,500	2,000	2,300	1,400	1,400	***	12,500	1,786	446.4
RH 09	5	900	2,800	1,900	800	6,400	2,800	1,200	16,800	2,400	480.0
RH 10	6	4,000	2,800	2,750	3,200	4,300	5,100	1,800	23,950	3,421	570.2
RH 11	5	***	7,700	5,800	4,900	2,800	2,200	950	24,350	3,479	695.7
RH 12	11	8,900	4,750	11,100	6,100	4,700	22,000	5,900	63,450	9,064	824.0
RH 13	9	1,200	1,100	1,000	5,200	2,400	1,850	1,800	14,550	2,079	231.0
RH 14	3	950	1,150	1,000	2,100	1,150	1,600	1,500	9,450	1,350	450.0
RH 15	5	5,000	4,700	2,500	4,000	6,700	5,000	6,400	34,300	4,900	980.0
RH 16	10	4,200	3,400	4,200	6,200	4,800	4,700	5,200	32,700	4,671	467.1
RH 17	4	2,300	1,000	1,800	***	***	***	4,400	9,500	1,357	339.3
RH 18	5	4,200	5,000	2,900	4,200	1,700	3,000	9,200	30,200	4,314	862.9
RH 19	5	4,400	***	***	5,800	8,200	5,800	***	24,200	3,457	691.4
RH 20	3	800	1,800	1,400	3,000	2,000	2,600	4,000	15,600	2,229	742.9
RH 21	3	600	400	300	2,100	2,400	1,500	2,200	9,500	1,357	452.4
RH 22	6	7,000	4,300	5,000	10,800	5,600	9,000	6,000	47,700	6,814	1,135.7
RH 23	3	10,000	11,400	4,900	10,200	6,000	5,800	3,000	51,300	7,329	2,442.9
RH 24	7	4,400	7,000	2,600	4,600	3,800	4,200	2,000	28,600	4,086	583.7
RH 25	6	3,800	2,700	1,000	2,200	3,100	2,400	2,600	17,800	2,543	423.8
RH 26	6	2,400	3,600	2,000	6,000	8,000	13,000	3,800	38,800	5,543	923.8
RH 27	6	5,900	1,300	3,400	4,800	3,400	4,200	5,200	28,200	4,029	671.4
RH 28	6	4,000	6,200	7,200	4,000	9,400	8,000	12,800	51,600	7,371	1,228.6
RH 29	20	6,800	8,400	14,000	2,800	5,400	1,800	5,800	45,000	6,429	321.4
RH 30	6	11,200	5,600	7,800	6,800	6,600	10,600	10,400	59,000	8,429	1,404.8
Total	185	132,450	106,200	106,450	123,100	121,400	139,000	134,550	863,150	123,307	666.5
Average	6.17	4,415	3,540	3,548	4,103	4,047	4,633	4,485	28,772	4,110	666.5

Results of Waste Amount Survey in Kandy (Generation Source: Residential Waste-Middle Income)

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
RM 01	9	1,900	2,150	1,900	2,600	1,850	1,900	3,300	15,600	2,229	247.6
RM 02	3	1,800	1,200	300	1,800	1,950	900	2,600	10,550	1,507	502.4
RM 03	3	2,100	200	1,150	800	600	750	700	6,300	900	300.0
RM 04	6	1,000	1,300	3,900	***	1,200	1,100	1,000	9,500	1,357	226.2
RM 05	5	1,150	1,100	1,150	1,000	1,100	1,150	1,600	8,250	1,179	235.7
RM 06	5	2,950	2,600	1,700	600	3,700	1,600	1,000	14,150	2,021	404.3
RM 07	5	4,000	3,200	2,200	2,000	4,700	2,000	2,400	20,500	2,929	585.7
RM 08	7	12,900	3,800	2,850	1,200	800	4,800	***	26,350	3,764	537.8
RM 09	5	1,100	2,000	1,700	2,400	***	2,700	2,500	12,400	1,771	354.3
RM 10	4	300	100	950	1,950	750	2,600	900	7,550	1,079	269.6
RM 11	4	7,800	3,200	3,800	2,800	4,400	2,400	2,400	26,800	3,829	957.1
RM 12	4	1,000	3,800	100	2,900	250	600	***	8,650	1,236	308.9
RM 13	5	1,000	1,300	500	1,800	1,200	750	800	7,350	1,050	210.0
RM 14	8	3,900	3,800	1,900	4,000	5,000	4,000	5,300	27,900	3,986	498.2
RM 15	6	200	1,100	2,150	3,200	2,500	1,000	2,000	12,150	1,736	289.3
RM 16	10	8,200	4,800	7,000	5,000	2,500	6,000	3,000	36,500	5,214	521.4
RM 17	4	3,900	3,800	4,800	3,600	4,200	4,800	3,300	28,400	4,057	1,014.3
RM 18	4	1,200	200	1,600	1,800	2,000	1,800	3,600	12,200	1,743	435.7
RM 19	12	3,000	7,800	3,200	***	5,600	7,000	1,800	28,400	4,057	338.1
RM 20	4	4,500	2,000	1,200	5,800	1,800	3,000	1,000	19,300	2,757	689.3
RM 21	6	5,500	3,200	2,600	1,900	1,000	5,800	800	20,800	2,971	495.2
RM 22	3	1,400	2,200	800	2,400	2,300	1,400	1,600	12,100	1,729	576.2
RM 23	6	3,100	4,100	4,800	8,800	5,800	2,200	5,200	34,000	4,857	809.5
RM 24	8	1,600	2,000	1,800	1,200	2,500	2,000	1,400	12,500	1,786	223.2
RM 25	5	9,400	2,600	1,400	2,200	***	2,200	1,600	19,400	2,771	554.3
RM 26	3	6,300	6,200	1,200	1,200	800	900	2,800	19,400	2,771	923.8
RM 27	3	4,100	4,800	4,600	700	7,400	4,500	4,200	30,300	4,329	1,442.9
RM 28	6	2,300	1,800	2,200	1,800	800	2,400	4,600	15,900	2,271	378.6
RM 29	4	1,300	1,000	1,300	800	2,000	400	600	7,400	1,057	264.3
RM 30	5	2,100	2,500	2,000	2,200	3,800	1,800	3,000	17,400	2,486	497.1
Total	162	101,000	79,850	66,750	68,450	72,500	74,450	65,000	528,000	75,429	465.6
Average	5.40	3,367	2,662	2,225	2,282	2,417	2,482	2,167	17,600	2,514	465.6

Results of Waste Amount Survey in Kandy (Generation Source: Residential Waste-Low Income)

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
RL 01	8	1,250	2,900	1,750	2,000	1,700	1,800	2,000	13,400	1,914	239.3
RL 02	15	***	600	1,800	300	50	1,800	1,200	5,750	821	54.8
RL 03	5	150	2,100	300	200	1,300	1,600	1,500	7,150	1,021	204.3
RL 04	9	1,100	950	1,150	850	1,000	1,900	1,600	8,550	1,221	135.7
RL 05	4	1,000	3,100	3,600	***	5,300	4,500	2,000	19,500	2,786	696.4
RL 06	14	2,900	2,900	2,500	4,600	2,400	4,200	2,600	22,100	3,157	225.5
RL 07	5	150	1,000	***	700	1,300	200	3,000	6,350	907	181.4
RL 08	4	850	850	1,250	1,000	1,000	1,400	1,500	7,850	1,121	280.4
RL 09	5	1,300	2,000	950	1,100	950	800	600	7,700	1,100	220.0
RL 10	6	1,950	200	1,250	1,000	1,000	950	950	7,300	1,043	173.8
RL 11	6	1,300	2,300	3,900	1,200	***	***	4,800	13,500	1,929	321.4
RL 12	6	7,850	5,100	5,100	4,200	3,900	9,200	6,600	41,950	5,993	998.8
RL 13	5	***	1,200	1,000	1,000	400	1,400	800	5,800	829	165.7
RL 14	5	2,900	1,000	2,600	300	1,000	1,400	1,000	10,200	1,457	291.4
RL 15	6	3,300	2,100	2,900	1,000	1,900	1,400	2,000	14,600	2,086	347.6
RL 16	6	1,400	800	800	400	2,000	1,000	1,800	8,200	1,171	195.2
RL 17	3	3,400	3,600	1,600	3,400	1,800	2,600	2,800	19,200	2,743	914.3
RL 18	6	2,000	1,100	1,200	2,000	1,200	2,300	2,000	11,800	1,686	281.0
RL 19	4	1,600	1,000	1,700	1,000	200	800	500	6,800	971	242.9
RL 20	6	1,200	200	300	1,400	1,200	1,300	2,600	8,200	1,171	195.2
RL 21	4	2,000	1,600	2,300	5,000	2,200	1,800	2,400	17,300	2,471	617.9
RL 22	5	3,400	3,600	2,400	2,800	2,600	2,000	2,300	19,100	2,729	545.7
RL 23	10	4,100	1,500	2,200	2,300	3,000	4,000	1,600	18,700	2,671	267.1
RL 24	4	1,800	3,800	3,400	2,100	2,600	2,400	4,600	20,700	2,957	739.3
RL 25	6	7,600	2,900	3,400	4,400	7,000	2,200	2,500	30,000	4,286	714.3
RL 26	6	3,400	2,800	1,800	1,500	2,700	4,200	2,100	18,500	2,643	440.5
RL 27	3	5,800	5,600	7,000	4,200	6,800	10,600	***	40,000	5,714	1,904.8
RL 28	4	4,200	3,600	2,800	2,400	2,500	1,300	3,800	20,600	2,943	735.7
RL 29	7	4,600	2,000	2,800	1,400	1,900	2,600	3,200	18,500	2,643	377.6
RL 30	6	***	4,000	5,200	2,700	3,400	3,400	3,600	22,300	3,186	531.0
Total	183	72,500	66,400	68,950	56,450	64,300	75,050	67,950	471,600	67,371	368.1
Average	6.10	2,417	2,213	2,298	1,882	2,143	2,502	2,265	15,720	2,246	368.1

Summary of Waste Amount Survey in Kandy

Generation Source: Residential Waste-High Income

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
30 residence	185	132,450	106,200	106,450	123,100	121,400	139,000	134,550	863,150	123,307	666.5
Average	6.17	4,415	3,540	3,548	4,103	4,047	4,633	4,485	28,772	4,110	666.5

Generation Source: Residential Waste-Middle Income

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
30 residence	162	101,000	79,850	66,750	68,450	72,500	74,450	65,000	528,000	75,429	465.6
Average	5.40	3,367	2,662	2,225	2,282	2,417	2,482	2,167	17,600	2,514	465.6

Generation Source: Residential Waste-Low Income

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
30 residence	183	72,500	66,400	68,950	56,450	64,300	75,050	67,950	471,600	67,371	368.1
Average	6.10	2,417	2,213	2,298	1,882	2,143	2,502	2,265	15,720	2,246	368.1

