

Chapter 2
NMC SWM System –
Additional Details

Contents

	Page:
Chapter 2 NMC SWM System – Additional Details	2-1
2.1 Waste Management Equipment – Detailed Data.....	2-1
2.2 Waste Collection/Disposal Fees	2-2
2.3 SWM Discharge/Collection – Additional Information	2-2
2.3.1 NMC Garbage Discharge and Collection Details	2-2
2.3.2 Sample Photos of the Garbage Discharge System	2-4
2.3.3 Sample Photos of the NMC Garbage Collection System	2-5
2.3.4 Garbage Collection Daily Routine.....	2-5
2.3.5 Time and Motion Data	2-6
2.3.6 Privatisation of Bazaar Area	2-7
2.3.7 NMC Collection Vehicle Unit Costs	2-7
2.4 Final Disposal.....	2-8
2.4.1 Assessment of Current Landfill Site	2-8
2.4.2 Ovitiyawatta Landfill Site Issues.....	2-11
2.4.3 Gully Sucker Waste	2-12

List of Tables

Table 2-1: Waste Management Vehicle Fleet and Supporting Equipment.....	2-1
Table 2-2: Gully Sucker Collection Charges	2-2
Table 2-3: NMC Gully Sucker Income.....	2-2
Table 2-4: NMC Garbage Discharge and Collection System Details.....	2-2
Table 2-5: Time and Motion Study Summary	2-6
Table 2-6: NMC Collection Vehicle Unit Costs.....	2-8
Table 2-7: Assessment of Current Landfill Site.....	2-8

List of Figures

Figure 2-1: Current Condition of Ovitiyawatta Landfill.....	2-10
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Vehicles/ equipment	No	Use (Capacity)	Regis- tration	Regis- tration date	Cost	Approx. Life (yrs)
D4C Bulldozer	1	Final disposal site operations (80hp net)	Hire	N/a	N/a	N/a

Notes:

1. Tractor lifetime is based on the age of actual tractors still in service, the oldest tractor being 21 years old. Tractors should be able to be used for at least 10 years, if maintained well.
2. Trailers require repairs after two years, but can last up to 5-6years, if maintained well.
3. Two tractors are currently hired at a rate of 1,100Rs/d.
4. The bulldozer is hired for about 45-50h/mth at a cost of 60,000Rs/mth.

2.2 Waste Collection/Disposal Fees

Gully sucker charges are summarized below, while corresponding income over the period June 2001-May 2002 is summarised in the second table.

Table 2-2: Gully Sucker Collection Charges

Location	Residential	Business	Tourist Hotels	Industries	Government Depts, Schools, Religious Places
Within NMA	First: 150 Extra: 150	First: 500 Extra: 250	First: 1,500 Extra: 500	First: 2,000 Extra: 350	First: 150 Extra: 100
Outside NMA	First: 1,000 Extra: 750	First: 4,000 Extra: 750	First: 4,000 Extra: 750	First: 4,000 Extra: 750	First: 1,000 Extra: 750

Note: Rates are for septic tanks/tratines and exclude GST. An additional Rs30/km transport charge is levied for services provided outside of NMA.

Table 2-3: NMC Gully Sucker Income

Month	Gully sucker income
June 2001	93,318.75
July	65,148.75
August	61,593.75
September	68,591.00
October	68,400.00
November	131,771.25
December	43,530.00
January 2002	75,926.25
February	80,572.50
March	87,480.00
April	80,280.00
May	108,416.25
Total	965,028.50

2.3 SWM Discharge/Collection – Additional Information

2.3.1 NMC Garbage Discharge and Collection Details

Important characteristics of Negombo's SWM collection zones are summarised below.

Table 2-4: NMC Garbage Discharge and Collection System Details

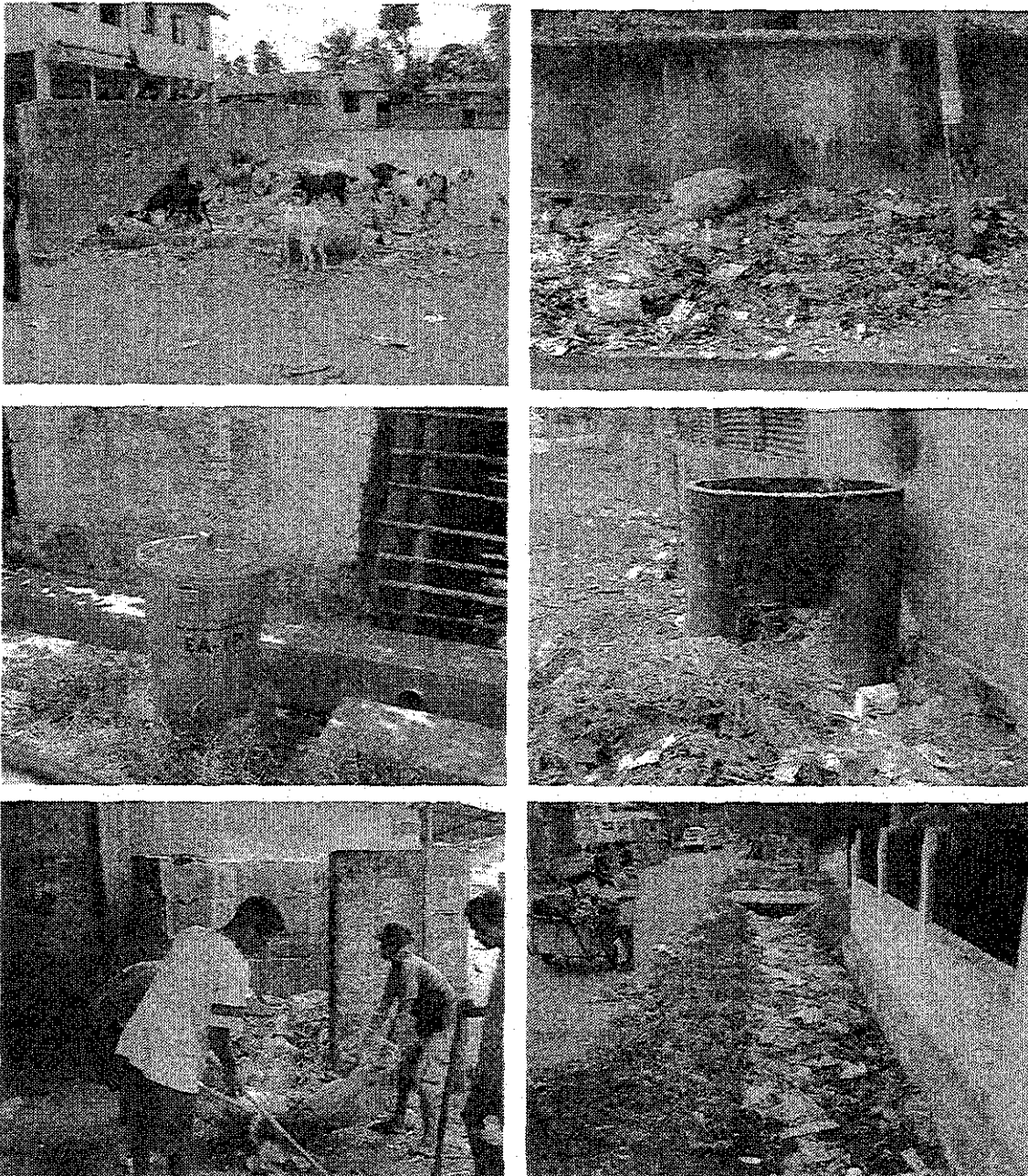
Area	Collection System
Bazaar I	<ul style="list-style-type: none"> • The area around Bandaranayaka Square and Grand St give their garbage directly to handcart. • Daily collection throughout most of zone, except along DS Senanayake Mw and Ramani Mw (every 2 days). • Transfer station in central city area, with one stationary trailer.
Bazaar II	<ul style="list-style-type: none"> • Area bounded by Sea St, 5th Cross St, Mudaliyars Rd and Circular Rd give their garbage directly to handcart; residents along Alles Rd discharge their garbage in bags/containers

Area	Collection System
	<p>for collection by NMC.</p> <ul style="list-style-type: none"> • Daily collection throughout zone. • Two stationary trailers parked at various locations within area during the day.
Munnakkaraya	Limited daily collection along main roads; side roads are collected 2-3 times/wk.
Periyamulla I	~90% of area collected daily; ~10% every second day.
Periyamulla II	<ul style="list-style-type: none"> • Some residents give their garbage directly to handcarts. • ~80% of area collected daily, ~20% every second day.
Kudapaduwa	<ul style="list-style-type: none"> • Residents in six roads give their garbage directly to tractor in reusable polysack bags given to them by NMC; residents of two other roads have their own plastic bins and give their garbage directly to tractor. • Main roads are collected daily; other roads 2-3 times/wk.
Kurana I	<ul style="list-style-type: none"> • Daily collection along main roads; every second day in other areas. • Stationary trailer for Base Hospital waste.
Kurana II	<ul style="list-style-type: none"> • Garbage is collected in most areas 2-4 times per wk and only once per week in other areas. • Two areas have scheduled days for garbage collection – some people bring their garbage out when they hear the tractor coming; others put it outside before leaving home on that day. Various containers are used, including baskets, polysacks and dustbins.
Kadolkele	<ul style="list-style-type: none"> • Residents in three parts of Kadolkele have been supplied with dustbins¹ (part of the Urban Settlement Improvement programme, with funding from EA1P), with MC labourers undertaking primary collection using two handcarts², discharging the garbage at a large concrete bin (~12 handcart loads per day). • There is another temporary collection point in this area, where about seven handcart loads are discharged daily. • In the "Miraj House" HS area, residents give their garbage directly to the tractor on scheduled collection days for collection. • Garbage is collected either daily or every second day throughout this area
Kochchikade	<ul style="list-style-type: none"> • People discharge their garbage anywhere at any time, usually by direct discharge on to the ground. • Daily collection along main road and in the Kochchikade commercial area; 1-3 times per week collection in other areas.
Porutota	Daily collection only on main roads; other places are collected once per week.
Dalupotha	<ul style="list-style-type: none"> • People use a variety of containers, with people discharging their waste outside their premises or giving directly to the collection vehicle • Once per week collection (although high population density in some areas).
Daluwakotuwa	<ul style="list-style-type: none"> • Some areas keep their waste in bags for collection on a scheduled day. • Collected twice per week along St Annes, Palinsena and Rediwela Rds; once per wk in other areas.
Thalahena	Garbage is only collected from the Duwa area, twice per week (Wed and Sat).

¹ At a subsidised rate of 80-100Rs ea.

