

Solid waste, reduction, reuse and recycling

By

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Solid Waste Management

We have not yet recognized the crucial role of the recycling industry, most of which is in the informal sector.

Solid Waste Management



Solid Waste Collection and Disposal in Karachi

Solid Waste	Tons Per Day
Separated by housewives	800
Separated by waste pickers	700
Fuel for kilns	350
Used for land reclamation	350
Lifted by KMC	2,200
Not picked up (most of it dumped in natural drains)	2,200
Total	6,600

Solid Waste Composition in Karachi

S. No	Components	Percentage by Weight			
		Low Income	Middle Income	High Income	Average
1	Paper and Cardboard	11.10	11.10	06.80	10.00
2	Food Waste	10.60	26.70	43.70	27.00
3	Textile	17.80	4.00	3.40	8.40
4	Wood	4.30	1.60	1.40	2.43
5	Grass, Leaves, Garden Waste	6.40	15.90	12.80	11.70
6	Plastic & Polythene	7.40	6.40	6.10	6.63
7	Leather & Rubber	4.30	1.60	0.40	2.10
8	Bones & Shells	0.00	1.60	2.10	0.80
9	Metals	0.40	0.30	1.40	0.70
10	Glass	0.00	2.40	2.10	1.70
11	Stone, Coarse, Aggregates & China Wares	5.30	0.00	2.70	2.70
12	Miscellaneous	28.40	31.80	17.10	26.00
	Total	100.00	100.00	100.00	100.00

Physical Characteristics of city refuse (% by weight)

Place	Bangkok (Thailand)	Jakarta (Indonesia)	Calcutta (India)	Madras (India)	Paris (France)	London (UK)	NewYork (USA)	Karachi (Pakistan)
Paper	24.60	2.00	3.18	7.85	34.00	38.00	50.00	3.60
Plastics	7.00	2.00	0.65	0.88	4.00	2.50	3.00	2.10
Rags	0.66	-	3.60	4.80	4.00	3.00	2.00	7.10
Metals	1.00	2.00	0.66	0.95	8.00	9.00	8.00	0.20
Glass pieces	1.00	2.00	3.80	0.95	8.00	9.00	8.00	2.50
Fines*	8.30	25.00	34.00	28.00	20.00	11.00	7.00	18.20
Compost able matter	44.00	60.00	47.00	48.00	15.00	24.00	18.00	52.00
Moisture	-	-	41.11	36.63	35.00	25.00	30.00	43.50

*Include fine size material, i.e., dust, ash, etc.

Role of waste Pickers

- The pickers collect paper, plastic, rags, bone and metal. They put these in big plastic bags and carry them to sorting places. If the sorting point is near the kutchra kundi, the pickers carry it there physically or on bicycles.
- If it is far, a donkey cart or a Suzuki pick-up is hired for this purpose.

- Most of the sorting places are located near the nallas, under bridges, in open spaces meant for parks and playgrounds, in abandoned public latrines and even at bus stop sheds.
- The contractor pays bhatta for the use of these spaces to functionaries of government departments who own the space or to neighbourhood police.
- CDG garbage collection crews and drivers do not lift garbage from the kutchra kundis regularly so as to help the pickers in their work
- In return the contractor pays the KMC drivers and crew between Rs 50 to 150 per day. In addition, the cost of the diesel saved by not making the journey from the kutchra kundis to the distant land fill sites, is also pocketed by the CDG staff.

- The sorting point is operated by a contractor who hires 4 to 6 persons to separate different items and to pack them in separate containers.
- From the sorting point the packed waste is taken to Sher Shah factories for primary recycling or to dealers who are also located in Sher Shah, for refined sorting.
- Alternatively, in a few cases, it is taken directly to factories in Korangi, New Karachi, Orangi and in Sher Shah itself for recycling or sent to recycling factories in the Punjab industrial cities.
- The journey from the sorting place to Sher Shah or other locations is by pick-ups and sometime by trucks. Since these vehicles are overloaded, they pay Rs 150 to 200 per trip as bhatta to the traffic police. In addition, Rs 10 to 15 are paid at every police chowki (post).

- Paper and bone are the two main items that are collected from the dumps. Others such as plastic, glass and metal are removed at home by housewives and sold to the kabaris. Paper is turned into cardboard and bones are boiled to remove grease from them.
- The grease is used for washing soap factories and also for soap making. The bones are ground and mixed with poultry feed.
- The grease-removing process is very polluting and since these Sher Shah factories are in dense residential areas, there is constant conflict between the residents and the factory owners.

- The kabaris and the middle men who organize waste collection through pickers, sell it to middle dealers of which there are an estimated 800.
- There are also 1,000 main dealers who also perform secondary reprocessing through manual or mechanical means. These dealers then further sell to the recycling industry. Increasingly heroin addicts are being employed for waste picking purposes by the middle men. These addicts have invaded a number of localities in a big way.

- The recycling industry transforms paper into paper board; glass into bottles and sheets; plastic into toys, utensils and electrical conduits; bones into ornaments and poultry feed; and all types of metals into various utensils, mild steel bars and machinery items.
- There are over 435 recycling factories in Karachi and the vast majority of them are informal. They are located in densely inhabited inner city areas, Sher Shah, along the Lyari Corridor and in a number of katchi abadis. The residents of the areas consider them to be a nuisance.
- Many of the recycling factory owners also consider these locations inappropriate and have bad relations with the people of the neighbourhoods in which they are located.

- The recycling industry plays a very important role in garbage collection and disposal and in the economy of Karachi.
- It provides employment to over 55,000 families and its annual turn over is over Rs 1.2 billion. In addition, its total production of recyclable material is 1,230,800 tons per year. Also, it is expanding every day and becoming more sophisticated.
- It has strong links with industrial cities in the Punjab such as Gujranwala where most of Karachi's plastic is recycled. The table below sums up the solid waste collection in Karachi.

Waste Pickers and the Recycling Industry



One man's garbage is another man's art



Recommendations

1. The possibility of shifting the recycling industry to the proximity of the land fill sites should be studied. This shifting will shift the entire activity of waste picking to the land fill sites as well.
2. The recycling industry will require land, water, electricity and waste water disposal. In addition, it will require land for housing its workers. This should be provided to them at a cost
3. Middle men, who organise waste pickers should also be given land for storage of the picked material and for housing their labour on an yearly renewable lease basis. They should pay for picking recyclable material from the land fill site.

4 The CDG/private operator should be responsible for spreading this material for picking. And four, technical support and credit should be provided to the recycling industry so as to improve its functioning. The development of the above proposal means the creation of a garbage city. If it can be achieved, Karachi's solid waste problem will not only be solved but will become financially sustainable.