Generation Source: 90 Residential Waste

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
90 residence	530	305,950	252,450	242,150	248,000	258,200	288,500	267,500	1,862,750	266,107	502.1
Average	5.89	3,399	2,805	2,691	2,756	2,869	3,206	2,972	20,697	2,957	502.1

1.1.3 Waste Composition Survey Data

Results of Waste Composition Survey (Wet Base) in Kandy (Discharge Source: Residential Waste-High Income)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jun.15 (Sat.)	(g)	3,307	630	65	324	205	1,355	0	106	0	0	5	5,997	4,662	1,335	44	13.5	0.31
	(%)	55.14	10.51	1.08	5.40	3.42	22.59	0.00	1.77	0.00	0.00	0.08	100.00	77.74	22.26			
Jun.16 (Sun.)	(g)	3,533	455	42	585	9	512	0	75	54	403	4	5,672	4,045	1,627	37	12.8	0.35
	(%)	62.29	8.02	0.74	10.31	0.16	9.03	0.00	1.32	0.95	7.11	0.07	100.00	71.32	28.68			
Jun.17 (Mon.)	(g)	4,383	507	39	288	74	481	20	10	11	216	2	6,031	4,864	1,167	37	12.4	0.34
	(%)	72.67	8.41	0.65	4.78	1.23	7.98	0.33	0.17	0.18	3.58	0.03	100.00	80.65	19.35			
Jun.18 (Tue.)	(g)	3,621	400	18	76	20	671	0	5	0	29	0	4,840	4,292	548	30	9.8	0.33
	(%)	74.81	8.26	0.37	1.57	0.41	13.86	0.00	0.10	0.00	0.60	0.00	100.00	88.68	11.32			
Jun.19 (Wed.)	(g)	5,794	309	93	85	45	1,097	4	185	77	295	30	8,014	6,891	1,123	38	16.5	0.43
	(%)	72.30	3.86	1.16	1.06	0.56	13.69	0.05	2.31	0.96	3.68	0.37	100.00	85.99	14.01			
Jun.20 (Thu.)	(g)	2,010	277	44	90	35	600	57	10	30	163	3	3,319	2,610	709	26	7.6	0.29
	(%)	60.56	8.35	1.33	2.71	1.05	18.08	1.72	0.30	0.90	4.91	0.09	100.00	78.64	21.36			
Jun.21 (Fri.)	(g)	6,834	613	139	249	91	463	0	18	207	70	0	8,684	7,297	1,387	44	17.8	0.40
	(%)	78.70	7.06	1.60	2.87	1.05	5.33	0.00	0.21	2.38	0.81	0.00	100.00	84.03	15.97			
Total	(g)	29,482	3,191	440	1,697	479	5,179	81	409	379	1,176	44	42,557	34,661	7,896	256	90.4	0.35
	(%)	69.28	7.50	1.03	3.99	1.13	12.17	0.19	0.96	0.89	2.76	0.10	100.00	81.45	18.55			

Results of Waste Composition Survey (Wet Base) in Kandy (Discharge Source: Residential Waste-Middle Income)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jun.15 (Sat.)	(g)	1,723	473	18	567	25	1,515	192	2	25	29	82	4,651	3,238	1,413	32	11.5	0.36
	(%)	37.05	10.17	0.39	12.19	0.54	32.57	4.13	0.04	0.54	0.62	1.76	100.00	69.62	30.38			
Jun.16 (Sun.)	(g)	2,145	373	6	258	90	217	15	189	56	0	0	3,349	2,362	987	32	7.2	0.23
	(%)	64.05	11.14	0.18	7.70	2.69	6.48	0.45	5.64	1.67	0.00	0.00	100.00	70.53	29.47			
Jun.17 (Mon.)	(g)	2,673	225	22	140	32	485	20	9	26	19	4	3,655	3,158	497	29	7.8	0.27
	(%)	73.13	6.16	0.60	3.83	0.88	13.27	0.55	0.25	0.71	0.52	0.11	100.00	86.40	13.60			
Jun.18 (Tue.)	(g)	3,810	480	0	194	17	470	12	65	10	63	0	5,121	4,280	841	29	10.2	0.35
	(%)	74.40	9.37	0.00	3.79	0.33	9.18	0.23	1.27	0.20	1.23	0.00	100.00	83.58	16.42			
Jun.19 (Wed.)	(g)	2,800	312	100	225	36	439	0	7	22	172	7	4,120	3,239	881	28	9.6	0.34
	(%)	67.96	7.57	2.43	5.46	0.87	10.66	0.00	0.17	0.53	4.17	0.17	100.00	78.62	21.38			
Jun.20 (Thu.)	(g)	3,814	439	109	310	43	725	0	5	240	55	6	5,746	4,539	1,207	38	13.5	0.36
	(%)	66.38	7.64	1.90	5.40	0.75	12.62	0.00	0.09	4.18	0.96	0.10	100.00	78.99	21.01			
Jun.21 (Fri.)	(g)	2,960	224	130	60	30	604	18	107	38	83	0	4,254	3,564	690	28	8.3	0.30
	(%)	69.58	5.27	3.06	1.41	0.71	14.20	0.42	2.52	0.89	1.95	0.00	100.00	83.78	16.22			
Total	(g)	19,925	2,526	385	1,754	273	4,455	257	384	417	421	99	30,896	24,380	6,516	216	68.1	0.32
	(%)	64.49	8.18	1.25	5.68	0.88	14.42	0.83	1.24	1.35	1.36	0.32	100.00	78.91	21.09			

Results of Waste Composition Survey (Wet Base) in Kandy (Discharge Source: Residential Waste-Low Income)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jun.15 (Sat.)	(g)	7,718	240	11	227	52	488	23	38	71	245	3	9,116	8,206	910	43	19.6	0.46
	(%)	84.66	2.63	0.12	2.49	0.57	5.35	0.25	0.42	0.78	2.69	0.03	100.00	90.02	9.98			
Jun.16 (Sun.)	(g)	2,915	275	120	150	56	345	0	14	160	105	16	4,156	3,260	896	27	8.2	0.30
	(%)	70.14	6.62	2.89	3.61	1.35	8.30	0.00	0.34	3.85	2.53	0.38	100.00	78.44	21.56			
Jun.17 (Mon.)	(g)	6,062	428	151	285	48	442	0	15	150	168	23	7,772	6,504	1,268	38	15.4	0.41
	(%)	78.00	5.51	1.94	3.67	0.62	5.69	0.00	0.19	1.93	2.16	0.30	100.00	83.69	16.31			
Jun.18 (Tue.)	(g)	4,977	247	40	135	35	501	53	68	73	66	5	6,200	5,478	722	34	13.1	0.39
	(%)	80.27	3.98	0.65	2.18	0.56	8.08	0.85	1.10	1.18	1.06	0.08	100.00	88.35	11.65			
Jun.19 (Wed.)	(g)	5,301	360	25	153	10	765	71	75	12	302	21	7,095	6,066	1,029	46	16.8	0.37
	(%)	74.71	5.07	0.35	2.16	0.14	10.78	1.00	1.06	0.17	4.26	0.30	100.00	85.50	14.50			
Jun.20 (Thu.)	(g)	6,424	330	72	227	56	888	0	56	20	896	0	8,969	7,312	1,657	45	18.0	0.40
	(%)	71.62	3.68	0.80	2.53	0.62	9.90	0.00	0.62	0.22	9.99	0.00	100.00	81.53	18.47			
Jun.21 (Fri.)	(g)	2,935	244	106	122	35	253	12	37	19	45	0	3,808	3,188	620	29	7.1	0.24
	(%)	77.07	6.41	2.78	3.20	0.92	6.64	0.32	0.97	0.50	1.18	0.00	100.00	83.72	16.28			
Total	(g)	36,332	2,124	525	1,299	292	3,682	159	303	505	1,827	68	47,116	40,014	7,102	262	98.2	0.37
	(%)	77.11	4.51	1.11	2.76	0.62	7.81	0.34	0.64	1.07	3.88	0.14	100.00	84.93	15.07			

Results of Waste Composition Survey (Wet Base) in Kandy (Discharge Source: Kandy Central Market)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jun.15 (Sat.)	(g)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	(%)																	
Jun.16 (Sun.)	(g)	3,169	540	45	137	0	624	0	6	34	25	0	4,580	3,793	787	45	18.4	0.41
	(%)	69.19	11.79	0.98	2.99	0.00	13.62	0.00	0.13	0.74	0.55	0.00	100.00	82.82	17.18			
Jun.17 (Mon.)	(g)	3,825	498	63	227	22	902	0	36	0	0	1	5,574	4,727	847	35	11.4	0.33
	(%)	68.62	8.93	1.13	4.07	0.39	16.18	0.00	0.65	0.00	0.00	0.02	100.00	84.80	15.20			
Jun.18 (Tue.)	(g)	4,459	90	79	63	0	1,138	0	0	0	25	0	5,854	5,597	257	35	12.2	0.35
	(%)	76.17	1.54	1.35	1.08	0.00	19.44	0.00	0.00	0.00	0.43	0.00	100.00	95.61	4.39			
Jun.19 (Wed.)	(g)	4,740	0	223	31	0	1,262	0	0	0	26	0	6,282	6,002	280	32	12.0	0.38
	(%)	75.45	0.00	3.55	0.49	0.00	20.09	0.00	0.00	0.00	0.41	0.00	100.00	95.54	4.46			
Jun.20 (Thu.)	(g)	2,990	124	235	55	0	582	0	0	0	50	0	4,036	3,572	464	32	7.8	0.24
	(%)	74.08	3.07	5.82	1.36	0.00	14.42	0.00	0.00	0.00	1.24	0.00	100.00	88.50	11.50			
Jun.21 (Fri.)	(g)	3,685	38	40	43	14	680	0	0	0	20	0	4,520	4,365	155	33	9.1	0.28
	(%)	81.53	0.84	0.88	0.95	0.31	15.04	0.00	0.00	0.00	0.44	0.00	100.00	96.57	3.43			
Total	(g)	22,868	1,290	685	556	36	5,188	0	42	34	146	1	30,846	28,056	2,790	212	70.9	0.33
	(%)	74.14	4.18	2.22	1.80	0.12	16.82	0.00	0.14	0.11	0.47	0.00	100.00	90.96	9.04			