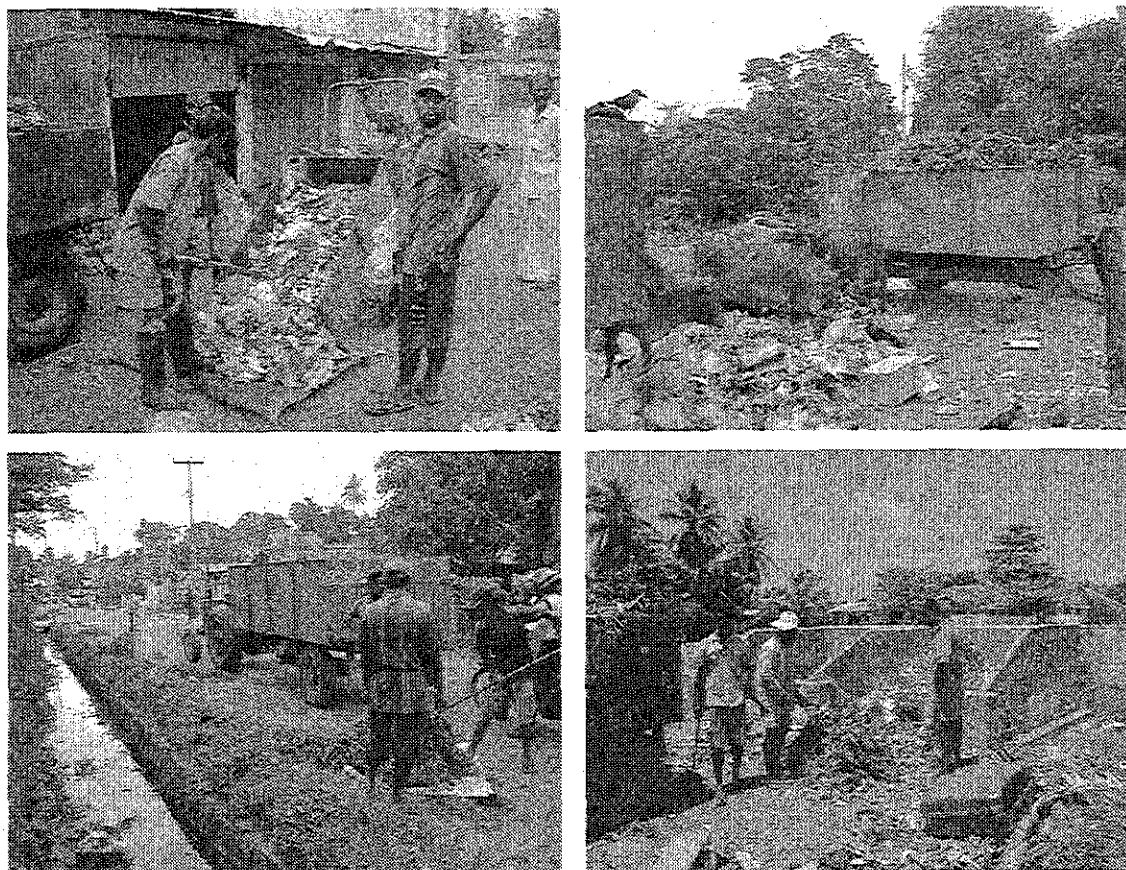
² Six handcarts have been supplied but only two are currently being used.

2.3.2 Sample Photos of the Garbage Discharge System



Garbage Discharge: top – discharge onto ground (left = Raumanabad); middle left – household dustbin, Kadolkele; middle right - one of large round concrete bins; bottom left – Bandula market bin; bottom right – drain near bus stand full of garbage.

2.3.3 Sample Photos of the NMC Garbage Collection System



Some examples of the NMC garbage collection system: top left – unloading handcart near Bandula market; top right – Central city transfer station; bottom left – collecting drain cleanings; bottom right – unloading large concrete bin in Kadolkale

2.3.4 Garbage Collection Daily Routine

Working hours are from 6am-2pm Mon-Fri and 6-11am on Saturday. About six tractors also work on Sundays, where garbage is collected from critical areas only (e.g. Bazaar I & II, Kudapaduwa and Munnakkaraya). As the Bazaar I and II areas become very busy by around 8am, handcart labourers in these areas usually begin work around 5am, reporting for the roll call at 6am and then continuing work.

Each morning, roll calls are taken by the CPHI and Supervisors at the NMC Office, Bazaar Zone Office and Kochchikade sub-office, following which day sheets are filled out, showing drivers and labourers assigned routes/tasks for that day, together with any special instructions (e.g. location of drain cleanings to be collected that day).

All garbage collection vehicles and trailers are parked near the NMC office, Kochchikade sub-office or Bazaar sub-office overnight, while handcarts are generally parked near their working areas.

Five supervisors have UNICEF funded Honda Chaly motorbikes, three use their own motorbikes and five use bicycles to travel around their work areas. Supervisors must fill out a running chart and produce

receipts for petrol purchased, with fuel purchases being reimbursed at the end of each month, while those supervisors using their own motorbikes are reimbursed an additional 400Rs/mth.

Each Supervisor is required to complete a daily “zone sheet” showing the roads from from which garbage should be collected each day, the actual roads collected, reasons for non-collection and the total number of tractor loads collected per day. Generally, supervisors enter a minimum of three trips per day, as NMC have imposed a condition that workers will not be paid overtime unless they complete three trips per day. This tends to result in an inflated number of trips, as discussed previously. These forms must be given to the CPHI each day, but are not cross-checked for accuracy, primarily because this is not possible due to the absence of a trip recording system at the disposal site.

Diesel is stored at the NMC Workshop Stores. Drivers must order diesel using a standard form, while all vehicles must complete a “running chart” record book, including a written description, start and finish odometer readings, trip distance (km), time in/out and fuel orders. These records must be signed by the Overseers and CPHI daily.

2.3.5 Time and Motion Data

JICA time and motion study results for two tractors from August 2002 are tabulated below.

Table 2-5: Time and Motion Study Summary

Item	Tractor	Tractor
Zone	Bazaar I	Kurana I + part of Periyamulla I
Start Time	06:44	07:10
Time for 1 st collection round	122min	131min
Travel to landfill	24min	25min
Unloading at landfill	4min	7min
Return from landfill	23min	25min (assumed)
Time at end of 1 st round	09:37	10:18
Total 1 st round loading time	79min	102.5min
Total 1 st round time	173min	188min
1 st round loading time (% of total time)	46%	55%
Time for 2 nd collection round	75min	Not surveyed
Estimated time for travel to and from landfill + unloading (as per 1 st round)	51min	
Time at end of 2 nd collection round	11:43	
Total 2 nd round loading time	54min	
Total 2 nd round time	126min	
2 nd round loading time (% of total time)	43%	

Notes:

1. During each collection round in the Bazaar I area, the tractor calls at the central city transfer station and changes trailers, substituting a partially full trailer for a full or nearly full trailer, and then continues its collection round or goes to the disposal site, depending on the remaining capacity in the trailer. Two labourers stay at the transfer station to load garbage into the stationary trailer, while the tractor travels to and from the landfill site with its first load. They then rejoin the tractor on the start of the second round. This practice reduces the second round loading time considerably.
2. Bazaar I specific notes:
 - Bandulla market bin – 22-23min loading time.
 - Round reinforced concrete bin – 20min loading time.
 - Ave Maria Hospital bin – 22min unloading time.
 - Fully laden handcart – 6min for transfer of contents to tractor trailer.
3. Kurana I specific notes:
 - Round reinforced concrete bin, full of waste, with scattered waste around it – 23min loading time.
 - Large open front rectangular bin – 20min loading time.

- A “kerbside” collection system is operating in one area, where residents bring out their garbage to the tractor as it passes (13min of total collection round), generally in various types of permanent containers.
4. Travel time to and from the landfill is approximately 23-25min.
 5. Tractor unloading time at the landfill is approximately 4-7min.

This data shows:

- The Bazaar I tractor is able to complete two collection rounds by 12:00, this partly being due to the use of a spare trailer within this area.
- The other tractor takes around 3h to complete one collection round.
- Travel time to and from the landfill is around 23-25min each way, while the unloading time is around 4-7min.
- Loading makes up 43-46% of the total working time for the Bazaar I tractor and 55% for the other tractor. This shows that the loading time has been slightly reduced through use of a spare trailer within the Bazaar I area. However, in both cases, loading still constitutes a very large proportion of the total collection round time, with it taking around ~20-23min to unload one of the concrete bins.

2.3.6 Privatisation of Bazaar Area

Garbage collection was privatised in the Bazaar I and II areas on 1st May 1999, with a three year 300,000Rs/mth contract being given to a community group: Sathpiyum Samurdhi Balakoya (SSB). Apparently, there was some political interference in the contract awarding process. SSB used their own compactor truck, but didn't do a good job, especially after the sudden death of a key SSB person. Following many complaints from people in this area, the contract was terminated on 10th July 2000.

2.3.7 NMC Collection Vehicle Unit Costs

NMC collection vehicle unit costs were calculated for handcarts and tractors using actual cost data supplied by NMC, supplemented by information from other sources where necessary. These costs are tabulated below.

Table 2-6: NMC Collection Vehicle Unit Costs

Item	Handcart		Tractor
	2	3	3
No of labourers			
Driver	0		74,280
Labourers	140,160	210,240	210,240
Staff equipment	2,480	2,580	4,690
Diesel	0	0	81,204
Oil	0	0	5,628
Wheel set	1,440	1,440	0
Tyres, tubes	0	0	15,000
Repair/maintenance	1,000	1,000	24,000
Trailer maintenance	0	0	10,000
Insurance	0	0	8,790
Licence/ registration	0	0	150
Depreciation	3,167	3,167	86,243
Total (Rs/yr)	148,247	218,427	520,225
Average trips/d	3 - 5	3 - 5	2.4
Collection (T/yr)	112 - 187	112 - 287	1,246
Unit cost (Rs/T)	1,320 - 792	1,945 - 1,167	418
Kandy MC (Aug 2002)	1,342	1,983	496 (4Lr)
Matale MC (Aug 2002)	501 (1Lr)	N/a	403 (4Lr)
Chilaw UC (Aug 2002)	1,322-749 (2.8-5.0 tr/d)	N/a	629 (3Lr)
Gampaha MC (Aug 2002)	1,482 (3tr/d)	2,185 (3tr/d)	799 (4Lr)
Nuwara Eliya MC (Sep 02)	N/a	1,858-1,115 (3-5tr/d)	517 (3Lr)
Badulla MC (Sep 02)	N/a	1,865-1,119 (3-5tr/d)	268-254 (3Lr)

Notes:

1. Average number of trips per day based on 26 working days per month; Lr = labourer.
2. Handcart garbage collection tonnage data based on 3 trips per day (poor performance) to 5 trips per day (good performance).
3. Tractor tonnages based on JICA survey data for Aug 13-19, 2002.
4. Straight line depreciation has been included, based on the following capital costs and lifetimes: handcart = 9,500Rs, 3yrs; tractor = 420,357Rs, 17.5yrs (average capital cost of 14 tractors currently in service); trailer = 560,000Rs, 5.5yrs (average capital cost of all 20 trailers currently in service).

2.4 Final Disposal

2.4.1 Assessment of Current Landfill Site

Results of an assessment of the current landfill site in NMA are given in the table below.

Table 2-7: Assessment of Current Landfill Site

Item	Description
1. Name	Ovitiyawatta landfill
2. Location	Kochchikade, approximately 7km from Negombo city centre.
3. Start of Landfilling	1985
4. Land Ownership	Mr Patrik Perera Pruale (private land)
5. General Site Description	Landfilling is taking place in a big former clay "borrow pit", situated about 1km from the Kochchikade junction and close to the Maha Oya (river). The topography is very flat, low lying land.
6. Surrounding land use	Coconut plantation and residential area
7. Area	Current landfill site: Approximately 4.0 ha
8. Disposal details	Method: Open dumping with soil cover sometimes being applied.
	Reserve volume: Approximately 40,000m ³
9. Waste discharge	Municipal Waste: Household, commercial, market, hotel, institutional, industrial and street sweeping/drain cleaning waste collected by NMC. Daily average: 53.2 tonnes/day (1,596 tonnes/month).

Item		Description			
	Healthcare Waste	Majority of healthcare waste (0.68T/d) is collected by NMC and brought to Ovitiyawatta for disposal. Healthcare institutions stated they dispose of all hazardous healthcare waste on-site.			
	Industrial Waste	Daily average: 1.37T/d			
	Gully sucker waste	Not applicable – refer notes.			
10. Environmental impact	Odour	Seriously affects the surrounding village throughout the year due to lack of proper soil cover.			
	Flies & crows	Seriously affects the surrounding village throughout the year due to lack of proper soil cover.			
	Fire & Smoke	Seriously affects the surrounding village during the dry season due to lack of proper soil cover.			
	Leachate	Rainfall readily infiltrates the deposited waste due to lack of soil cover, producing leachate, which will enter the groundwater, polluting it.			
11. Facilities	Control house	None			
	Gate	None			
	Boundary fence	Partial			
	Weighbridge	None			
	Leachate treatment	None			
	Buffer zone	None			
	Electricity supply	Present on road next to the landfill.			
	Water supply	Present on road next to the landfill.			
Telephone line	Present on road next to the landfill.				
12. Operation and Maintenance (O&M)	Responsible organisation	NMC			
	Equipment	Bulldozer: 1 unit; rented to NMC by owner of landfill site and parked at the landowner's house next to the landfill, only being used for landfill operations. Working hours: 3days per week. 4-5 hours per day; rental fee is 60,000Rs /month			
	Staff allocation	Position	Number	Duties	Working hours
		Labourers	1	Directing waste unloading	8hours(1 st shift)
		Work hours	From 6:00 a.m. to 2:00 p.m.		
		Monthly Basic Salary (Rs/month)			
		Labourer	5,250Rs (permanent) 5,000Rs (casual)		
Covering soil	40,000 Rs/150m ³				
13. Surrounding villages or facilities	Bandarawatta village	Landfill operation mainly affects households within the boundary of the village. Population is 445, comprising 112 households and 120 families. Income distribution = 10% high income, 60% middle income, 30% low income			

REFERENCE

- LF - Live Fence
- WH - Water Works
- TP - Telegraph Post
- P - Permanent Building
- G - Gate
- Ty - Temporary Building
- U - Unclassified
- MF - Misc Fence

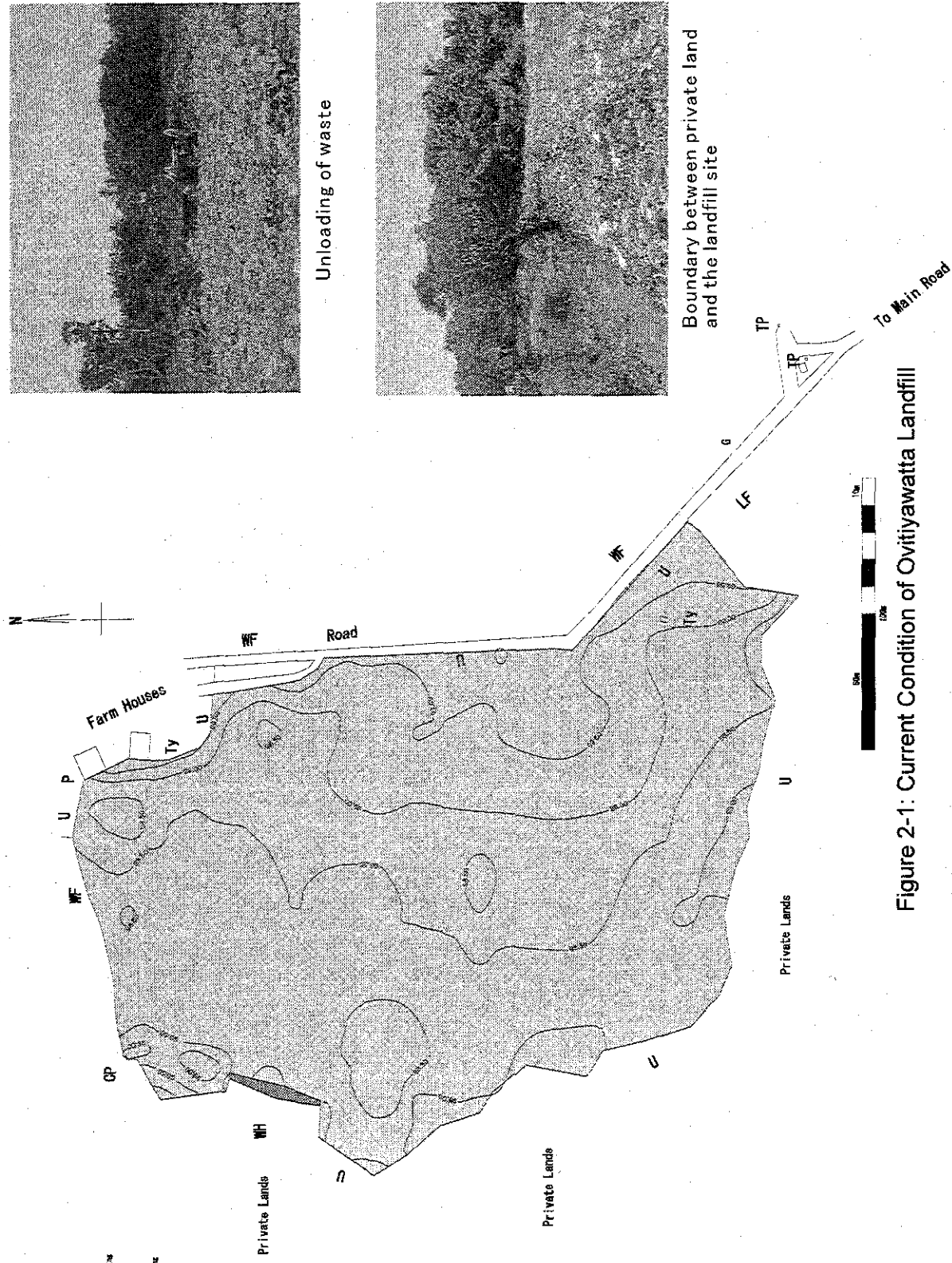


Figure 2-1: Current Condition of Ovitiyawatta Landfill

2.4.2 Ovitiyawatta Landfill Site Issues

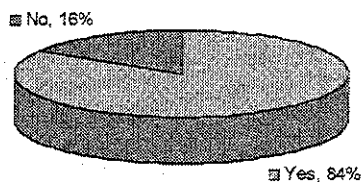
2.4.2.1 Remaining Lifetime

It is impossible to expand the Ovitiyawatta landfill site any more because NMC has discharged waste up to the boundary of the current landfill site. Hence, NMC needs to look for a new landfill site to cater for its future needs.

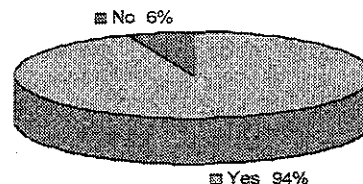
2.4.2.2 Odour, Pests, Crows and Smoke

According to the interview survey carried out in Bandarawatta village (50 houses) surrounding the Ovitiyawatta landfill site from July to August 2002, odour, pests, crows and smoke caused by fire have a serious impact on the residents of this village, as summarised below.

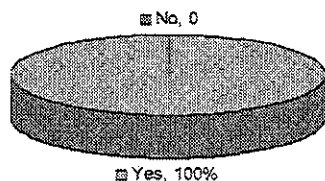
Is smoke from the landfill site a problem ?



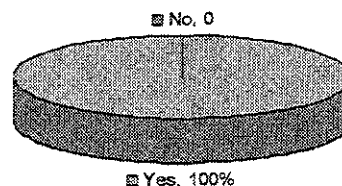
Is offensive odour from landfill a problem ?



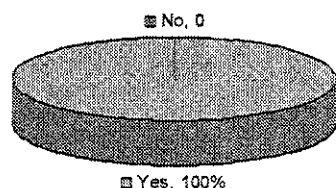
Has the landfill caused problem due to mosquitoes ?



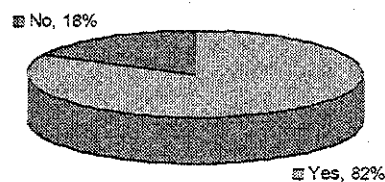
Has the landfill caused problem due to flies ?



Has the landfill caused problem due to birds ?



Are waste scattered from the landfill site a problem ?



The major cause of these problems is inadequate covering of the deposited waste with soil. Hence, NMC must cover the waste at the landfill site with soil more regularly in order to mitigate these negative impacts on nearby residents.

2.4.2.3 Leachate

Rainwater readily penetrates the deposited waste at the landfill site, generating much leachate, again due to a lack of proper soil cover. The leachate from the landfill may be having a serious negative impact on the surrounding environment, including the groundwater.

2.4.2.4 Operation and Maintenance (O&M)

Current landfill O&M methods and corresponding issues are summarised below:

a. Current O&M Methods

- The NMC disposal site labourers instruct vehicles where to discharge at the landfill site. However, filling is done according to no real plan or method, resulting in waste scattering over a wide area.
- A rental bulldozer levels and compacts the waste discharged at landfill site, generally without applying cover soil.
- NMC provides some soil cover on an irregular basis, especially during the rainy season near the entrance to the landfill so that vehicles can enter and exit.

b. O&M Issues

- There is no short or long term operation plan for the landfill site.
- The waste is scattered at the landfill site due to poor operation of the bulldozer.
- Covering soil is not regularly applied due to a shortage of money for buying such soil.
- An NMC labourer may burn the waste at the landfill site in order to mitigate odour, pests and reduce the waste volume. However, burning produces a lot of smoke, causing a serious impact on residents surrounding of the landfill site.

2.4.3 Gully Sucker Waste

Gully sucker is not discharged to Ovitiyawatta dumping site.

Instead, it is discharged to shallow cavities next to the “Major Raya Fernando” play ground at Kuruna within NMA. Daily average discharge amount: 56.0 m³/day, with each gully sucker tanker (3) doing about three trips per day. There is no treatment facility nor fence. Therefore, it is very easy for residents and livestock to approach there. Gully sucker waste penetrates there and may pollute underground water.