Results of Waste Composition Survey (Wet Base) in Kandy (Discharge Source: Menikkumbura Market Complex)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jun.15 (Sat.)	(g)	7,936	236	0	86	0	263	0	0	0	0	0	8,521	8,199	322	42	17.5	0.42
	(%)	93.13	2.77	0.00	1.01	0.00	3.09	0.00	0.00	0.00	0.00	0.00	100.00	96.22	3.78			
Jun.16 (Sun.)	(g)	6,570	157	27	24	0	105	0	5	0	609	2	7,499	6,675	824	32	8.9	0.28
	(%)	87.61	2.09	0.36	0.32	0.00	1.40	0.00	0.07	0.00	8.12	0.03	100.00	89.01	10.99			
Jun.17 (Mon.)	(g)	2,968	43	31	13	0	1,012	0	0	0	22	3	4,092	3,980	112	31	9.4	0.30
	(%)	72.53	1.05	0.76	0.32	0.00	24.73	0.00	0.00	0.00	0.54	0.07	100.00	97.26	2.74			
Jun.18 (Tue.)	(g)	4,950	65	0	9	0	1,221	0	10	0	28	0	6,283	6,171	112	39	11.1	0.28
	(%)	78.78	1.03	0.00	0.14	0.00	19.43	0.00	0.16	0.00	0.45	0.00	100.00	98.22	1.78			
Jun.19 (Wed.)	(g)	9,154	61	35	4	5	591	0	0	0	12	0	9,862	9,745	117	38	17.4	0.46
	(%)	92.82	0.62	0.35	0.04	0.05	5.99	0.00	0.00	0.00	0.12	0.00	100.00	98.81	1.19			
Jun.20 (Thu.)	(g)	4,401	90	19	26	0	1,562	0	0	0	0	0	6,098	5,963	135	48	14.1	0.29
	(%)	72.17	1.48	0.31	0.43	0.00	25.61	0.00	0.00	0.00	0.00	0.00	100.00	97.79	2.21			
Jun.21 (Fri.)	(g)	1,533	41	25	36	0	949	0	0	0	0	0	2,584	2,482	102	29	6.0	0.21
	(%)	59.33	1.59	0.97	1.39	0.00	36.73	0.00	0.00	0.00	0.00	0.00	100.00	96.05	3.95			
Total	(g)	37,512	693	137	198	5	5,703	0	15	0	671	5	44,939	43,215	1,724	259	84.4	0.33
	(%)	83.47	1.54	0.30	0.44	0.01	12.69	0.00	0.03	0.00	1.49	0.01	100.00	96.16	3.84			

Summary of Waste Composition Survey (Wet Base) in Kandy (1/3)

Discharge Source: Residential Waste-High Income

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
June 14~21	(g)	29,482	3,191	440	1,697	479	5,179	81	409	379	1,176	44	42,557	34,661	7,896	256	90.4	0.35
	(%)	69.28	7.50	1.03	3.99	1.13	12.17	0.19	0.96	0.89	2.76	0.10	100.00	81.45	18.55			

Discharge Source: Residential Waste-Middle Income

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
June 14~21	(g)	19,925	2,526	385	1,754	273	4,455	257	384	417	421	99	30,896	24,380	6,516	216	68.1	0.32
	(%)	64.49	8.18	1.25	5.68	0.88	14.42	0.83	1.24	1.35	1.36	0.32	100.00	78.91	21.09			

Discharge Source: Residential Waste-Low Income

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
June 14~21	(g)	36,332	2,124	525	1,299	292	3,682	159	303	505	1,827	68	47,116	40,014	7,102	262	98.2	0.37
	(%)	77.11	4.51	1.11	2.76	0.62	7.81	0.34	0.64	1.07	3.88	0.14	100.00	84.93	15.07			

Summary of Waste Composition Survey (Wet Base) in Kandy (2/3)

Discharge Source: Kandy Central Market

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
June 14~21	(g)	22,868	1,290	685	556	36	5,188	0	42	34	146	1	30,846	28,056	2,790	212	70.9	0.33
	(%)	74.14	4.18	2.22	1.80	0.12	16.82	0.00	0.14	0.11	0.47	0.00	100.00	90.96	9.04			

Discharge Source: Menikkumbura Market Complex

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
June 14~21	(g)	37,512	693	137	198	5	5,703	0	15	0	671	5	44,939	43,215	1,724	259	84.4	0.33
	(%)	83.47	1.54	0.30	0.44	0.01	12.69	0.00	0.03	0.00	1.49	0.01	100.00	96.16	3.84			

Discharge Source: Vehicle Collection Waste

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
June 14~21	(g)	19,435	3,988	468	2,432	222	4,109	226	279	378	1,713	135	33,385	23,544	9,841	237	71.9	0.30
	(%)	58.21	11.95	1.40	7.28	0.66	12.31	0.68	0.84	1.13	5.13	0.40	100.00	70.52	29.48			

1.1.4 Moisture Contents Analysis

Date	Generation Source	No. of Samples	Total No. of Samples
June 15, 2002	Menik Kumbura Market Complex	1	
	High Income House hold Waste	1	3
	Vehicle Waste	1	
June 16, 2002	Collection Vehicle	1	
	High Income House hold Waste	1	
	Menik Kumbura Market Complex	1	5
	Central Market Waste	1	
	Middle Income House hold Waste	1	
June 17, 2002	Low Income House hold Waste	1	
	High Income House hold Waste	1	
	Central Market Waste	1	5
	Middle Income House hold Waste	1	
	Collection Vehicle	1	
June 18, 2002	Collection Vehicle	1	
	High Income House hold Waste	1	
	Central Market Waste	1	
	Menik Kumbura Market Complex	1	6
	Middle Income House hold Waste	1	
	Low Income House hold Waste	1	
June 19, 2002	Menik Kumbura Market Complex	1	
	Low Income House hold Waste	1	
	High Income House hold Waste	1	5
	Middle Income House hold Waste	1	
	Central Market Waste	1	
June 20, 2002	Menik Kumbura Market Complex	1	
	Low Income House hold Waste	1	
	Middle Income House hold Waste	1	4
	Central Market Waste	1	
June 21, 2002	Low Income House hold Waste	1	
	Collection Vehicle	1	2
	Total		**30**

Results

Generation Source: Market Waste (Kandy Central Market)

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	June 16, 2002	3,800	1,247	67.184
2	June 17, 2002	5,506	1,398	74.610
3	June 18, 2002	3,202	686	78.576
4	June 19, 2002	2,855	586	79.475
5	June 20, 2002	3,412	780	77.140
Average				75.397

Generation Source: Market Waste (Menikkumbura Market Complex)

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	June 15, 2002	4,630	1,195	74.190
2	June 16, 2002	5,027	1,131	77.501
3	June 18, 2002	4,447	1,124	74.725
4	June 19, 2002	3,580	779	78.240
5	June 20, 2002	3,365	777	76.909
Average				76.313

Generation Source: Collection Vehicle Waste

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	June 15, 2002	4,325	2,366	45.295
2	June 16, 2002	7,116	3,026	57.476
3	June 17, 2002	4,727	2,049	56.653
4	June 18, 2002	3,217	1,559	51.539
5	June 21, 2002	2,986	1,580	47.086
Average				51.610

Generation Source: Residual Waste (High Income)

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	June 15, 2002	7,280	2,564	64.780
2	June 16, 2002	5,458	1,773	67.516
3	June 17, 2002	6,073	1,833	69.817
4	June 18, 2002	4,550	1,561	65.692
5	June 19, 2002	4,178	1,572	62.374
Average				66.036

Generation Source: Residual Waste (Middle Income)

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	June 16, 2002	3,568	1,497	58.044
2	June 17, 2002	3,963	1,208	69.518
3	June 18, 2002	4,845	1,780	63.261
4	June 19, 2002	4,159	1,898	54.364
5	June 20, 2002	3,599	1,518	57.822
Average				60.602

Generation Source: Residual Waste (Low Income)

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	June 17, 2002	4,309	1,577	63.402
2	June 18, 2002	3,345	1,197	64.215
3	June 19, 2002	4,854	2,229	54.079
4	June 20, 2002	4,035	1,665	58.736
5	June 21, 2002	2,937	1,362	53.626
Average				58.812

1.2 Matale

1.2.1 Locations of Sampling Points

List of High Income Sampling Points in Matale

No.	Zone	No. of Person	Address	Contact Person
RH 01	Malwatta	5	No.53, Malwatta Road, Matale	Mr.D.Senevirathna
RH 02		2	No.10/1, Malwatta Road, Matale	Mrs.P.Wijerathna
RH 03		7	No.19, Malwatta Road, Matale	Mr.S.Mohamed
RH 04		4	No.64, Malwatta Road, Matale	Mrs.Abevardana
RH 05		10	No.18, 4th Lane, Malwatta Road, Matale	Mrs.E.Kahalakalawa
RH 06		4	No.29, Malwatta Road, Matale	Mr.P.Madagedara
RH 07		5	No.22 A, Malwatta Road, Matale	Mr.R.Weerasingha
RH 08		5	No.39, Malwatta Road, Matale	Mrs.Riswana
RH 09		7	No.30 A,Malwatta Road, Matale	Mrs.B.Senevirathna
RH 10		6	No.42, Malwatta Road, Matale	Miss.H.M.Kulasekara
RH 11		8	No.57 A, Malwatta Road, Matale	Mrs.N.Tennakoon
RH 12		5	No.172, Malwatta Road, Matale	Mrs.C.D.Silva
RH 13		5	No.60, Malwatta Road, Matale	Mrs.P.Swarnasingha
RH 14		6	No.69, Malwatta Road, Matale	Mr.P.Herath
RH 15		4	No.208, Malwatta Road, Matale	Mr.L.B.Karalpitiya
RH 16	Nagolla Road	3	No.18, Nagolla Road, Matale	Mr.K.M.S.Ranasinghe
RH 17		7	No.20, Nagolla Road, Matale	Mr: E.M.Karunarathne
RH 18	Pullayar kovil Road	6	No.2, Pullayar Kovil Road, Matale	Mr.S.P.Piyasena
RH 19		6	No.3 A, Pullayar Kovil Road, Matale	Mr.Wanigasekara
RH 20		8	No.6, Pullayar Kovil Road, Matale	Mr.J.L.A.Vahafb
RH 21		7	No.5, Pullayar Kovil Road, Matale	Mrs.D.W.Silva
RH 22		5	No.7 A, Pullayar Kovil Road, Matale	Mr.A.M.C.Thajudeen
RH 23		6	No.9, Pullayar Kovil Road, Matale	Mr.M.M.Mursheed
RH 24		3	No.17, Pullayar Kovil Road, Matale	Mr.G.K.Athipola
RH 25		6	No.19, Pullayar Kovil Road, Matale	Mr.K.M.Muthubanda
RH 26	School Place	3	No.32, Viduhal Mawatha, Matale	Mr.P.B.Upasena
RH 27		3	No.29, Viduhal Mawatha, Matale	Mrs.S.M.M.De Silva
RH 28		6	No.27, Viduhal Mawatha, Matale	Mr.M.F.Hassin
RH 29		5	No.30, Viduhal Mawatha, Matale	Mrs.P.W.Wickramasingha
RH 30		15	No.25, Viduhal Mawatha, Matale	Mrs.V.G.Ginadasa
Total		172	***	***
Average		5.73	***	***