Gully sucker discharge site at Kuruna

Chapter 3

Negombo Field Surveys

Contents

	Page:
Chapter 3 Field Survey	3-1
3.1 Public Opinion Survey for Household in Negombo.....	3-1
3.2 Commercial/Industrial and Institutional Waste Generator Survey Results.....	3-15
3.2.1 Garbage Discharge and Collection	3-15
3.2.2 Improvements to Garbage Collection and Disposal	3-17
3.2.3 Recycling and Possible Source Separation Collection System.....	3-18
3.2.4 On-site Composting	3-19
3.2.5 Environmental Education and General Cleanliness.....	3-20
3.2.6 Other Comments	3-20
3.3 Cleansing Workers Survey in Negombo	3-22
3.4 Middlemen Survey	3-28
3.4.1 Survey Sheet	3-28
3.5 Compost Barrel Survey	3-47
3.6 Other Information in Negombo Other information in Chilaw	3-51

List of Tables

Table 3-1: Survey results - Garbage Discharge and Collection.....	3-16
Table 3-2: Survey Results – Improvements to Garbage Collection and Disposal.....	3-17
Table 3-3: Survey Results – Recycling and Possible Source Separation System.....	3-18
Table 3-4: Survey Results – On-site Composting.....	3-19
Table 3-5: Survey Results – Environmental Education and General Cleanliness	3-20
Table 3-6: Survey Results – Other Comments.....	3-21

Chapter 3 Field Survey

3.1 Public Opinion Survey for Household in Negombo

Findings from Public Opinion Survey for Household in Negombo

A questionnaire survey was conducted among 150 households in Negombo Municipal Areas, to gather;

- Basic socio-economic profiles of inhabitants of Negombo.
- An appreciation of public attitude to the provision of solid waste collection services.
- An appreciation of desired improvement in solid waste management services.
- An indication of willingness to pay for improved solid waste collection services.

Period of survey: Second and third weeks of July, 2002

Sample size: 150 (50 each from high, middle and low income areas)

Sampling areas: *High income areas are Angurukaramulla, Thaladuwa and Udayara Thoppuwa
*Middle income areas are Pallansena and Kattuwa
*Low income areas are Munnakkaraya and Pathimawatta

1. General Questions

Q1-1 Ethnicity

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Sinhala	45	90%	44	88%	46	92%	135	90%
2 Muslim	2	4%	2	4%	2	4%	4	3%
3 Tamil	3	6%	4	8%	0	0%	9	6%
4 Other	0	0%	0	0%	2	4%	2	1%
Total	50	100%	50	100%	50	100%	150	100%

Note: Other means "burgers".

Q1-2 Religion

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Buddhist	9	18%	7	14%	16	32%	32	21%
2 Islam	2	4%	1	2%	1	2%	4	3%
3 Hindu	0	0%	2	4%	1	2%	3	2%
4 Christian	39	78%	40	80%	32	64%	111	74%
5 Other	0	0%	0	0%	0	0%	0	0%
Total	50	100%	50	100%	50	100%	150	100%

Q1-3 Household information

(person)	Low	Middle	High	Total
Avg. Number of household members	5.1	4.8	5.0	5.0
(Rs.)	Low	Middle	High	Total
Avg. household income	5,085	11,869	35,220	17,431

(Rs.)	Low	Middle	High	Total
Income per person	997	2,473	7,072	3,514

Q1-4 How much is the total expenditure of your household per month on average?

(Rs.)	Low	Middle	High	Total
Avg. household expenditure	4,620	8,552	19,400	10,930

(Rs.)	Low	Middle	High	Total
Expenditure per person	906	1,710	3,896	2,204

Q1-5 Please specify the priority for your daily life regarding the improvement of the following aspects ? (Fill all three priorities)

	Low	Middle	High	Total
1 First	Garbage collection	Garbage collection	Storm water drainage	Garbage collection
2 Second	Storm water drainage	Other (Mosquitoes)	Garbage collection	Storm water drainage
3 Third	Waste water collection	Storm water drainage	Waste water collection	Waste water collection

2. Questions on Garbage Collection Services in Your Area

Q2-1 Are there garbage collection services in your area?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	50	100%	44	88%	50	100%	144	96%
2 No	0	0%	6	12%	0	0%	6	4%
Total	50	100%	50	100%	50	100%	150	100%

Q2-2 Do you use these services?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	33	66%	15	30%	30	60%	78	52%
2 No	17	34%	29	58%	20	40%	66	44%
99 Irrelevant	0	0%	6	12%	0	0%	6	4%
Total	50	100%	50	100%	50	100%	150	100%

Q2-3(a) How is your garbage collected?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Placing garbage outside the property for collection	18	36%	3	6%	5	10%	26	17%
2 Carrying garbage to a specified collection point	13	26%	12	24%	24	48%	49	33%
3 Carrying garbage to a collection truck directly	2	4%	0	0%	1	2%	3	2%
4 Others	0	0%	0	0%	0	0%	0	0%
99 Irrelevant	17	34%	35	70%	20	40%	72	48%
Total	50	100%	50	100%	50	100%	150	100%

Q2-3(b) (Only for those who choose 2 or 3 in question Q2-3) How far do you have to walk to reach this point?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 1 - 25m	14	28%	10	20%	18	36%	42	28%
2 26 - 50m	1	2%	1	2%	7	14%	9	6%
3 51 - 100m	0	0%	0	0%	0	0%	0	0%
4 100 - 250m	0	0%	0	0%	0	0%	0	0%
5 Over 250m	0	0%	1	2%	0	0%	1	1%
99 Irrelevant	35	70%	38	76%	25	50%	98	65%
Total	50	100%	50	100%	50	100%	150	100%

Q2-4 How often is your garbage collected?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Daily	1	2%	3	6%	2	4%	6	4%
2 More than four times per week	4	8%	5	10%	1	2%	10	7%
3 Two to three times per week	15	30%	3	6%	15	30%	33	22%
4 Once a week	12	24%	3	6%	5	10%	20	13%
5 Less than once per week	0	0%	0	0%	0	0%	0	0%
6 Irregular	1	2%	1	2%	6	12%	8	5%
98 Don't know	0	0%	0	0%	1	2%	1	1%
99 Irrelevant	17	34%	35	70%	20	40%	72	48%
Total	50	100%	50	100%	50	100%	150	100%

Q2-5 Is the garbage collection service done at a fixed time on the collection day?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	18	36%	5	10%	9	18%	32	21%
2 No	15	30%	10	20%	20	40%	45	30%
98 Don't know	0	0%	0	0%	1	2%	1	1%
99 Irrelevant	17	34%	35	70%	20	40%	72	48%
Total	50	100%	50	100%	50	100%	150	100%

Q2-6 Have you ever given small allowance such as new year's allowance and other seasonal allowance, including the reward to the extra work for you, to garbage collectors?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	17	34%	3	6%	25	50%	45	30%
2 No	16	32%	12	24%	5	10%	33	22%
99 Irrelevant	17	34%	35	70%	20	40%	72	48%
Total	50	100%	50	100%	50	100%	150	100%

Q2-7 How much is the total amount of (1) small allowance and (2) the reward you gave over the last one year?

(1) Small allowance

(Rs.)	Low	Middle	High	Total
Average annual small allowance	46	83	152	112

Note: No. of effective answers on this question is 39.

(2) Reward

(Rs.)	Low	Middle	High	Total
Average annual reward	20	—	450	150

Note: No. of effective answers on this question is 7.

Q2-8 Are you satisfied with the collection service?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Very satisfied	9	18%	4	8%	4	8%	17	11%
2 Somewhat satisfied	15	30%	7	14%	14	28%	36	24%
3 Less than satisfied	9	18%	2	4%	10	20%	21	14%
4 Not satisfied at all	0	0%	2	4%	2	4%	4	3%
99 Irrelevant	17	34%	35	70%	20	40%	72	48%
Total	50	100%	50	100%	50	100%	150	100%

Q2-9 If you chose either 2, 3 or 4, what are the reasons? (Choose one or more)

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Garbage collection / sweeping is not properly done	19	23%	4	7%	20	19%	43	17%
2 Garbage collection / sweeping frequency is too low	19	23%	8	13%	21	20%	48	19%
3 Garbage collection / sweeping is irregular	11	13%	3	5%	13	12%	27	11%
4 Garbage collection time is too early or to late or irregular	5	6%	4	7%	11	10%	20	8%
5 Behavior of garbage collection workers is bad	0	0%	0	0%	1	1%	1	0%
6 Garbage collection workers demand small allowance	3	4%	0	0%	8	8%	11	4%
7 Garbage collection small allowance is expensive	0	0%	0	0%	0	0%	0	0%
8 Collection service is not fair	0	0%	0	0%	0	0%	0	0%
9 Garbage collection point is too far	0	0%	2	3%	7	7%	10	4%
10 Other	0	0%	0	0%	0	0%	0	0%
99 Irrelevant	26	31%	39	65%	24	23%	89	36%
Total	83	100%	60	100%	105	100%	249	100%

Q2-10 Have you ever complained about the garbage collection service to the authorities in the last three years?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	2	4%	2	4%	10	20%	14	9%
2 No	31	62%	13	26%	20	40%	64	43%
99 Irrelevant	17	34%	35	70%	20	40%	72	48%
Total	50	100%	50	100%	50	100%	150	100%

Q2-11 **(Only for persons who chose "NO" in question Q2-1)** Do you want to receive a garbage collection service?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	0	0%	4	8%	0	0%	4	3%
2 No	0	0%	2	4%	0	0%	2	1%
99 Irrelevant	50	100%	44	88%	50	100%	144	96%
Total	50	100%	50	100%	50	100%	150	100%

3. Questions on Waste Discharge from Your Premises

Q3-1 How do you dispose of garbage generated in your premises?

	Low		Middle		High		Total	
	Main	Other	Main	Other	Main	Other	Main	Other
	1 Discharge it outside of the house for the house to house collection	13	2	2	1	3	0	18
2 Discharge it at the specified place for the collection service	13	2	7	1	23	1	43	4
3 Open dumping outside of the house	5	0	5	3	3	3	13	6
4 Ask the relevant authority to send garbage collectors	0	0	0	0	0	0	0	0
5 Self-dispose	17	11	36	7	19	17	72	35
6 Composting (producing fertilizer from waste)	1	1	0	0	2	4	3	5
7 Give for recycling	0	0	0	0	0	0	0	0
8 Other	1	0	0	0	0	2	1	2
Total	50	16	50	12	50	27	150	55

	Low		Middle		High		Total	
	Main	Other	Main	Other	Main	Other	Main	Other
	1 Discharge it outside of the house for the house to house collection	26%	13%	4%	8%	6%	0%	12%
2 Discharge it at the specified place for the collection service	26%	13%	14%	8%	46%	4%	29%	7%
3 Open dumping outside of the house	10%	0%	10%	25%	6%	11%	9%	11%
4 Ask the relevant authority to send garbage collectors	0%	0%	0%	0%	0%	0%	0%	0%
5 Self-dispose	34%	69%	72%	58%	38%	63%	48%	64%
6 Composting (producing fertilizer from waste)	2%	6%	0%	0%	4%	15%	2%	9%
7 Give for recycling	0%	0%	0%	0%	0%	0%	0%	0%
8 Other	2%	0%	0%	0%	0%	7%	1%	4%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Note: Other means "place them directly to either collection truck or hand cart."

Q3-2 How often do you dispose of garbage generated in your premises?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 As soon as waste arises	1	2%	5	10%	12	24%	18	12%
2 Once daily	44	88%	40	80%	24	48%	108	72%
3 Once every 2 or 3 days	4	8%	5	10%	11	22%	20	13%
4 Less frequently	1	2%	0	0%	3	6%	4	3%
Total	50	100%	50	100%	50	100%	150	100%

Q3-3 Who mainly handles wastes at home?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 An adult male member	3	6%	7	14%	1	2%	11	7%
2 An adult female member	47	94%	41	82%	38	76%	126	84%
3 Servant	0	0%	2	4%	11	22%	13	9%
4 Others	0	0%	0	0%	0	0%	0	0%
Total	50	100%	50	100%	50	100%	150	100%

Q3-4 (Only for persons who chose 2 in question Q3-1) Who mainly brings the wastes to a specific collection point?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 An adult male member	1	2%	2	4%	6	12%	9	6%
2 An adult female member	14	28%	6	12%	14	28%	34	23%
3 Child	0	0%	0	0%	0	0%	0	0%
4 Servant	0	0%	0	0%	4	8%	4	3%
5 Others	0	0%	0	0%	0	0%	0	0%
99 Irrelevant	35	70%	42	84%	26	52%	103	69%
Total	50	100%	50	100%	50	100%	150	100%

Q3-5 What type of container do you use for carrying garbage to a collection point or for placing the garbage outside of your house? (Choose one or more)

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Plastic bag	35	56%	22	35%	25	37%	82	42%
2 Paper bag	0	0%	0	0%	2	3%	2	1%
3 Metal/plastic/wood garbage bin	9	14%	21	33%	23	34%	53	27%
4 Box	0	0%	1	2%	1	1%	2	1%
5 Basket	7	11%	1	2%	3	4%	11	6%
6 None-place directly	12	19%	15	24%	13	19%	40	21%
7 Others	0	0%	3	5%	0	0%	3	2%
Total	63	100%	63	100%	67	100%	193	100%

Note : Other means nylon bags of fertilizer, called pohora bag.

Q3-6 Why do you use it? (Choose one or more)

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 It is clean after collection work	9	13%	15	19%	17	18%	41	17%
2 It prevents foul odors	5	7%	1	1%	4	4%	10	4%
3 It is easy handling	41	58%	39	51%	46	48%	126	52%
4 It keeps away pests such as flies	3	4%	2	3%	9	9%	14	6%
5 It is cheap or easy to get	13	18%	20	26%	19	20%	52	21%
6 Other	0	0%	0	0%	0	0%	0	0%
Total	71	100%	77	100%	95	100%	243	100%

Q3-7 (**Only for those who did not choose 2 in Q3-1**) If you are requested to carry your garbage to a specified garbage collection point, would you cooperate to do so?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes, if it is located within 25m distance (30 sec to walk)	30	60%	28	56%	9	18%	67	45%
2 Yes, if it is located within 50m distance (1 min to walk)	0	0%	4	8%	0	0%	4	3%
3 No, I do not prefer the collection system mentioned above anyway	5	10%	10	20%	17	34%	32	21%
4 Others	0	0%	0	0%	0	0%	0	0%
98 Don't know	0	0%	0	0%	0	0%	0	0%
99 Irrelevant	15	30%	8	16%	24	48%	47	31%
Total	50	100%	50	100%	50	100%	150	100%

Q3-8 Do you have garden wastes (fallen leaves and branches or grass and weeds)?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	31	62%	47	94%	43	86%	121	81%
2 No	19	38%	3	6%	7	14%	29	19%
Total	50	100%	50	100%	50	100%	150	100%

Q3-9 How do you discharge your garden wastes generally?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Discharge it at the collection point with the other wastes for collection	3	6%	7	13%	5	10%	15	10%
2 Discharge it outside of my premises with the other wastes for collection	8	15%	1	2%	2	4%	11	7%
3 Ask the relevant authorities to send garbage collectors	0	0%	0	0%	0	0%	0	0%
4 Self-dispose	18	35%	42	79%	31	62%	91	59%
5 Composting (producing fertilizer from waste)	2	4%	0	0%	5	10%	7	5%
6 Give for composting	0	0%	0	0%	0	0%	0	0%
7 Others	2	4%	0	0%	0	0%	2	1%
99 Irrelevant	19	37%	3	6%	7	14%	29	19%
Total	52	100%	53	100%	50	100%	155	100%

Note: Others mean "dump to lagoon" and "dump to open space".

Q3-10 (**Only for those who chose 3 in Q3-1**) Where do you dispose of your garbage by open dumping?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 On banks of or in stream / river	0	0%	2	4%	0	0%	2	1%
2 On vacant land	2	4%	5	10%	5	10%	12	8%
3 In a gully	0	0%	1	2%	1	2%	2	1%
4 In the sea	3	6%	0	0%	0	0%	3	2%
5 Others	0	0%	0	0%	0	0%	0	0%
99 Irrelevant	45	90%	42	84%	44	88%	131	87%
Total	50	100%	50	100%	50	100%	150	100%

4. Questions on Recycling and Waste Reduction

Q4-1 Recycling of waste is most effective if the waste can be sorted into different categories by the household. If the relevant authorities such as municipal councils and urban councils introduce a separate garbage collection system, you will be requested to separate your wastes into a number of categories, for example, such as i.) compostable waste such as food waste, paper and garden waste ii.) recyclable waste such as metals, glass, plastics, paper and iii.) other wastes. Are you willing to cooperate with this type of system?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Very much willing to cooperate	36	72%	37	74%	34	68%	107	71%
2 Somewhat willing to cooperate	5	10%	10	20%	2	4%	17	11%
3 Less willing to cooperate /somewhat unwilling to cooperate	5	10%	1	2%	6	12%	12	8%
4 Not willing to cooperate at all	4	8%	2	4%	8	16%	14	9%
5 Am doing already	0	0%	0	0%	0	0%	0	0%
Total	50	100%	50	100%	50	100%	150	100%

Q4-2 ***If you answered either 1 or 2 and 5***, why do you think recycling is important? (Choose one or more)

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Recycling would reduce the amount of waste going to landfill	18	23%	13	16%	21	27%	52	22%
2 Recycling would help to protect environment	37	47%	43	54%	30	38%	110	47%
3 Recycling would allow you to earn some money	15	19%	20	25%	13	17%	48	20%
4 Others	0	0%	0	0%	0	0%	0	0%
99 Irrelevant	9	11%	3	4%	14	18%	26	11%
Total	79	100%	79	100%	78	100%	236	100%

Q4-3 ***If you answered either 1 or 2 and 5***, how many categories would you be willing to separate your wastes into?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Two	31	62%	24	48%	16	32%	71	47%
2 Three	6	12%	21	42%	14	28%	41	27%
3 More than that	4	8%	2	4%	6	12%	12	8%
99 Irrelevant	9	18%	3	6%	14	28%	26	17%
Total	50	100%	50	100%	50	100%	150	100%

Q4-4 ***If you choose 2, 3, or 4 in Q4-1***, what are the reasons? (Choose one or more)

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 It is inconvenient and difficult	10	17%	7	11%	15	10%	32	17%
2 It may increase financial burden regarding to the discharging cost	0	0%	3	5%	3	2%	6	3%
3 It will take much time	3	5%	1	2%	11	8%	15	8%
4 Needs for the recycling system is not clear	3	5%	5	8%	2	1%	10	5%
5 Benefits of the recycling system is not clear	2	3%	6	10%	1	1%	9	5%
6 There may be poor contribution from household members	4	7%	3	5%	7	5%	14	7%
7 Others	0	0%	0	0%	0	0%	0	0%
98 Don't know	0	0%	0	0%	34	23%	0	0%
99 Irrelevant	36	62%	37	60%	73	50%	107	55%
Total	58	100%	62	100%	146	100%	193	100%

Q4-5 Is there someone who comes around to collect or buy your reusable or recyclable materials?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	19	38%	34	68%	37	74%	90	60%
2 No	31	62%	16	32%	13	26%	60	40%
Total	50	100%	50	100%	50	100%	150	100%

Q4-6 Which materials do they collect or buy from you?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Glass	9	15%	25	33%	23	27%	57	26%
2 Cardboard	0	0%	0	0%	0	0%	0	0%
3 Paper	4	6%	9	12%	21	25%	34	15%
4 Metal can	4	6%	12	16%	8	10%	24	11%
5 Other metal	3	5%	4	5%	2	2%	9	4%
6 Kitchen waste	0	0%	1	1%	0	0%	1	0%
7 Garden waste	0	0%	0	0%	0	0%	0	0%
8 Plastics	0	0%	0	0%	0	0%	0	0%
9 Textiles (e.g. clothes)	1	2%	2	3%	9	11%	12	5%
10 Leather, rubber	0	0%	0	0%	0	0%	0	0%
11 Wood / Timber	0	0%	0	0%	0	0%	0	0%
12 Tyres	0	0%	0	0%	1	1%	2	1%
13 Others	0	0%	0	0%	0	0%	0	0%
98 Not selling	10	16%	6	8%	7	8%	23	10%
99 Irrelevant	31	50%	16	21%	13	15%	60	27%
Total	62	100%	75	100%	84	100%	222	100%

Q4-7 Do you take for recyclable materials to shops for refund or sale?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	5	10%	16	32%	21	42%	42	28%
2 No	45	90%	34	68%	29	58%	108	72%
Total	50	100%	50	100%	50	100%	150	100%

Q4-8(a) Which materials do you return or sell to shops?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Glass	5	9%	13	25%	20	38%	38	24%
2 Cardboard	1	2%	0	0%	0	0%	1	1%
3 Paper	2	4%	3	6%	3	6%	8	5%
4 Metal can	0	0%	0	0%	0	0%	0	0%
5 Other metal	0	0%	1	2%	0	0%	1	1%
6 Kitchen waste	0	0%	0	0%	0	0%	0	0%
7 Garden waste	0	0%	0	0%	0	0%	0	0%
8 Plastics	1	2%	0	0%	0	0%	1	1%
9 Textiles (e.g. clothes)	0	0%	0	0%	0	0%	0	0%
10 Leather, rubber	0	0%	0	0%	0	0%	0	0%
11 Wood / Timber	0	0%	0	0%	0	0%	0	0%
12 Tyres	0	0%	0	0%	0	0%	0	0%
13 Others	0	0%	0	0%	0	0%	0	0%
99 Irrelevant	45	83%	34	67%	29	56%	108	69%
Total	54	100%	51	100%	52	100%	157	100%

Q4-8(b) (Only for those choosing Yes in either Q4-5 or Q4-7) What are the major materials collected from you or returned / sold to shops, and how much do you sell these for per month?

	Low	Middle	High	Total
1 First	Bottle (10)	Bottle (28)	Bottle (26)	Bottle (64)
2 Second	Paper (3)	Metal (11)	Paper (21)	Paper (34)
3 Third	Metal (2)	Paper (9)	Cloth (8)	Cloth (11)

Note: Bracketed figures show the number of households that sell these materials.

(Rs.)	Low	Middle	High	Total
Avg. monthly income from recycling	46	52	98	73

Note: Number of effective answers are 66.