List of Middle Income Sampling Points in Matale

No.	Zone	No. of Person	Address	Contact Person
RM 01	Gongawela	7	No.35, Dole Road, Matale	Mrs.A.Shiferdeen
RM 02		3	No.45, Dole Road, Matale	Mr.A.H.A.Lathief
RM 03		4	No.49, Dole Road, Matale	Mr.M.H.A.Lathief
RM 04		15	No.53, Dole Road, Matale	Mrs.Nasloon Hasna
RM 05		6	No.34/2, Dole Road, Matale	Mrs. Momtage
RM 06		5	No.44, Dole Road, Matale	Mrs.Masiya Umma
RM 07		7	No.57, Dole Road, Matale	Mrs.S.M.Lathief
RM 08		5	No.48, Dole Road, Matale	Mrs. Navas
RM 09		8	No.54, Dole Road, Matale	Mrs.Husamdeen
RM 10		12	No.6, Pipe Liine Road, Matale	Mrs.Mahir
RM 11		4	No.5, Pipe Line Road, Matale	Mrs.S.A.Zubair
RM 12		6	No.11, Pipe Line Road, Matale	Mrs.Rahamath Umma
RM 13		5	No.13, Pipe Line Road, Matale	Mrs.Nasiya Umma
RM 14		8	No.3, Husain Mawatha, Matale	Mr.smile
RM 15		7	No.24, Husain Mawatha, Matale	MrsZubaid
RM 16	National Housing Scheem	6	No.2, National housing scheem, Kotuwegedara, Mathale	Mr.V.W.A.Chanrdananda
RM 17		8	No.3, National housing scheem, Kotuwegedara, Mathale	Mr.E.M.Gunawardana
RM 18		5	No.30, National housing scheem, Kotuwegedara, Mathale	Ms.Priyangika
RM 19		3	No.12, National housing scheem, Kotuwegedara, Mathale	Mrs.Nilanthi
RM 20		7	No.1, National housing scheem, Kotuwegedara, Mathale	Mr.D.B.Hennayake
RM 21		3	No.14, National housing scheem, Kotuwegedara, Mathale	Mr.D.W.Wijerathna
RM 22		6	No.21, National housing scheem, Kotuwegedara, Mathale	Mr.R.Wanashinghe
RM 23		5	No.24, National housing scheem, Kotuwegedara, Mathale	Mr.U.A.Ariyarathne
RM 24		6	No.22, National housing scheem, Kotuwegedara, Mathale	Mr.N.P.Ranasinghe
RM 25		4	No.23, National housing scheem, Kotuwegedara, Mathale	Mr.S.Ranasinghe
RM 26		5	No.27, National housing scheem, Kotuwegedara, Mathale	Mrs.R.Hettiarachchi
RM 27		5	No.44, National housing scheem, Kotuwegedara, Mathale	Mrs.H.M.S.Manike
RM 28		9	No.48, National housing scheem, Kotuwegedara, Mathale	Mr.J.Ariyawansa
RM 29		6	No.40, National housing scheem, Kotuwegedara, Mathale	Mr.W.A.Gunasekara
RM 30		8	No.33, National housing scheem, Kotuwegedara, Mathale	Mrs.S.G.margaret
Total		188	***	***
Average		6.27	***	***

List of Low Income Sampling Points in Matale

No.	Zone	No. of Person	Address	Contact Person
RL 01	Mahadewata	5	No.9/A, Mahadewata Road, Matale	Mrs.M.Disanayaka
RL 02		7	No.8, Mahadewata Road, Matale	Mrs.H.D.Umawathi
RL 03		13	No.15, Mahadewata Road, Matale	Mrs.S.Hettiarachchi
RL 04		3	No.21/A, Mahadewata Road, Matale	Mrs.B.G.Sumanawathi
RL 05		6	No.22, Mahadewata Road, Matale	Mrs.Dayawathi
RL 06		6	No.24, Mahadewata Road, Matale	Mrs.P.K.Indrawathi
RL 07		5	No.4, Mahadewata Road, Matale	Mrs.Tikiri
RL 08		5	No.24/2, Mahadewata Road, Matale	Mrs.C.Silva
RL 09		4	No.15 A, Mahadewata Road, Matale	Mrs.R.Samarakoon
RL 10		4	No.13, Mahadewata Road, matale	Mrs.Ranjani
RL 11		7	No.9, Mahadewata Road, Matale	Mrs.C.Malkanthi
RL 12		7	No.6, Mahadewata Road, Matale	Mrs.C.Manathunga
RL 13		7	No.4, Mahadewata Road, Matale	Mrs.P.Gunawardena
RL 14		6	No.10, Mahadewata Road, Matale	Mrs.S.G.Somawathi
RL 15		4	No.32, Mahadewata Road, Matale	Mrs.S.Jayanthi
RL 16	Higgolla	8	No.27/260, Higgolla Mawatha, Matale	Mr.Perumal
RL 17		5	No.27/218, Higgolla Mawatha, Matale	Mr.M.Ponnasamy
RL 18		7	No.27/246, Higgolla Mawatha, Matale	Mrs.S.Thavamani
RL 19		7	No.27/222, Higgolla Mawatha, Matale	Mr.K.Jayapalan
RL 20		7	No.27/230, Higgolla Mawatha, Matale	Mr.S.Pragash
RL 21		6	No.27/10, Higgolla Mawatha, Matale	Mr.S.Thangaiah
RL 22		7	No.27/12, Higgolla Mawatha, Matale	Mr.M.Arumugam
RL 23		4	No.27/33, Higgolla Mawatha, Matale	Mrs.R.Laxsmi
RL 24		6	No.50/1, Higgolla Mawatha, Matale	Mrs.A.Pathmini
RL 25		5	No.142/21, Higgolla Mawatha, Matale	Mr.Vijayakumar
RL 26		5	No.27/134, Higgolla Mawatha, Matale	Mr.R.Jayasena
RL 27		5	No.45, Higgolla Mawatha, Matale	Mr.S.Kalimuththu
RL 28		8	No.27/121, Higgolla Mawatha, Matale	Mr.Mohan
RL 29		5	No.27/100, Higgolla Mawatha, Matale	Mr.P.Vigneshwaran
RL 30		6	No.33, Higgolla Mawatha, Matale	Mrs.S.Latha
Total		180	***	***
Average		6.00	***	***

1.2.2 Waste Discharge Amount Survey Data

Results of Waste Amount Survey in Matale (Generation Source: Residential Waste-High Income)

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		July 7 (Sun.)	July 8 (Mon.)	July 9 (Tue.)	July 10 (Wed.)	July 11 (Thu.)	July 12 (Fri.)	July 13 (Sat.)		per day	per day/person
RH 01	5	8,000	4,200	1,900	2,600	1,300	1,600	2,750	22,350	3,193	638.6
RH 02	2	3,600	2,000	1,800	1,700	2,400	1,800	700	14,000	2,000	1,000.0
RH 03	7	400	800	1,800	1,500	800	500	1,950	7,750	1,107	158.2
RH 04	4	3,200	2,900	2,800	2,900	2,000	2,000	2,000	17,800	2,543	635.7
RH 05	10	2,200	1,900	1,600	2,300	2,300	1,800	1,800	13,900	1,986	198.6
RH 06	4	4,600	4,000	600	800	600	600	700	11,900	1,700	425.0
RH 07	5	4,000	2,600	3,000	2,200	2,600	2,900	3,000	20,300	2,900	580.0
RH 08	5	900	***	2,000	4,100	1,000	2,500	9,000	19,500	2,786	557.1
RH 09	7	3,400	1,700	1,100	2,700	1,400	900	2,500	13,700	1,957	279.6
RH 10	6	2,500	3,000	4,000	3,400	4,600	4,700	4,800	27,000	3,857	642.9
RH 11	8	1,250	700	900	300	2,100	2,000	2,100	9,350	1,336	167.0
RH 12	5	1,600	800	1,600	1,250	700	1,400	600	7,950	1,136	227.1
RH 13	5	950	1,400	600	700	2,000	950	700	7,300	1,043	208.6
RH 14	6	3,500	4,000	2,000	2,700	1,900	800	2,400	17,300	2,471	411.9
RH 15	4	950	800	950	600	2,600	600	600	7,100	1,014	253.6
RH 16	3	1,600	1,800	3,800	700	2,600	1,500	1,200	13,200	1,886	628.6
RH 17	7	4,500	3,500	2,200	3,400	2,700	2,200	1,800	20,300	2,900	414.3
RH 18	6	5,000	2,600	2,400	2,800	1,800	3,400	2,900	20,900	2,986	497.6
RH 19	6	2,600	2,100	2,000	1,700	1,500	2,100	2,400	14,400	2,057	342.9
RH 20	8	3,400	5,400	4,800	4,000	3,600	4,700	3,200	29,100	4,157	519.6
RH 21	7	1,200	3,000	3,800	3,600	3,700	3,100	1,300	19,700	2,814	402.0
RH 22	5	2,400	1,900	1,000	4,000	1,500	1,900	3,300	16,000	2,286	457.1
RH 23	6	2,700	3,200	5,000	4,200	5,800	8,000	7,200	36,100	5,157	859.5
RH 24	3	800	200	400	500	1,000	1,200	3,400	7,500	1,071	357.1
RH 25	6	3,700	1,200	2,500	2,900	3,300	1,800	3,100	18,500	2,643	440.5
RH 26	3	2,500	2,600	2,400	2,700	3,000	2,400	1,300	16,900	2,414	804.8
RH 27	3	2,800	5,200	3,500	***	4,000	3,900	2,000	21,400	3,057	1,019.0
RH 28	6	2,600	2,200	1,800	2,000	1,400	1,700	1,500	13,200	1,886	314.3
RH 29	5	5,800	2,300	4,800	4,100	5,200	7,200	5,700	35,100	5,014	1,002.9
RH 30	15	10,600	6,000	3,400	5,200	5,000	4,900	4,000	39,100	5,586	372.4
Total	172	93,250	74,000	70,450	71,550	74,400	75,050	79,900	538,600	76,943	447.3
Average	5.73	3,108	2,467	2,348	2,385	2,480	2,502	2,663	17,953	2,565	447.3

Results of Waste Amount Survey in Matale (Generation Source: Residential Waste-Middle Income)

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		July 7 (Sun.)	July 8 (Mon.)	July 9 (Tue.)	July 10 (Wed.)	July 11 (Thu.)	July 12 (Fri.)	July 13 (Sat.)		per day	per day/person
RM 01	7	3,000	2,000	3,300	4,200	3,200	2,700	1,800	20,200	2,886	412.2
RM 02	3	3,600	5,400	2,000	2,800	4,200	3,800	3,800	25,600	3,657	1,219.0
RM 03	4	2,400	1,900	3,400	1,400	2,400	2,900	2,300	16,700	2,386	596.4
RM 04	15	2,400	1,600	4,700	3,200	5,900	4,200	6,400	28,400	4,057	270.5
RM 05	6	1,200	900	2,600	2,500	1,200	1,900	2,100	12,400	1,771	295.2
RM 06	5	***	800	***	4,700	900	3,700	1,400	11,500	1,643	328.6
RM 07	7	1,400	1,000	600	750	900	1,900	1,800	8,350	1,193	170.4
RM 08	5	1,000	1,400	4,200	3,000	4,200	3,700	1,800	19,300	2,757	551.4
RM 09	8	1,800	2,400	1,100	950	5,800	2,950	3,800	18,800	2,686	335.7
RM 10	12	2,600	1,800	3,000	3,200	2,400	3,200	2,000	18,200	2,600	216.7
RM 11	4	4,600	2,300	3,400	2,000	3,000	3,300	2,000	20,600	2,943	735.7
RM 12	6	5,400	2,400	2,100	1,400	1,500	5,500	2,800	21,100	3,014	502.4
RM 13	5	2,800	2,700	1,800	1,900	2,000	2,500	***	13,700	1,957	391.4
RM 14	8	5,600	6,800	2,800	1,800	3,800	1,400	2,600	24,800	3,543	442.9
RM 15	7	900	600	800	2,000	950	1,700	1,600	8,550	1,221	174.5
RM 16	6	2,600	5,600	3,500	4,900	3,000	1,600	800	22,000	3,143	523.8
RM 17	8	2,300	2,300	1,100	1,200	1,400	1,500	3,800	13,600	1,943	242.9
RM 18	5	3,800	1,200	2,300	1,000	1,400	3,400	2,900	16,000	2,286	457.1
RM 19	3	2,200	5,000	800	1,500	600	1,200	***	11,300	1,614	538.1
RM 20	7	4,600	4,800	3,700	2,300	2,700	2,600	3,100	23,800	3,400	485.7
RM 21	3	2,000	2,200	600	1,700	1,700	1,000	1,900	11,100	1,586	528.6
RM 22	6	2,100	5,200	2,800	2,500	1,900	2,000	3,300	19,800	2,829	471.4
RM 23	5	3,300	2,200	2,700	1,100	1,800	800	3,800	15,700	2,243	448.6
RM 24	6	2,200	3,400	2,500	2,300	3,000	7,000	8,800	29,200	4,171	695.2
RM 25	4	5,800	1,700	3,200	2,800	4,600	2,800	5,400	26,300	3,757	939.3
RM 26	5	3,300	4,400	4,500	3,100	2,600	4,600	4,700	27,200	3,886	777.1
RM 27	5	1,200	2,200	1,200	900	400	2,300	3,900	12,100	1,729	345.7
RM 28	9	800	800	1,800	1,500	1,200	2,600	3,400	12,100	1,729	192.1
RM 29	6	3,500	3,300	1,800	2,000	2,100	1,200	3,700	17,600	2,514	419.0
RM 30	8	2,400	1,300	2,000	1,400	3,200	3,300	3,400	17,000	2,429	303.6
Total	188	80,800	79,600	70,300	66,000	73,950	83,250	89,100	543,000	77,571	412.6
Average	6.27	2,693	2,653	2,343	2,200	2,465	2,775	2,970	18,100	2,586	412.6

Results of Waste Amount Survey in Matale (Generation Source: Residential Waste-Low Income)

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		July 7 (Sun.)	July 8 (Mon.)	July 9 (Tue.)	July 10 (Wed.)	July 11 (Thu.)	July 12 (Fri.)	July 13 (Sat.)		per day	per day/person
RL 01	5	2,800	900	1,950	3,800	2,200	1,600	900	14,150	2,021	404.3
RL 02	7	***	2,400	2,200	3,700	5,200	***	3,000	16,500	2,357	336.7
RL 03	13	6,000	3,500	2,600	4,000	2,800	2,600	2,500	24,000	3,429	263.7
RL 04	3	300	1,800	2,800	1,600	2,200	1,100	2,000	11,800	1,686	561.9
RL 05	6	1,600	1,900	2,150	1,800	3,800	3,000	2,600	16,850	2,407	401.2
RL 06	6	2,400	600	1,000	900	1,200	300	900	7,300	1,043	173.8
RL 07	5	1,200	1,200	750	1,150	2,600	1,000	1,400	9,300	1,329	265.7
RL 08	5	3,800	1,600	2,700	1,300	3,000	2,300	2,800	17,500	2,500	500.0
RL 09	4	2,200	1,800	1,500	1,800	1,200	3,800	1,700	14,000	2,000	500.0
RL 10	4	2,600	1,250	1,000	700	2,200	2,800	1,000	11,550	1,650	412.5
RL 11	7	3,900	5,600	2,900	4,800	4,000	3,800	5,600	30,600	4,371	624.5
RL 12	7	3,800	5,800	4,000	3,400	2,800	4,300	4,100	28,200	4,029	575.5
RL 13	7	2,200	1,900	1,200	3,200	1,100	1,600	1,100	12,300	1,757	251.0
RL 14	6	5,300	4,000	5,100	5,300	5,800	4,300	2,800	32,600	4,657	776.2
RL 15	4	1,600	900	1,600	1,700	1,900	1,800	1,800	11,300	1,614	403.6
RL 16	8	2,200	1,500	3,400	***	1,500	***	***	8,600	1,229	153.6
RL 17	5	1,400	2,500	4,200	1,200	2,200	3,900	1,400	16,800	2,400	480.0
RL 18	7	7,000	4,800	1,800	1,200	***	***	2,800	17,600	2,514	359.2
RL 19	7	2,200	5,900	2,500	500	4,800	5,700	900	22,500	3,214	459.2
RL 20	7	3,400	4,500	2,200	1,600	1,200	5,200	4,000	22,100	3,157	451.0
RL 21	6	1,800	6,800	2,800	8,000	3,400	2,900	2,400	28,100	4,014	669.0
RL 22	7	600	6,200	3,000	4,400	2,200	2,500	2,700	21,600	3,086	440.8
RL 23	4	400	3,900	1,200	1,000	1,500	900	1,400	10,300	1,471	367.9
RL 24	6	1,200	3,000	2,500	4,100	3,800	3,600	2,400	20,600	2,943	490.5
RL 25	5	1,600	2,000	3,000	1,600	4,200	2,000	800	15,200	2,171	434.3
RL 26	5	5,400	1,500	2,000	2,400	7,800	1,400	1,600	22,100	3,157	631.4
RL 27	5	4,200	2,100	1,800	2,400	2,000	3,300	2,000	17,800	2,543	508.6
RL 28	8	1,800	2,000	500	4,500	2,100	2,200	1,600	14,700	2,100	262.5
RL 29	5	800	2,400	1,200	1,400	500	800	1,200	8,300	1,186	237.1
RL 30	6	900	1,600	1,700	800	400	1,000	2,300	8,700	1,243	207.1
Total	180	74,600	85,850	67,250	74,250	79,600	69,700	61,700	512,950	73,279	407.1
Average	6.00	2,487	2,862	2,242	2,475	2,653	2,323	2,057	17,098	2,443	407.1

Summary of Waste Amount Survey in Matale

Generation Source: Residential Waste-High Income

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
30 residence	172	93,250	74,000	70,450	71,550	74,400	75,050	79,900	538,600	76,943	447.3
Average	5.73	3,108	2,467	2,348	2,385	2,480	2,502	2,663	17,953	2,565	447.3

Generation Source: Residential Waste-Middle Income

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
30 residence	188	80,800	79,600	70,300	66,000	73,950	83,250	89,100	543,000	77,571	412.6
Average	6.27	2,693	2,653	2,343	2,200	2,465	2,775	2,970	18,100	2,586	412.6

Generation Source: Residential Waste-Low Income

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
30 residence	180	74,600	85,850	67,250	74,250	79,600	69,700	61,700	512,950	73,279	407.1
Average	6.00	2,487	2,862	2,242	2,475	2,653	2,323	2,057	17,098	2,443	407.1

Generation Source: 90 Residential Waste

Sampling Point	No. of Person	Discharge Weight (g)							Total Amount (g)	Average (g)	
		Jun 15 (Sat.)	Jun 16 (Sun.)	Jun 17 (Mon.)	Jun 18 (Tue.)	Jun 19 (Wed.)	Jun 20 (Thu.)	Jun 21 (Fri.)		per day	per day/person
90 residence	540	248,650	239,450	208,000	211,800	227,950	228,000	230,700	1,594,550	227,793	421.8
Average	6.00	2,763	2,661	2,311	2,353	2,533	2,533	2,563	17,717	2,531	421.8

1.2.3 Waste Composition Survey Data

Results of Waste Composition Survey (Wet Base) in Matale (Discharge Source: Residential Waste-High Income)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jul.7 (Sun.)	(g)	3,098	547	54	168	53	757	15	38	110	0	0	4,840	3,855	985	36	10.2	0.28
	(%)	64.01	11.30	1.12	3.47	1.10	15.64	0.31	0.79	2.27	0.00	0.00	100.00	79.65	20.35			
Jul.8 (Mon.)	(g)	2,185	472	72	129	45	735	0	65	238	0	10	3,951	2,920	1,031	30	7.8	0.26
	(%)	55.30	11.95	1.82	3.26	1.14	18.60	0.00	1.65	6.02	0.00	0.25	100.00	73.91	26.09			
Jul.9 (Tue.)	(g)	1,828	324	65	87	65	378	42	0	64	64	12	2,929	2,206	723	34	10.5	0.31
	(%)	62.41	11.06	2.22	2.97	2.22	12.91	1.43	0.00	2.19	2.19	0.41	100.00	75.32	24.68			
Jul.10 (Wed.)	(g)	3,511	325	18	96	54	553	0	20	162	0	88	4,827	4,064	763	33	9.7	0.29
	(%)	72.74	6.73	0.37	1.99	1.12	11.46	0.00	0.41	3.36	0.00	1.82	100.00	84.19	15.81			
Jul.11 (Thu.)	(g)	3,998	422	39	98	52	570	9	9	0	0	7	5,204	4,568	636	30	10.0	0.33
	(%)	76.83	8.11	0.75	1.88	1.00	10.95	0.17	0.17	0.00	0.00	0.13	100.00	87.78	12.22			
Jul.12 (Fri.)	(g)	3,435	300	29	69	73	450	12	5	161	370	26	4,930	3,885	1,045	48	19.1	0.40
	(%)	69.68	6.09	0.59	1.40	1.48	9.13	0.24	0.10	3.27	7.51	0.53	100.00	78.80	21.20			
Jul.13 (Sat.)	(g)	3,247	405	8	112	24	381	9	15	36	104	0	4,341	3,628	713	30	10.4	0.35
	(%)	74.80	9.33	0.18	2.58	0.55	8.78	0.21	0.35	0.83	2.40	0.00	100.00	83.58	16.42			
Total	(g)	21,302	2,795	285	759	366	3,824	87	152	771	538	143	31,022	25,126	5,896	241	77.7	0.32
	(%)	68.67	9.01	0.92	2.45	1.18	12.33	0.28	0.49	2.49	1.73	0.46	100.00	80.99	19.01			