Q4-9(a) Are you using kitchen and/or garden waste for compost?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	2	4%	0	0%	8	16%	10	7%
2 No	48	96%	50	100%	42	84%	140	93%
Total	50	100%	50	100%	50	100%	150	100%

Q4-9(a) (i) If yes to the previous question, how much of these wastes do you compost per month?

Kitchen wastes	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Less than half	0	0%	0	0%	1	2%	1	1%
2 Half	0	0%	0	0%	0	0%	0	0%
3 More than half	0	0%	0	0%	2	4%	2	1%
4 All	2	4%	0	0%	5	10%	7	5%
5 Irrelevant	48	96%	50	100%	42	84%	140	93%
Total	50	100%	50	100%	50	100%	150	100%

Garden wastes	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Less than half	0	0%	0	0%	0	0%	0	0%
2 Half	1	2%	0	0%	0	0%	1	1%
3 More than half	1	2%	0	0%	3	6%	4	3%
4 All	0	0%	0	0%	5	10%	5	3%
5 Irrelevant	48	96%	50	100%	42	84%	140	93%
Total	50	100%	50	100%	50	100%	150	100%

(ii) How much compost do you produce per month?

(Kg.)	Low	Middle	High	Total
Monthly compost production	6	—	89	56

Note: Number of effective answers is 5 only.

(iii) What do you do with it?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Sell	0	0%	0	0%	0	0%	1	1%
2 Own use	2	4%	0	0%	8	16%	10	7%
3 Irrelevant	48	96%	50	100%	42	84%	140	93%
Total	50	100%	50	100%	50	100%	151	101%

Note: One person produces compost for both own use and selling.

Q4-10 Hazardous waste refers to items like dead batteries, used spray cans, old medicines, old household chemicals, solvents, paints, etc. Considering all the solid waste produced by your household, how many hazardous waste items would you dispose of per month?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 None	39	78%	27	54%	9	18%	75	50%
2 One to two	11	22%	19	38%	30	60%	60	40%
3 Three to five	0	0%	3	6%	11	22%	14	9%
4 Six to ten	0	0%	1	2%	0	0%	1	1%
5 More than ten	0	0%	0	0%	0	0%	0	0%
Total	50	100%	50	100%	50	100%	150	100%

Q4-11 Suppose that you are satisfied with the service of Municipal solid waste management, either as is or as a result of improvement. Think for a moment about the largest amount of money that your household would be willing to pay each month as a garbage collection fee. (Important: If the garbage collection fee is more than this amount, your household will not be able to afford to pay and will not be able to use the garbage collection service.)

(Rs.)	Low	Middle	High	Total
Avg. amount of WTP (willingness to pay)	57	76	101	78

5. Public cooperation / Community participation

Q5-1 Now, we would like to ask about the community you live. In your community, do you have any community-based organizations to solve not only the waste problems but also other community problems?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	44	88%	30	60%	27	54%	101	67%
2 No	1	2%	16	32%	16	32%	33	22%
98 Don't know	5	10%	4	8%	7	14%	16	11%
Total	50	100%	50	100%	50	100%	150	100%

Q5-2 If yes, when did the community-based organization start functioning?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Within five years	9	18%	6	12%	0	0%	15	10%
2 Between six to ten years	14	28%	0	0%	3	6%	17	11%
3 More than eleven years ago	6	12%	4	8%	5	10%	15	10%
98 Don't know	15	30%	20	40%	19	38%	54	36%
99 Irrelevant	6	12%	20	40%	23	46%	49	33%
Total	50	100%	50	100%	50	100%	150	100%

Q5-3 How is the leader of this community chosen?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Democratically elected	32	64%	9	18%	11	22%	52	35%
2 Appointed by elders	1	2%	0	0%	0	0%	1	1%
3 Appointed by administration	0	0%	0	0%	0	0%	0	0%
4 Inherited	0	0%	0	0%	0	0%	0	0%
5 Others	0	0%	1	2%	0	0%	1	1%
98 Don't know	11	22%	20	40%	16	32%	47	31%
99 Irrelevant	6	12%	20	40%	23	46%	49	33%
Total	50	100%	50	100%	50	100%	150	100%

Q5-4 How often do you have the meetings?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 More often than once a month	34	68%	10	20%	8	16%	52	35%
2 Once in two months to five months	1	2%	3	6%	1	2%	5	3%
3 Once in six months	0	0%	0	0%	1	2%	1	1%
4 Once in seven to eleven months	0	0%	0	0%	0	0%	0	0%
5 Less often than once in a year	0	0%	1	2%	3	6%	4	3%
6 No meeting	0	0%	0	0%	0	0%	0	0%
98 Don't know	9	18%	16	32%	14	28%	39	26%
99 Irrelevant	6	12%	20	40%	23	46%	49	33%
Total	50	100%	50	100%	50	100%	150	100%

Q5-5 Have you ever discussed the methods of proper garbage handling and discharge at the meetings?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	24	48%	1	2%	2	4%	27	18%
2 No	11	22%	11	22%	12	24%	34	23%
98 Don't know	9	18%	18	36%	13	26%	40	27%
99 Irrelevant	6	12%	20	40%	23	46%	49	33%
Total	50	100%	50	100%	50	100%	150	100%

Q5-6 Have you ever been taught methods of proper garbage handling and discharge?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	31	62%	16	32%	11	22%	58	39%
2 No	19	38%	34	68%	39	78%	92	61%
Total	50	100%	50	100%	50	100%	150	100%

Q5-7 If "Yes" to the previous question, who taught these to you? (Choose one or more)

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Parents	0	0%	4	7%	1	2%	5	3%
2 Community leaders	8	13%	1	2%	0	0%	9	5%
3 School teachers	3	5%	11	19%	3	6%	17	10%
4 Local government	22	37%	4	7%	7	13%	33	20%
5 Central government	0	0%	0	0%	0	0%	0	0%
6 NGOs	8	13%	0	0%	0	0%	8	5%
7 Others	0	0%	3	5%	2	4%	5	3%
99 Irrelevant	19	32%	34	60%	39	75%	92	54%
Total	60	100%	57	100%	52	100%	169	100%

Note: Other means "mass media".

Q5-8 Does anyone in your family or your servant clean the side of the road or adjacent public area in front of your premises?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes, almost everyday	37	74%	25	50%	11	22%	73	49%
2 Yes, sometimes	9	18%	20	40%	25	50%	54	36%
3 No	4	8%	5	10%	14	28%	23	15%
Total	50	100%	50	100%	50	100%	150	100%

Q5-9 Here please tell me about the behavior of your community population, **and not yours.** What are **the most common** methods to dispose of the garbage in this community?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Picked up by garbage collection service	34	57%	18	36%	40	80%	92	57%
2 Burnt	12	20%	21	42%	3	6%	36	22%
3 Thrown in the open space or rivers	11	18%	3	6%	1	2%	15	9%
4 Just dumped on the yard / in the garden	0	0%	2	4%	0	0%	2	1%
5 Buried on the yard / in the garden	2	3%	6	10%	4	8%	12	7%
6 Others	1	2%	0	0%	0	0%	1	1%
98 Don't know	0	0%	1	2%	2	4%	3	2%
Total	60	100%	51	100%	50	100%	161	100%

Note: Other means "composting".

Q5-10 Has anyone in this household, including children, received any health and environmental education or information relating to solid waste?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Yes	46	92%	44	88%	47	94%	137	91%
2 No	4	8%	6	12%	3	6%	13	9%
Total	50	100%	50	100%	50	100%	150	100%

Q5-11 If yes, where did this information come from? (Choose one or more)

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Parents	7	6%	5	4%	4	3%	16	5%
2 School	31	28%	29	24%	28	24%	88	25%
3 Medical worker /center / hospital	11	10%	7	6%	10	8%	28	8%
4 Community organization/ NGOs	13	12%	0	0%	0	0%	13	4%
5 Newspaper	6	5%	19	16%	21	18%	46	13%
6 Radio program	11	10%	17	14%	11	9%	39	11%
7 TV program	25	23%	36	30%	37	31%	98	28%
8 Local government	2	2%	0	0%	3	3%	5	1%
9 Central government	0	0%	0	0%	1	1%	1	0%
10 Others	0	0%	2	2%	0	0%	2	1%
99 Irrelevant	4	4%	6	5%	3	3%	13	4%
Total	110	100%	121	100%	118	100%	349	100%

Q5-12 Do you think a campaign to raise awareness of people for maintaining the cleaner city and environment is necessary?

	Low		Middle		High		Total	
	Number	%	Number	%	Number	%	Number	%
1 Very necessary	40	80%	38	76%	35	70%	113	75%
2 Somewhat necessary	7	14%	8	16%	10	20%	25	17%
3 Not very necessary	3	6%	3	6%	5	10%	11	7%
4 Not necessary at all	0	0%	1	2%	0	0%	1	1%
Total	50	100%	50	100%	50	100%	150	100%

3.2 Commercial/Industrial and Institutional Waste Generator Survey Results

Commercial/industrial and institutional interview survey results for 88 samples within NMA are summarized in this section.

3.2.1 Garbage Discharge and Collection

The following table sets out the main interview survey results relating to garbage discharge and collection. Some key points are summarized below:

- 68 (77%) enterprises are provided with a garbage collection service by NMC, with 66 (75%) of these using this service.
- Only Elsuma (industry) said they pay NMC an official garbage collection fee of 6,000Rs/mth. However, the NMC Revenue Clerk has no knowledge of this and hence it has also been classified as an informal payment (but not included in total below).
- 34 (39%) enterprises pay garbage collection workers informally, the average payment being 2,539Rs/yr (range = 10 (small shop) to 10,000 (large hotel) Rs/yr).
- 16 (24%) of the 66 enterprises using the garbage collection service are satisfied with it. The main reasons for dissatisfaction are:
 - Poor garbage discharge system (36).
 - Garbage collection/sweeping is not done properly (33).
 - Garbage collection/sweeping is irregular (31).
 - Garbage collection/sweeping frequency is too low (29).

The Base Hospital is also concerned about the handling and disposal of hazardous healthcare wastes.

- 28 (32%) enterprises have complained to NMC about the garbage collection service at least once in the last 3 years.