Results of Waste Composition Survey (Wet Base) in Matale (Discharge Source: Residential Waste-Middle Income)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jul.7 (Sun.)	(g)	1,880	141	45	86	38	892	49	5	0	185	22	3,343	2,772	571	26	5.5	0.21
	(%)	56.24	4.22	1.35	2.57	1.14	26.68	1.47	0.15	0.00	5.53	0.66	100.00	82.92	17.08			
Jul.8 (Mon.)	(g)	2,672	215	89	192	10	1,243	15	7	132	95	23	4,693	3,915	778	40	9.5	0.24
	(%)	56.94	4.58	1.90	4.09	0.21	26.49	0.32	0.15	2.81	2.02	0.49	100.00	83.42	16.58			
Jul.9 (Tue.)	(g)	3,482	165	115	83	14	1,102	0	5	68	301	18	5,353	4,584	769	39	10.9	0.28
	(%)	65.05	3.08	2.15	1.55	0.26	20.59	0.00	0.09	1.27	5.62	0.34	100.00	85.63	14.37			
Jul.10 (Wed.)	(g)	3,641	277	63	102	47	895	54	8	43	363	40	5,533	4,536	997	44	9.2	0.21
	(%)	65.81	5.01	1.14	1.84	0.85	16.18	0.98	0.14	0.78	6.56	0.72	100.00	81.98	18.02			
Jul.11 (Thu.)	(g)	1,890	123	20	41	17	540	8	23	31	162	6	2,861	2,430	431	28	5.1	0.18
	(%)	66.06	4.30	0.70	1.43	0.59	18.87	0.28	0.80	1.08	5.66	0.21	100.00	84.94	15.06			
Jul.12 (Fri.)	(g)	4,314	271	33	173	29	1,053	46	59	85	130	3	6,196	5,367	829	32	9.7	0.30
	(%)	69.63	4.37	0.53	2.79	0.47	16.99	0.74	0.95	1.37	2.10	0.05	100.00	86.62	13.38			
Jul.13 (Sat.)	(g)	3,267	419	123	142	17	1,212	15	9	38	136	3	5,381	4,479	902	39	11.3	0.29
	(%)	60.71	7.79	2.29	2.64	0.32	22.52	0.28	0.17	0.71	2.53	0.06	100.00	83.24	16.76			
Total	(g)	21,146	1,611	488	819	172	6,937	187	116	397	1,372	115	33,360	28,083	5,277	248	61.2	0.25
	(%)	63.39	4.83	1.46	2.46	0.52	20.79	0.56	0.35	1.19	4.11	0.34	100.00	84.18	15.82			

Results of Waste Composition Survey (Wet Base) in Matale (Discharge Source: Residential Waste-Low Income)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jul.7 (Sun.)	(g)	3,126	252	71	117	14	694	20	18	11	230	5	4,558	3,820	738	29	8.5	0.29
	(%)	68.58	5.53	1.56	2.57	0.31	15.23	0.44	0.39	0.24	5.05	0.11	100.00	83.81	16.19			
Jul.8 (Mon.)	(g)	3,464	388	47	236	50	865	11	10	18	246	10	5,345	4,329	1,016	37	12.6	0.34
	(%)	64.81	7.26	0.88	4.42	0.94	16.18	0.21	0.19	0.34	4.60	0.19	100.00	80.99	19.01			
Jul.9 (Tue.)	(g)	3,031	278	104	136	17	657	0	6	0	232	13	4,474	3,688	786	29	10.2	0.35
	(%)	67.75	6.21	2.32	3.04	0.38	14.68	0.00	0.13	0.00	5.19	0.29	100.00	82.43	17.57			
Jul.10 (Wed.)	(g)	2,621	273	37	107	17	392	11	20	0	61	73	3,612	3,013	599	26	6.6	0.25
	(%)	72.56	7.56	1.02	2.96	0.47	10.85	0.30	0.55	0.00	1.69	2.02	100.00	83.42	16.58			
Jul.11 (Thu.)	(g)	2,263	268	146	150	18	552	14	15	9	290	60	3,785	2,815	970	27	9.4	0.35
	(%)	59.79	7.08	3.86	3.96	0.48	14.58	0.37	0.40	0.24	7.66	1.59	100.00	74.37	25.63			
Jul.12 (Fri.)	(g)	2,685	349	50	120	48	614	45	9	0	60	16	3,996	3,299	697	38	8.7	0.23
	(%)	67.19	8.73	1.25	3.00	1.20	15.37	1.13	0.23	0.00	1.50	0.40	100.00	82.56	17.44			
Jul.13 (Sat.)	(g)	4,404	468	69	223	92	635	10	11	49	250	7	6,218	5,039	1,179	31	12.1	0.39
	(%)	70.83	7.53	1.11	3.59	1.48	10.21	0.16	0.18	0.79	4.02	0.11	100.00	81.04	18.96			
Total	(g)	21,594	2,276	524	1,089	256	4,409	111	89	87	1,369	184	31,988	26,003	5,985	217	68.1	0.31
	(%)	67.51	7.12	1.64	3.40	0.80	13.78	0.35	0.28	0.27	4.28	0.58	100.00	81.29	18.71			

Results of Waste Composition Survey (Wet Base) in Matale (Discharge Source: King Street Central Market)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jul.7 (Sun.)	(g)	4,927	598	49	139	23	680	33	7	75	148	3	6,682	5,607	1,075	28	12.8	0.46
	(%)	73.74	8.95	0.73	2.08	0.34	10.18	0.49	0.10	1.12	2.21	0.04	100.00	83.91	16.09			
Jul.8 (Mon.)	(g)	4,626	674	100	175	0	2,235	0	9	113	333	56	8,321	6,861	1,460	35	13.3	0.38
	(%)	55.59	8.10	1.20	2.10	0.00	26.86	0.00	0.11	1.36	4.00	0.67	100.00	82.45	17.55			
Jul.9 (Tue.)	(g)	7,007	1,060	61	305	12	361	0	10	0	38	2	8,856	7,368	1,488	42	15.0	0.36
	(%)	79.12	11.97	0.69	3.44	0.14	4.08	0.00	0.11	0.00	0.43	0.02	100.00	83.20	16.80			
Jul.10 (Wed.)	(g)	7,172	454	73	288	12	383	12	13	51	410	8	8,876	7,555	1,321	38	13.4	0.35
	(%)	80.80	5.11	0.82	3.24	0.14	4.32	0.14	0.15	0.57	4.62	0.09	100.00	85.12	14.88			
Jul.11 (Thu.)	(g)	2,172	212	34	238	18	1,713	10	7	21	298	8	4,731	3,885	846	31	9.8	0.32
	(%)	45.91	4.48	0.72	5.03	0.38	36.21	0.21	0.15	0.44	6.30	0.17	100.00	82.12	17.88			
Jul.12 (Fri.)	(g)	7,193	760	69	364	15	83	0	13	0	38	2	8,537	7,276	1,261	33	15.6	0.47
	(%)	84.26	8.90	0.81	4.26	0.18	0.97	0.00	0.15	0.00	0.45	0.02	100.00	85.23	14.77			
Jul.13 (Sat.)	(g)	5,777	1,417	52	292	10	109	0	4	61	51	8	7,781	5,886	1,895	48	16.3	0.34
	(%)	74.24	18.21	0.67	3.75	0.13	1.40	0.00	0.05	0.78	0.66	0.10	100.00	75.65	24.35			
Total	(g)	33,947	4,577	389	1,662	67	4,884	22	56	246	1,168	84	47,102	38,831	8,271	255	96.2	0.38
	(%)	72.07	9.72	0.83	3.53	0.14	10.37	0.05	0.12	0.52	2.48	0.18	100.00	82.44	17.56			

Results of Waste Composition Survey (Wet Base) in Matale (Discharge Source: Gongawela Market Area)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jul.7 (Sun.)	(g)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
	(%)																	
Jul.8 (Mon.)	(g)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
	(%)																	
Jul.9 (Tue.)	(g)	3,982	685	313	339	56	1,067	27	12	30	379	25	6,915	5,049	1,866	38	11.6	0.31
	(%)	57.58	9.91	4.53	4.90	0.81	15.43	0.39	0.17	0.43	5.48	0.36	100.00	73.02	26.98			
Jul.10 (Wed.)	(g)	3,782	540	71	277	10	281	39	18	11	85	8	5,122	4,063	1,059	38	12.1	0.32
	(%)	73.84	10.54	1.39	5.41	0.20	5.49	0.76	0.35	0.21	1.66	0.16	100.00	79.32	20.68			
Jul.11 (Thu.)	(g)	2,664	631	215	182	26	995	35	21	24	0	40	4,833	3,659	1,174	40	11.9	0.30
	(%)	55.12	13.06	4.45	3.77	0.54	20.59	0.72	0.43	0.50	0.00	0.83	100.00	75.71	24.29			
Jul.12 (Fri.)	(g)	4,571	620	104	190	13	883	0	10	19	104	8	6,522	5,454	1,068	33	12.1	0.37
	(%)	70.09	9.51	1.59	2.91	0.20	13.54	0.00	0.15	0.29	1.59	0.12	100.00	83.62	16.38			
Jul.13 (Sat.)	(g)	3,184	1,099	53	257	43	720	154	22	26	20	4	5,582	3,904	1,678	32	10.8	0.34
	(%)	57.04	19.69	0.95	4.60	0.77	12.90	2.76	0.39	0.47	0.36	0.07	100.00	69.94	30.06			
Total	(g)	18,183	3,575	756	1,245	148	3,946	255	83	110	588	85	28,974	22,129	6,845	181	58.5	0.32
	(%)	62.76	12.34	2.61	4.30	0.51	13.62	0.88	0.29	0.38	2.03	0.29	100.00	76.38	23.62			

Summary of Waste Composition Survey (Wet Base) in Matale (1/3)

Discharge Source: Residential Waste-High Income

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
July 7~13	(g)	21,302	2,795	285	759	366	3,824	87	152	771	538	143	31,022	25,126	5,896	241	77.7	0.32
	(%)	68.67	9.01	0.92	2.45	1.18	12.33	0.28	0.49	2.49	1.73	0.46	100.00	80.99	19.01			

Discharge Source: Residential Waste-Middle Income

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
July 7~13	(g)	21,146	1,611	488	819	172	6,937	187	116	397	1,372	115	33,360	28,083	5,277	248	61.2	0.25
	(%)	63.39	4.83	1.46	2.46	0.52	20.79	0.56	0.35	1.19	4.11	0.34	100.00	84.18	15.82			

Discharge Source: Residential Waste-Low Income

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
July 7~13	(g)	21,594	2,276	524	1,089	256	4,409	111	89	87	1,369	184	31,988	26,003	5,985	217	68.1	0.31
	(%)	67.51	7.12	1.64	3.40	0.80	13.78	0.35	0.28	0.27	4.28	0.58	100.00	81.29	18.71			

Summary of Waste Composition Survey (Wet Base) in Matale (2/3)

Discharge Source: King Street Central Market

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
July 7~13	(g)	33,947	4,577	389	1,662	67	4,884	22	56	246	1,168	84	47,102	38,831	8,271	255	96.2	0.38
	(%)	72.07	9.72	0.83	3.53	0.14	10.37	0.05	0.12	0.52	2.48	0.18	100.00	82.44	17.56			

Discharge Source: Gongawela Market Area

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
July 7~13	(g)	18,183	3,575	756	1,245	148	3,946	255	83	110	588	85	28,974	22,129	6,845	181	58.5	0.32
	(%)	62.76	12.34	2.61	4.30	0.51	13.62	0.88	0.29	0.38	2.03	0.29	100.00	76.38	23.62			