Table 3-1: Survey results - Garbage Discharge and Collection

Item	Small Waste Gen'rs	Large Waste Generators			Total
		Comm./ industrial	Other Inst'ns	Hospitals	
No of respondents	18	52	13	5	88
Q1.5 - Garbage storage within premises (main method) - No of responses^{2,3}					
a. Plastic bag	7	6	1	1	15
b. Open container	9	14	9	2	34
c. Container with lid	1	21	3	3	28
d. Place on ground/floor	1	10	0	0	11
e. Direct disposal	0	1	0	0	1
f. Other	0	2	0	0	2
Q1.6 - Main method of garbage disposal - No of responses³					
a. Place outside for collection	7	4	3	0	14
b. Carry to collection vehicle	6	2	2	0	10
c. Take to collection point	5	8	1	0	14
d. Labourers collect from premises	0	15	0	3	18
e. Bury on site	0	1	1	0	2
f. Burn on site	0	5	5	2	12
g. Recycle	0	14	1	0	15
h. Compost	0	1	0	0	1
i. Open dumping	0	0	0	0	0
j. Other	0	11	0	0	11
Q1.8 - Walking distance to garbage collection point - No of responses (only if chose Q1.6c)					
a. 0-25m	4	13	1	0	18
b. 25-50m	0	0	0	0	0
c. 50-100m	0	0	0	0	0
d. 100-250m	1	0	0	0	1
Q1.12 to 1.13 - Provision and use of garbage collection service - No of responses					
Provided	18	38	9	3	68
Not provided	0	14	2	2	18
Use	18	38	7	3	66
Q1.14 - Garbage discharge and collection frequency - No of responses					
Discharge at least once daily	16	36	7	3	62
Collection at least daily	15	26	7	0	48
Q1.15 to 1.17 - Garbage collection worker payment³					
No giving payments	6	26	0	2	34
Average payment (Rs/yr)	1,010	2,527	N/a	4,750	2,539
Q1.18 - Satisfaction with existing garbage collection service					
Satisfied (no)	1	13	0	2	16
Dissatisfied (no)	17	25	7	1	50
Reasons for dissatisfaction:					
a. Poor discharge system	13	17	6	0	36
b. Collection point too far away	6	6	3	0	15
c. Coll'n/sweep. not done properly	14	16	3	0	33
d. Collection/sweeping is irregular	14	13	4	0	31
e. Coll'n/sweep. frequency too low	10	17	2	0	29
f. Collection time is too early/late	5	11	3	0	19
g. Garbage workers behave badly	0	2	0	0	2
h. labourers demand payment	0	2	0	0	2
i. LA garbage fee is too high	0	6	0	0	6
j. Lack of recycling	0	12	1	0	13
k. Other	0	10	1	0	11
l. Problems handling hazardous healthcare waste	N/a	N/a	N/a	1	1
Q1.19 - Complaints to NMC in last 3 years - No of responses					
a. None	13	20	4	1	38
b. Once only	2	1	0	0	3
c. Several times	2	6	3	2	13
d. More than 5 times	1	11	0	0	12

Notes: Hospital garbage storage and disposal results apply to normal garbage; N/a = not applicable.

3.2.2 Improvements to Garbage Collection and Disposal

The following table sets out the main interview survey results relating to desired improvements to garbage discharge and collection.. Some key points are summarized below:

- The five most desired improvements to garbage collection and disposal in descending order are:
 - Improved discharge system (Weighted average rank, WAR = 62.5).
 - Improved garbage collection frequency (WAR = 50.0).
 - Greater recycling/composting (WAR = 35.0).
 - Public education (WAR = 34.0).
 - Shorter distance to collection point (WAR = 33.5).

Improved collection/disposal of healthcare hazardous waste was also of concern to two hospitals.

- Most enterprises thought that NMC (64, 73%) or the Central government (10, 11%) should pay for improved garbage collection and disposal. However, 19 (22%) supported the introduction of an individual garbage collection fee.
- 46 (52%) enterprises indicated a willingness to pay (WTP) a garbage collection fee, the average WTP being 655Rs/mth (range = 50 to 6,000Rs/mth). Another 23 were not willing to pay anything, while 19 enterprises did not respond to this question. The non-respondents are mainly hotels and institutions, where the survey respondent felt unable to make such a decision without referring it to the hotel management committee or the Hotel Association for discussion, or in the case of institutions, to senior management (i.e. mainly provincial/central government).

Table 3-2: Survey Results – Improvements to Garbage Collection and Disposal

Item	Small Waste Gen'rs	Large Waste Generators			Total
		Comm./ industrial	Other Inst'ns	Hospitals	
No of respondents	18	52	13	5	88
Q2.1 - Desired improvements to garbage collection/disposal – weighted average rank					
a. Improved discharge system	20.0	24.5	11.0	7.0	62.5
b. Closer collection point	10.0	14.0	6.5	3.0	33.5
c. More reliable service	6.0	16.0	6.5	1.5	30.0
d. Improved collection frequency	9.5	32.5	2.0	6.0	50.0
e. Greater recycling/composting	0.0	27.0	4.5	3.5	35.0
f. Improve landfill operation	1.5	2.0	0.0	2.0	4.5
g. Public education	6.5	18.0	5.5	4.0	34.0
h. Other	0.0	12.0	0.0	2.5	14.5
i. Improved collection/disposal of hospital hazardous waste	N/a	N/a	N/a	2.0	2.0
Q2.2 – Who should pay for improved garbage collection/disposal – No of responses					
a. Central government	4	5	1	0	10
b. Provincial Council	2	4	3	0	9
c. Local authority	14	42	5	3	64
d. Individual garbage fee	1	12	4	2	19
e. Other	0	1	1	1	3
f. No response	0	1	1	0	2
Q2.3 - Willingness to pay for improved garbage collection/disposal					
Willing to pay (no)	12	27	4	3	46
Not willing to pay (no)	2	17	3	1	23
No response (no)	4	8	6	1	19
Willingness to pay (Rs/mth)	286 (50 – 1,000)	681 (100 – 6,000)	671 (200 – 2,000)	1,625 (2,000 – 2,500)	655 (50-6,000)

Notes: N/a = not applicable

3.2.3 Recycling and Possible Source Separation Collection System

The following table sets out the main interview survey results relating to recycling and a possible source separation collection system. Some key points are summarized below:

- 88 (100%) enterprises believed recycling is necessary, with 69 (78%) enterprises being either very willing (66) or somewhat willing (3) to cooperate in separating their garbage at source, while three are doing this already. The main reasons given by those enterprises not willing to cooperate are that it is inconvenient/difficult (10) or takes too much time (7). The main reasons given by those willing to cooperate are that recycling protects the environment (69), followed by it reduces the amount of waste to disposal (40). 59 of these respondents are willing to sort their wastes into three (24) or more (35) categories, with the preferred source separation system being either coloured plastic bags or permanent containers, collected from outside their premises.
- 22 enterprises indicated an average WTP for permanent containers of 703Rs, while eight enterprises were not willing to pay anything. There were 46 non-responses mainly from hotels and institutions, for the reasons described above.

Table 3-3: Survey Results – Recycling and Possible Source Separation System

Item	Small Waste Gen'rs	Large Waste Generators			Total
		Comm./ industrial	Other Inst'ns	Hospitals	
No of respondents	18	52	13	5	88
Q2.4 – Recycling – No of responses					
Necessary	18	52	13	5	88
Q2.5 - Willingness to cooperate in separating wastes at source – No of responses					
a. Very willing	16	35	11	4	66
b. Somewhat willing	1	1	0	1	3
c. Less/somewhat unwilling	0	0	0	0	0
d. Not willing at all	1	10	1	0	12
e. Already sort	0	6	0	0	6
f. No response	0	0	1	0	1
Q2.6 – Reasons for not being willing to cooperate – No of responses (only if chose Q2.5c or d)					
a. Increased financial burden	0	0	0	0	0
b. Inconvenient/difficult	0	9	1	0	10
c. Takes too much time	0	7	0	0	7
d. Needs/benefits not clear	0	0	0	0	0
e. Other	1	2	0	0	3
f. No response	0	0	1	0	1
Q2.7 – Reasons for being willing to cooperate – No of responses (only if chose Q2.5a, b or e)					
a. Reduces waste to landfill	0	33	3	4	40
b. Protects environment	16	38	10	5	69
c. Earn some extra money	2	4	1	0	7
d. Other	0	4	0	0	4
Q2.8 – No of categories willing to separate waste into – No of responses (only for Q2.5a, b or e)					
a. Two	5	5	1	0	11
b. Three	4	18	1	1	24
c. More than three	8	15	8	4	35
d. No response	0	4	2	0	6
Q2.9 Preferred separate collection system – weighted average rank (only for Q2.5a, b or e)					
a. Coloured plastic bags collected from outside premises	0.0	39.0	6.0	7.5	52.5
b. Permanent coloured containers collected from outside premises	22.5	16.0	7.5	5.0	51.0
c. Own bags/containers collected from outside premises	1.5	6.0	1.5	0.0	9.0
d. Own bags/containers taken to public CP	1.5	0.0	0.0	0.0	1.5
e. Other	0.0	0.0	1.5	0.0	1.5

Q2.10 – Willingness to pay for permanent containers for source separation system – (only for Q2.5a,b or e)					
Willing to pay (no)	12	7	3	0	22
Not willing to pay (no)	1	2	4	1	8
No response (no)	4	33	5	4	46
Willingness to pay (Rs)	238	1,500	643	0	703

3.2.4 On-site Composting

The following table sets out the main interview survey results relating to on-site composting. Some key points are summarized below:

- Nine (10%) enterprises are willing to undertake on-site composting, while seven are doing so already. However, the majority (51, 58%) are not in favour, mainly due to a lack of space on site (41) and it taking too much time (30). Only two enterprises indicated a WTP for a compost container, giving an average WTP of 625Rs. However, this is not considered representative due to the low number of responses. Another 22 enterprises did not respond to this question.
- 44 (50%) enterprises are willing to store their organic wastes for up to one day, if they were to be collected for composting at a centralized facility.

Table 3-4: Survey Results – On-site Composting

Item	Small Waste Gen'rs	Large Waste Generators			Total
		Comm./ industrial	Other Inst'ns	Hospitals	
No of respondents	18	52	13	5	88
Q2.11 – Willing to compost – No of responses					
a. Already compost	0	6	1	0	7
b. Willing	0	2	6	1	9
c. Not willing	0	40	7	4	51
d. No response	18	4	0	0	22
Q2.12 – Willingness to pay for compost system – (only if chose Q2.11b)					
Willing to pay (no)	Not asked	0	2	Not asked	2
Not willing to pay (no)		1	3		4
No response (no)		1	1		2
Willingness to pay (Rs)		0	750		625
Q2.13 – Reasons for not being willing to compost – No of responses (only if chose Q2.11c)					
a. Not enough space on site	Not asked	36	5	Not asked	41
b. Takes too much time		28	2		30
c. LA/contractor should do		0	0		0
d. No equipment		0	0		0
e. Lack of knowledge		0	0		0
f. Concern about smell/pests		16	0		16
g. Not interested		2	0		2
h. Other		2	2		4
Q2.14 – Factors that would encourage on-site composting (only if chose Q2.11b or c)					
a. Free compost container	Not asked	0	1	Not asked	1
b. Availability of cheap, easy to use, nuisance free system		2	4		6
c. Reduction in LA taxes		1	0		1
d. Education/training		0	2		2
e. Earning extra money		0	1		1
f. Other		1	1		2
		50	7		57
Q2.15 – Willingness to store organic wastes between collection – No of days					
a. Half a day	0	4	0	0	4
b. One day	9	24	5	2	40
c. Two days	4	8	2	2	16
d. Three days	2	3	2	0	7
e. More than 3 days	3	13	3	1	20
f. No response	0	3	1	0	4

3.2.5 Environmental Education and General Cleanliness

The following table sets out the main interview survey results relating to on-site composting. Some key points are summarized below:

- 33 (38%) enterprises indicated they have received some health/environmental education related to SWM.
- Most people had received this training as part of their work, including vocational training (e.g. hospitals), on the job training (e.g. hotels) and seminars.
- 87 (99%) enterprises consider a campaign to raise peoples' awareness for maintaining a cleaner city and environment is either somewhat necessary (85) or very necessary (2).

Table 3-5: Survey Results – Environmental Education and General Cleanliness

Item	Small Waste Gen'rs	Large Waste Generators			Total
		Comm./ industrial	Other Inst'ns	Hospitals	
No of respondents					
Q3.1 to 3.2 – Receipt of Health/environmental education/knowledge about SWM					
No of responses	2	19	7	5	33
Source:					
a. School	0	1	0	0	1
b. Leaflets/posters, etc.	0	1	2	1	4
c. Health worker/centre	0	1	1	4	6
d. Community organization/NGO	0	2	2	0	4
e. Newspaper	0	4	1	1	6
f. Radio programme	0	5	1	2	8
g. TV programmes	0	6	1	2	9
h. Local authority	1	3	4	0	8
i. Local authority contractor	0	0	0	3	3
j. Central government/MOH	0	2	3	5	10
k. Other	1	18	3	0	22
l. No response	0	1	0	0	1
Q3.2 – Necessity for campaign to raise peoples' awareness of need for cleaner city/environment					
a. Very necessary	18	50	13	4	85
b. Somewhat necessary	0	1	0	1	2
c. Not very necessary	0	0	0	0	0
d. Not necessary at all	0	0	0	0	0
e. No response	0	1	0	0	1

Note: MOH = Ministry of Health

3.2.6 Other Comments

Other comments covered a broad range of issues and are summarized below. The most common comments relate to:

- Widespread support for recycling (17).
- A need for public education/awareness raising (14).
- Polythene should be banned (11).
- A proper SWM system should be established (6).

Table 3-6: Survey Results – Other Comments

Comments	Small Waste Genr's	Large Waste Generators			Total
		Comm./ Indust.	Other Inst'ns	Hosp -itals	
Five or more comments					
Supports recycling	0	14	1	2	17
Public education/awareness raising is vital	1	7	6	0	14
Ban polythene	0	10	1	0	11
Three or four comments					
Establish proper SWM systems/facilities	4	1	1	0	6
Install notices about illegal waste discharges being prohibited and associated fines	3	0	0	0	3
Take legal action against inappropriate waste disposal	0	1	2	0	3
Daily collection	3	0	0	0	3
Two comments					
Protect beach/coast from pollution	0	1	1	0	2
Reduce polythene use	0	2	0	0	2
Use biodegradable items	0	1	1	0	2
Install new collection bins	2	0	0	0	2
Install large bins and other waste disposal facilities	0	2	0	0	2
Implement collection system with scheduled times/bell system	2	0	0	0	2
Recycle polythene	0	1	1	0	2
Supports composting	0	1	1	0	2
MC should encourage households to do composting (2) (e.g. free compost (1)) and give them compost bins (1)	0	0	0	2	2
One comment					
Current system is good but could be better	0	0	1	0	1
Introduce individual garbage tax	0	1	0	0	1
Reduce assessment tax for those doing recycling	0	0	0	1	1
Want labourers for cleaning the beach	0	1	0	0	1
Workers should do their jobs well	0	1	0	0	1
More collection vehicles/labourers needed	1	0	0	0	1
Maintain bins properly	1	0	0	0	1
Locate bins in appropriate places	1	0	0	0	1
More regular collection	1	0	0	0	1
Keep waste collection points	0	1	0	0	1
Give free facilities to schools	0	0	1	0	1
Government sector should get special attention	0	0	1	0	1
Give SWM technical knowledge to small factories	0	1	0	0	1
Increase womens' participation in SWM	1	0	0	0	1
Non-recyclable items should be buried	0	1	0	0	1
Everything should be recycled	0	1	0	0	1
Will support any plastic/polythene collection point	0	1	0	0	1
Collect waste from bins for recycling	1	0	0	0	1
Schools require composting equipment	0	0	1	0	1
MC can earn income by recycling polythene	0	0	0	1	1
MC should start large scale composting unit	0	0	0	1	1
Start iron recycling in Sri Lanka	0	1	0	0	1
Start new recycling company – will help to clean city	0	1	0	0	1
Waste textiles can be reused/recycled	0	1	0	0	1
Other comments					
Improve drain cleaning	2	0	1	0	3
Improve drainage system	1	1	0	0	2
Improve toilet facilities, including near beach (1)	0	2	0	0	2
Relocate refugees from town centre	1	0	0	0	1

3.3 Cleansing Workers Survey in Negombo

Findings from Cleansing Workers Survey in Negombo

A questionnaire survey was conducted among 30 municipal cleansing workers, in order to gather;

- Basic socio-economic profiles of cleansing workers.
- An appreciation of working condition of municipal cleansing workers.

Period of survey: Third and fourth week of July and two days in August, 2002

Sample size: 30

1. General Questions

Q1-1 Gender

	Negombo	
	Number	%
1 Male	23	77%
2 Female	7	23%
Total	30	100%

Q1-2 Ethnicity

	Negombo	
	Number	%
1 Sinhala	24	80%
2 Muslim	0	0%
3 Tamil	6	20%
4 Other	0	0%
Total	30	100%

Q1-3 Religion

	Negombo	
	Number	%
1 Buddhist	7	23%
2 Islam	0	0%
3 Hindu	5	17%
4 Christian	18	60%
5 Other	0	0%
Total	30	100%

Q1-4 Household information

(person)	Negombo
Avg. number of family members	4.9
(Rs.)	Negombo
Avg. household income	7,738
(Rs.)	Negombo
Income per person	1,590

Q1-5 How much is the total expenditure of your household per month on average?

(Rs.)	Negombo
Avg. household expenditure	6,357

(Rs.)	Negombo
Expenditure per person	1,306

Q1-6 Please specify the priority for your daily life regarding the improvement of the following aspects?

	Negombo	point
1 First	Wastewater collection	30
2 Second	Others (Toilet / housing problems)	32
3 Third	Water supply	26
4 Fourth	Storm water drainage	25
5 Fifth	Garbage collection	10
6 Sixth	Electricity supply	10
7 Seventh	Access road to my house	2

2. Questions about Your Work

Part A : Status and Wage

Q2-1 Are you a permanent worker or a casual worker?

	Negombo	
	Number	%
1 Permanent	20	67%
2 Casual	10	33%
Total	30	100%

Q2-2 How long have you been doing this job?

(years)	Negombo
Average working years	10.1

Q2-3 How many days do you usually work per week?

(days)	Negombo
Average working days per week	6.2

Q2-4 How many hours do you usually work per day?

(hours)	Negombo
Average working hours per day	6.4

Q2-5 Had either your father or mother done this same job?

		Negombo	
		Number	%
1	Yes	10	33%
2	No	20	67%
Total		30	100%

Q2-6 How much is your monthly wage on average (including official allowance such as holiday pay, overtime and so on)?

(Rs)	Negombo
Average monthly income	5,712

Q2-7 Do you have any secondary jobs after working hours?

		Negombo	
		Number	%
1	Yes	8	27%
2	No	22	73%
Total		30	100%

Q2-8 How often and what type of work do you do as a secondary job?

- (1) How often: Frequency varies from every day to once a month. Most of them work a few times per week.
- (2) Type of work: Labor work such as cleaning houses, shops and as servants.

Q2-9 How much is your monthly wage on average from this secondary resource?

(Rs)	Negombo
Average monthly income from secondary job	775

Note: No. of effective answers are eight.

Q2-10 Are there some waste generators which give you small allowance, including the reward to your extra cleaning work?

		Negombo	
		Number	%
1	Yes	21	70%
2	No	9	30%
Total		30	100%

Q2-11 How much is your income from small allowance per month on average?

(Rs)	Negombo
Average monthly allowance from waste generators	294

Note: No. of effective answers are 21.

Q2-12 Do you know other solid waste laborers who sometimes receive a small allowance?

		Negombo	
		Number	%
1	Yes	23	77%
2	No	2	7%
98	Don't know	5	17%
Total		30	100%

Q2-13 Do you collect recyclable materials from waste for sale?

		Negombo	
		Number	%
1	Yes	12	40%
2	No	18	60%
Total		30	100%

Q2-14 If yes to Q2-13, what materials do you collect, how much do you collect per month and who do you sell them to?

		Negombo	
		Number	%
1	Bottle	7	19%
2	Iron	3	8%
3	Aluminum	2	5%
4	Tin	4	11%
5	Metal	1	3%
6	Copper	1	3%
7	Paper	1	3%
8	Irrelevant	18	49%
Total		37	100%

(Rs.)	Negombo
Average monthly income from recycling	132

Note: No. of effective answers are 12 only on this question.

Part B : Working Conditions and Technical Problems

Q2-15 These are the possible difficulties you may face. Please prioritize your difficulties?

	(points)	Negombo
1	Heavier workload and unhealthier conditions due to the improper discharge of waste by people	39.5
2	Unsanitary waste such as human waste / excrement is mixed with other waste	32
3	Heavier workload for you due to absenteeism among your colleagues	11
4	Heavier workload for you due to alcoholism among your colleagues	2
5	Insufficient wage	54.5
6	Health problems	24.5
7	The working schedule such as allocation of vehicles and routes are so changeable	12.5
8	Lack of protecting clothing (boots, gloves, apron and so on)	35
9	Vehicle often breakdown	14
10	Not enough tools for collection work	42
11	Vehicle parked on the street makes your work more difficult	17.5
12	Others	7.5
Total		292.0

Note: Others are "no dumping place" and "people's discriminatory behavior towards garbage workers".

Q2-16 Are there any particular areas of the city where you feel difficult to collect garbage?

	Negombo	
	Number	%
1 Yes	18	60%
2 No	12	40%
Total	30	100%

Q2-17 If yes to the previous question, what are the reasons of difficulties?

	Negombo	
	Number	%
1 Improper discharge of waste by people	4	13%
2 Physically difficult work	0	0%
3 Large amount of garbage	8	25%
4 Traffic and many people	4	13%
5 Road conditions	2	6%
6 Other	2	6%
98 Don't know	0	0%
99 Irrelevant	12	38%
Total	32	100%

Note: Other means "dumping of dangerous trees" and "no dumping place".

Q2-18 When difficulties relating to your work arise, whom you talk to first? (**Choose only one.**)

		Negombo	
		Number	%
1	Officer in charge such as PHI and MOH	0	0%
2	Supervisor	20	67%
3	Minor supervisor	10	33%
4	Colleagues	0	0%
5	Others	0	0%
Total		30	100%

Q2-19 How do you think MC / UC can improve the garbage collection system? Please give your honest opinion.

		Negombo	
		Number	%
1	Household / citizens contribution	4	8%
2	Need salary increase	7	14%
3	Need more workers	8	16%
4	Need awareness program	7	14%
5	Need more equipments / vehicles	10	20%
6	Health protection incl. introducing protecting clothing	6	12%
7	Others	5	10%
98	Don't know	2	4%
Total		49	100%

Note: Examples of others are "should make us permanent" and "rehabilitation of markets"