1.2.4 Moisture Content Analysis

Date	Generation Source	No. of Samples	Total No. of Samples
July 7, 2002	King Street Central Market Waste	1	3
	High Income House Hold Waste	1	
	Collection Vehicle Waste	1	
July 8, 2003	King Street Central Market Waste	1	4
	Middle Income House hold Waste	1	
	Collection Vehicle Waste	1	
	High Income House Hold Waste	1	
July 9, 2002	Low Income House hold Waste	1	6
	King Street Central Market Waste	1	
	Middle Income House hold Waste	1	
	Collection Vehicle Waste	1	
	Gongawela Market Waste	1	
	High Income House Hold Waste	1	
July 10, 2002	Middle Income House hold Waste	1	6
	High Income House Hold Waste	1	
	Low Income House hold Waste	1	
	Collection Vehicle Waste	1	
	Gongawela Market Waste	1	
	King Street Central Market Waste	1	
July 11, 2002	Gongawela Market Waste	1	5
	Middle Income House hold Waste	1	
	Low Income House hold Waste	1	
	High Income House Hold Waste	1	
	King Street Central Market Waste	1	
July 12, 2002	Gongawela Market Waste	1	3
	Low Income House hold Waste	1	
	Middle Income House hold Waste	1	
July 13, 2002	Collection Vehicle Waste	1	3
	Low Income House hold Waste	1	
	Gongawela Market Waste	1	
	Total		**30**

Generation Source: Collection Vehicle Waste

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	July 7, 2002	6,016	2,915	51.546
2	July 8, 2002	5,745	2,296	60.035
3	July 9, 2002	4,019	1,583	60.612
4	July 10, 2002	4,477	2,208	50.681
5	July 13, 2002	4,141	2,053	50.423
Average				54.659

Generation Source: Gongawela Market

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	July 9, 2002	4,660	2,651	43.112
2	July 10, 2002	4,104	2,702	34.162
3	July 11, 2002	4,545	2,368	47.899
4	July 12, 2002	4,534	1,589	64.954
5	July 13, 2002	4,513	1,479	67.228
Average				51.471

Generation Source: King Street Central Market

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	July 7, 2002	6,106	3,005	50.786
2	July 8, 2002	6,725	4,501	33.071
3	July 9, 2002	4,303	3,082	28.376
4	July 10, 2002	4,369	2,926	33.028
5	July 11, 2002	4,325	1,416	67.260
Average				42.504

Generation Source: Residential Waste (Low Income)

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	July 9, 2002	4,450	1,819	59.124
2	July 10, 2002	3,011	1,601	46.828
3	July 11, 2002	4,566	1,816	60.228
4	July 12, 2002	4,179	2,228	46.686
5	July 13, 2002	4,380	2,274	48.082
Average				52.190

Generation Source: Residential Waste (Middle Income)

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	July 8, 2002	4,445	2,499	43.780
2	July 9, 2002	4,496	2,214	50.756
3	July 10, 2002	4,308	2,001	53.552
4	July 11, 2002	1,950	906	53.538
5	July 12, 2002	4,528	2,655	41.365
Average				48.598

Generation Source: Residential Waste (High Income)

No.	Survey Date	Weight (Wet Basis) (gram)	Weight (Dry Basis) (gram)	Moisture Content (%)
1	July 7, 2002	5,610	3,551	36.702
2	July 8, 2002	4,055	2,144	47.127
3	July 9, 2002	4,521	2,495	44.813
4	July 10, 2002	4,370	2,632	39.771
5	July 11, 2002	4,357	1,468	66.307
Average				46.944

2 Composition of Waste taken from Waste Collection Vehicles

2.1 Badulla

Collection Date	Item	Physical Composition (g)											Total			Bulk Density		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total	Organic Waste	Others	Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
25-Sep-02	(g)	4,483	516	125	240	14	632	79	87	60	404	23	6,663	5,115	1,548	44	11.1	0.25
	(%)	67.28	7.74	1.88	3.60	0.21	9.49	1.19	1.31	0.90	6.06	0.35	100.00	76.77	23.23			
26-Sep-02	(g)	2,972	365	66	134	21	716	0	86	75	50	17	4,502	3,688	814	36	9.0	0.25
	(%)	66.02	8.11	1.47	2.98	0.47	15.90	0.00	1.91	1.67	1.11	0.38	100.00	81.92	18.08			
27-Sep-02	(g)	4,100	376	69	80	1	365	35	19	62	50	10	5,167	4,465	702	36	9.6	0.27
	(%)	79.35	7.28	1.34	1.55	0.02	7.06	0.68	0.37	1.20	0.97	0.19	100.00	86.41	13.59			
28-Sep-02	(g)	5,155	1,560	80	350	40	1,952	1	15	275	222	11	9,661	7,107	2,554	48	21.6	0.45
	(%)	53.36	16.15	0.83	3.62	0.41	20.20	0.01	0.16	2.85	2.30	0.11	100.00	73.56	26.44			
Total	(g)	16,710	2,817	340	804	76	3,665	115	207	472	726	61	25,993	20,375	5,618	164	51.3	0.31
	(%)	64.29	10.84	1.31	3.09	0.29	14.10	0.44	0.80	1.82	2.79	0.23	100.00	78.39	21.61			

2.2 Chilaw

Results of Waste Composition Survey (Wet Base) in Chilaw (Discharge Source: Vehicle Collection Waste)

Collection Date	Item	Physical Composition (g)											Total			Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total	Organic Waste	Others	Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
Jul.22 (Mon.)	(g)	1,624	390	32	150	66	1,053	10	22	22	734	324	4,427	2,677	1,750	48	9.6	0.20
	(%)	36.68	8.81	0.72	3.39	1.49	23.79	0.23	0.50	0.50	16.58	7.32	100.00	60.47	39.53			
Jul.23 (Tue.)	(g)	1,272	179	51	89	35	829	0	80	3	239	375	3,152	2,101	1,051	44	7.8	0.18
	(%)	40.36	5.68	1.62	2.82	1.11	26.30	0.00	2.54	0.10	7.58	11.90	100.00	66.66	33.34			
Jul.24 (Wed.)	(g)	1,844	305	90	164	29	1,965	7	3	8	598	360	5,373	3,809	1,564	44	9.8	0.22
	(%)	34.32	5.68	1.68	3.05	0.54	36.57	0.13	0.06	0.15	11.13	6.70	100.00	70.89	29.11			
Total	(g)	4,740	874	173	403	130	3,847	17	105	33	1,571	1,059	12,952	8,587	4,365	136	27.2	0.20
	(%)	36.60	6.75	1.34	3.11	1.00	29.70	0.13	0.81	0.25	12.13	8.18	100.00	66.30	33.70			

2.3 Gampaha

Results of Waste Composition Survey (Wet Base) in Gampaha (Discharge Source: Vehicle Collection Waste)

Collection Date	Item	Physical Composition (g)											Total			Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total	Organic Waste	Others	Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
Jul.25 (Thu.)	(g)	2,282	552	66	304	68	843	19	21	77	0	3	4,235	3,125	1,110	45	8.6	0.19
	(%)	53.88	13.03	1.56	7.18	1.61	19.91	0.45	0.50	1.82	0.00	0.07	100.00	73.79	26.21			
Jul.26 (Fri.)	(g)	1,656	548	46	159	42	332	11	14	45	84	47	2,984	1,988	996	40	4.2	0.11
	(%)	55.50	18.36	1.54	5.33	1.41	11.13	0.37	0.47	1.51	2.82	1.58	100.00	66.62	33.38			
Jul.27 (Sat.)	(g)	1,457	252	26	149	8	262	4	9	5	27	2	2,201	1,719	482	28	4.2	0.15
	(%)	66.20	11.45	1.18	6.77	0.36	11.90	0.18	0.41	0.23	1.23	0.09	100.00	78.10	21.90			
Total	(g)	5,395	1,352	138	612	118	1,437	34	44	127	111	52	9,420	6,832	2,588	113	17.0	0.15
	(%)	57.27	14.35	1.46	6.50	1.25	15.25	0.36	0.47	1.35	1.18	0.55	100.00	72.53	27.47			

2.4 Kandy

Results of Waste Composition Survey (Wet Base) in Kandy (Discharge Source: Vehicle Collection Waste)

Collection Date	Item	Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jun.15 (Sat.)	(g)	2,295	568	10	354	19	395	0	9	76	351	0	4,077	2,690	1,387	21	6.2	0.30
	(%)	56.29	13.93	0.25	8.68	0.47	9.69	0.00	0.22	1.86	8.61	0.00	100.00	65.98	34.02			
Jun.16 (Sun.)	(g)	4,085	755	4	345	13	460	0	0	0	270	3	5,935	4,545	1,390	38	13.6	0.36
	(%)	68.83	12.72	0.07	5.81	0.22	7.75	0.00	0.00	0.00	4.55	0.05	100.00	76.58	23.42			
Jun.17 (Mon.)	(g)	2,540	548	114	335	84	450	56	205	28	154	108	4,622	2,990	1,632	32	10.4	0.33
	(%)	54.95	11.86	2.47	7.25	1.82	9.74	1.21	4.44	0.61	3.33	2.34	100.00	64.69	35.31			
Jun.18 (Tue.)	(g)	3,236	809	51	808	43	983	26	0	115	308	0	6,379	4,219	2,160	40	13.5	0.34
	(%)	50.73	12.68	0.80	12.67	0.67	15.41	0.41	0.00	1.80	4.83	0.00	100.00	66.14	33.86			
Jun.19 (Wed.)	(g)	2,348	376	102	293	34	656	21	17	127	207	0	4,181	3,004	1,177	34	10.6	0.31
	(%)	56.16	8.99	2.44	7.01	0.81	15.69	0.50	0.41	3.04	4.95	0.00	100.00	71.85	28.15			
Jun.20 (Thu.)	(g)	3,130	640	145	225	19	305	83	5	0	385	15	4,952	3,435	1,517	40	11.2	0.28
	(%)	63.21	12.92	2.93	4.54	0.38	6.16	1.68	0.10	0.00	7.77	0.30	100.00	69.37	30.63			
Jun.21 (Fri.)	(g)	1,801	292	42	72	10	860	40	43	32	38	9	3,239	2,661	578	32	6.4	0.20
	(%)	55.60	9.02	1.30	2.22	0.31	26.55	1.23	1.33	0.99	1.17	0.28	100.00	82.15	17.85			
Total	(g)	19,435	3,988	468	2,432	222	4,109	226	279	378	1,713	135	33,385	23,544	9,841	237	71.9	0.30
	(%)	58.21	11.95	1.40	7.28	0.66	12.31	0.68	0.84	1.13	5.13	0.40	100.00	70.52	29.48			

2.5 Matale

Results of Waste Composition Survey (Wet Base) in Matale (Discharge Source: Vehicle Collection Waste)

Collection Date	Item	Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jul.7 (Sun.)	(g)	2,753	372	63	231	10	1,158	19	24	77	252	27	4,986	3,911	1,075	38	11.1	0.29
	(%)	55.21	7.46	1.26	4.63	0.20	23.23	0.38	0.48	1.54	5.05	0.54	100.00	78.44	21.56			
Jul.8 (Mon.)	(g)	4,853	494	132	277	52	1,288	56	40	29	579	20	7,820	6,141	1,679	40	16.4	0.41
	(%)	62.06	6.32	1.69	3.54	0.66	16.47	0.72	0.51	0.37	7.40	0.26	100.00	78.53	21.47			
Jul.9 (Tue.)	(g)	3,612	388	103	240	17	1,501	22	19	15	1,146	36	7,099	5,113	1,986	38	13.1	0.34
	(%)	50.88	5.47	1.45	3.38	0.24	21.14	0.31	0.27	0.21	16.14	0.51	100.00	72.02	27.98			
Jul.10 (Wed.)	(g)	4,248	470	52	170	15	825	0	55	8	172	5	6,020	5,073	947	40	13.2	0.33
	(%)	70.56	7.81	0.86	2.82	0.25	13.70	0.00	0.91	0.13	2.86	0.08	100.00	84.27	15.73			
Jul.11 (Thu.)	(g)	4,258	436	36	274	43	1,004	0	40	20	372	5	6,488	5,262	1,226	44	11.4	0.26
	(%)	65.63	6.72	0.55	4.22	0.66	15.47	0.00	0.62	0.31	5.73	0.08	100.00	81.10	18.90			
Jul.12 (Fri.)	(g)	3,406	226	73	382	19	1,295	158	7	0	414	23	6,003	4,701	1,302	28	10.0	0.36
	(%)	56.74	3.76	1.22	6.36	0.32	21.57	2.63	0.12	0.00	6.90	0.38	100.00	78.31	21.69			
Jul.13 (Sat.)	(g)	4,919	545	29	228	33	1,230	251	5	15	87	4	7,346	6,149	1,197	37	13.1	0.35
	(%)	66.96	7.42	0.39	3.10	0.45	16.74	3.42	0.07	0.20	1.18	0.05	100.00	83.71	16.29			
Total	(g)	28,049	2,931	488	1,802	189	8,301	506	190	164	3,022	120	45,762	36,350	9,412	265	88.3	0.33
	(%)	61.29	6.40	1.07	3.94	0.41	18.14	1.11	0.42	0.36	6.60	0.26	100.00	79.43	20.57			

2.6 Negombo

Results of Waste Composition Survey (Wet Base) in Negombo (Discharge Source: Vehicle Collection Waste)

Item / Collection Date		Physical Composition (g)														Apparent Specific Gravity		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
Jul.17 (Wed.)	(g)	952	215	63	68	23	1,018	6	4	5	98	115	2,567	1,970	597	34	5.9	0.17
	(%)	37.09	8.38	2.45	2.65	0.90	39.66	0.23	0.16	0.19	3.82	4.48	100.00	76.74	23.26			
Jul.18 (Thu.)	(g)	2,219	515	90	193	39	1,226	52	29	23	569	42	4,997	3,445	1,552	46	11.8	0.26
	(%)	44.41	10.31	1.80	3.86	0.78	24.53	1.04	0.58	0.46	11.39	0.84	100.00	68.94	31.06			
Jul.19 (Fri.)	(g)	2,800	430	305	260	38	995	65	26	79	435	105	5,538	3,795	1,743	48	15.0	0.31
	(%)	50.56	7.76	5.51	4.69	0.69	17.97	1.17	0.47	1.43	7.85	1.90	100.00	68.53	31.47			
Total	(g)	5,971	1,160	458	521	100	3,239	123	59	107	1,102	262	13,102	9,210	3,892	128	32.7	0.26
	(%)	45.57	8.85	3.50	3.98	0.76	24.72	0.94	0.45	0.82	8.41	2.00	100.00	70.29	29.71			

2.7 Nuwara Eliya

Results of Waste Composition Survey (Wet Base) in Nuwara Eliya (Discharge Source: Vehicle Collection Waste)

Item / Collection Date		Physical Composition (g)														Bulk Density		
		Kitchen Waste	Paper	Textile	Soft Plastic	Hard Prastic	Grass & Wood	Leather & Rubber	Metal	Glass	Ceramic & Stone	Other	Total			Quantity (litter)	Amount (kg)	Bulk Density (kg/litter)
													Total	Organic Waste	Others			
12-Sep-02	(g)	3,552	415	77	172	11	420	0	11	1	79	14	4,752	3,972	780	28	11.5	0.41
	(%)	74.75	8.73	1.62	3.62	0.23	8.84	0.00	0.23	0.02	1.66	0.29	100.00	83.59	16.41			
13-Sep-02	(g)	3,203	687	101	447	15	351	0	92	151	183	10	5,240	3,554	1,686	27.5	10.8	0.39
	(%)	61.13	13.11	1.93	8.53	0.29	6.70	0.00	1.76	2.88	3.49	0.19	100.00	67.82	32.18			
14-Sep-02	(g)	9,041	1,470	132	621	16	466	21	86	31	177	3	12,064	9,507	2,557	46	17.0	0.37
	(%)	74.94	12.19	1.09	5.15	0.13	3.86	0.17	0.71	0.26	1.47	0.02	100.00	78.80	21.20			
15-Sep-02	(g)	5,501	734	53	372	34	470	21	22	92	323	61	7,683	5,971	1,712	31	12.4	0.40
	(%)	71.60	9.55	0.69	4.84	0.44	6.12	0.27	0.29	1.20	4.20	0.79	100.00	77.72	22.28			
Total	(g)	21,297	3,306	363	1,612	76	1,707	42	211	275	762	88	29,739	23,004	6,735	133	51.7	0.39
	(%)	71.61	11.12	1.22	5.42	0.26	5.74	0.14	0.71	0.92	2.56	0.30	100.00	77.35	22.65			

3 Waste Transportation Amount Survey

Vehicle	4WT
Reg No	270-1559
Vol (m3)	6.26
Empty wt (kg)	3680

Dimensions	Value(m)
Length (m)	2.9
Width (m)	1.8
Height (m)	1.2

Sample	Date	Day	Time	Full wt (kg)	Refuse wt (kg)	Fill factor	Filled vol (m3)	In-vehicle density (kg/m3)	Bulk density (sample)		
									Wt (kg)	Vol (L)	kg/m3
1	2002/7/31	Wed	9:54	5470	1790	75	4.70	381	11.4	43	265
2	2002/7/31	Wed	12:06	5620	1940	80	5.01	387	8.3	48	173
3	2002/7/31	Wed	14:03	5390	1710	100	6.26	273	13.3	40	333
4	2002/8/1	Thu	9:46	5700	2020	70	4.38	461	6.1	38	161
5	2002/8/1	Thu	11:12	5680	2000	95	5.95	336	9.2	40	230
6	2002/8/1	Thu	12:36	5060	1380	85	5.32	259	7.6	39	195
7	2002/8/2	Fri	9:45	5010	1330	50	3.13	425	10.8	45	240
8	2002/8/2	Fri	11:50	6440	2760	95	5.95	464	10.3	42	245
9	2002/8/6	Tue	10:07	7010	3330	100	6.26	532	5.8	44	132
10	2002/8/7	Wed	9:53	6060	2380	100	6.26	380	3.2	44	73
	Total			57440	20640	850	53	3897	86	423	2046
	Average			5744	2064	85	5.32	390	8.6	42	205

Estimated max vehicle capacity: **2428** kg (100% full; I.e. refuse wt/fill factor)

Vehicle	Small Compactor
Reg No	229-0884
Vol (m3)	4.00
Empty wt (kg)	3810

Sample	Date	Day	Time	Full wt (kg)	Refuse wt (kg)	Fill factor	Filled vol (m3)	In-vehicle density (kg/m3)	
1	2002/7/31	Wed	11:04	6360	2550	100	4.00	638	
2	2002/7/31	Wed	13:32	4530	720	75	3.00	240	Abnormal
3	2002/7/31	Wed	22:00	6160	2350	100	4.00	588	
4	2002/8/1	Thu	10:39	6330	2520	100	4.00	630	
5	2002/8/2	Fri	10:40	6210	2400	95	3.80	632	
6	2002/8/2	Fri	14:27	5660	1850	80	3.20	578	
7	2002/8/5	Mon	10:48	6180	2370	100	4.00	593	
8	2002/8/5	Mon	14:03	4560	750	60	3.20	234	Abnormal
9	2002/8/6	Tue	10:41	6410	2600	100	4.00	650	
10	2002/8/6	Tue	14:10	6040	2230	100	4.00	558	
	Total			58440	20340	930	37	5339	
	Average			5844	2034	93	3.72	534	

Estimated max vehicle capacity: **2187** kg (100% full; I.e. refuse wt/fill factor)

Revised Data (excluding 2 abnormal values)

Sample	Date	Day	Time	Full wt (kg)	Refuse wt (kg)	Fill factor	Filled vol (m3)	In-vehicle density (kg/m3)
1	2002/7/31	Wed	11:04	6360	2550	100	4.00	638
2	2002/7/31	Wed	13:32	4530				
3	2002/7/31	Wed	22:00	6160	2350	100	4.00	588
4	2002/8/1	Thu	10:39	6330	2520	100	4.00	630
5	2002/8/2	Fri	10:40	6210	2400	95	3.80	632
6	2002/8/2	Fri	14:27	5660	1850	80	3.20	578
7	2002/8/5	Mon	10:48	6180	2370	100	4.00	593
8	2002/8/5	Mon	14:03	4560				
9	2002/8/6	Tue	10:41	6410	2600	100	4.00	650
10	2002/8/6	Tue	14:10	6040	2230	100	4.00	558
	Total			58440	18870	775	31	4865
	Average			5844	2359	97	3.88	608

Estimated max vehicle capacity: **2435** kg (100% full; I.e. refuse wt/fill factor)

Vehicle	**Large Compactor**
Reg No	229-9062
Vol (m3)	8.00
Empty wt (kg)	5450

Sample	Date	Day	Time	Full wt (kg)	Refuse wt (kg)	Fill factor	Filled vol (m3)	In-vehicle density (kg/m3)
1	2002/7/31	Wed	12:24	8910	3460	100	8.00	433
2	2002/8/1	Thu	10:25	8580	3130	100	8.00	391
3	2002/8/1	Thu	22:22	10050	4600	100	8.00	575
4	2002/8/2	Fri	13:16	9210	3760	100	8.00	470
5	2002/8/5	Mon	13:16	9940	4490	100	8.00	561
6	2002/8/6	Tue	12:41	8800	3350	100	8.00	419
7	2002/8/7	Wed	11:26	9350	3900	100	8.00	488
8	2002/8/8	Thu	13:39	9060	3610	100	8.00	451
9	2002/8/9	Fri	13:06	10140	4690	100	8.00	586
10	2002/8/12	Mon	17:23	10570	5120	100	8.00	640
	Total			94610	40110	1000	80	5014
	Average			9461	4011	100	8.00	501

Estimated max vehicle capacity: **4011** kg (100% full; I.e. refuse wt/fill factor)