**WASTE MANAGEMENT IN SLUMS** 3.11.2013

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**WASTE COLLECTION IS EASIEST IN SLUMS**

Slum dwellers are always the most neglected sector for waste collection.

They desire and understand the need for a clean environment and the costs of ill health.

They are the most willing to cooperate in improved waste management efforts.

Slum dwellers are the most willing to pay for good waste managemt despite lower incomes.

No user fees needed if onsite composting can save transport costs for the city.

Only political and administrative will is needed to keep slums clean.

**SIX EASY PROVEN METHODS FOR WASTE COLLECTION AND TREATMENT**

1, Lorry at the slum entrance

2, Exchangeable bins at slum entrance

3, Door-to-door collection in handcarts

4, Take-away bins in narrow lanes

5, Shared bio-bins for on-site composting

6, Community bio-bins

The slum-dwellers need to be consulted on which system they would like to have.

**1, LORRY AT THE SLUM ENTRANCE**

Even in crowded ‘unrecognised’ slums, the narrow walking paths between shacks are usually kept clean, but waste often lies uncollected for days in large heaps just outside the slum entrance, on road shoulders or even the carriageway of the nearest motorable road. This is because cities usually give lowest priority to their poorest areas.

Container-bins on such street-corners always fail, with all waste scattered around and little inside it, as seen in both rich and poor areas. Open heaps on the ground seem to be more approachable, with a smaller area dirtied. It takes a lorry 15-30 minutes to lift, load and clear such street-corner heaps.

Instead, a lorry waits at the slum entrance at a fixed time, while the helper moves through the slum with a whistle to announce its arrival. Slum-dwellers come to the waiting lorry with their waste. Lorry pickup time, duration and frequency are unchanged. So no extra payment needed. City commitment to Punctuality and Regularity will eliminate slum-caused ‘black spots’.

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**2, EXCHANGEABLE BINS AT SLUM ENTRANCE**

In smaller unrecognized clusters, or where workers leave before dawn, if one family or shop near the entrance takes responsibility, a bin is kept at the former ‘black spot’ location to receive only wet waste : a 50 litre bin for every 50 houses. At the transporter’s convenient time, the filled bin is taken away and replaced by an empty one for next morning, which the incharge resident or shop needs to keep safe indoors until bin is next needed.

**3, DOOR-TO-DOOR COLLECTION IN HANDCARTS**

This is done in recognized and upgraded slums where lanes are paved and wide enough for movement. Waste is collected in the usual way in hand-carts at a pre-fixed time of day. No extra payment is required.

**4, TAKE-AWAY BINS IN NARROW LANES**

In Mumbai, slum associations appoint youths for cleaning work, before they go to college or jobs.

First a mass clean-up drive is undertaken. Then the new system is immediately started :

**7-8am** : narrow open drains beside internal footpaths are swept clean.

**8am** : 50-litre bins given by the city are placed at path crossings, one per 25 homes or so.

**8-10 am** : waste is carried from each home to nearest bin at residents’ convenient time.

**10-11 am** : All bins are removed and unloaded directly into waiting truck outside the slum.

11-11:30 am: Bins are stacked till next day in a protected open space (timber-yard etc).

Residents willingly pay Re 1 per head or Rs 5 per family. More for shops outside the slum.

**The city’s cooperation in Regular and Punctual presence of a lorry at 10-11am is vital !!**

**Cities are only as clean as their dirtiest areas, so city managers must give their poorest the priority that Gandhiji always kept in mind.**

**5, SHARED BIO-BINS : DHAKA MODEL**

An NGO, Waste Concern, provides 5-6 families a 100-litre covered barrel, perforated on sides and bottom and placed off the ground on a raised base, with a compost layer at bottom as a starter bed.

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Residents must fill only kitchen waste daily in layers not more than ~50mm (2” ), for mulch-composting in the barrel. Air can reach through thin layers to prevent smell. A sprinkling of old compost over fresh discards acts as odour-barrier, as at KCDC.

The NGO buys the ready compost when the barrel is full, after 3 months or so.

Demand for shared bins is good as residents see their kitchen discards as a valuable resource. In fact, the 5-6 self-selected cooperating family groups asked for hinged lockable lids on the barrels, to prevent careless neighbours spoiling their compost with unwanted trash. Spread of this system to all slums was slowed only by the NGO’s inability to raise funds fast enough for so many barrels.

**6, COLONY OR COMMUNITY BIO-BINS**

Since 12 years, one pair of perforated-concrete bio-bins has replaced a dirty overflowing street-corner waste container which was a huge ‘black spot’. They receive the daily food-fruit-flower waste of 125 upper-middle-income families at Diamond Garden in Chembur, Mumbai, who all pay for the program, managed by their colony residents.

Door-to-door collectors daily load their segregated wet waste into one bio-bin, add bioculture and manually with a fork pull the contents from one end to another to turn and aerate and mix old and new waste. There is no spillage. The bin lids allow air in but keep out dogs and cats.

After 15 days, a similar bio-bin is used while compost in the 1st bin matures in 15 more days. Compost is not sold but used in flowerbeds for street beautification. This has improved the area’s property values far more than their monthly contribution for on-site waste management.

This program has also improved the livelihoods of its part-time employees :

3 get employed, for an hour every morning for door to door collection and drain cleaning.

Street sweeping is rarely required as residents do not litter, keeping their dry waste for gifting or sale to kabadiwalas.

3 more get employed for an hour a day for composting and street-garden upkeep work.

This system only requires that a city **ALLOWS** enthusiastic citizens to self-manage their waste.

The system fails in cities where there is no desire to minimize waste because tipping fees make waste minimization and transport savings a threat to ‘extra’ income.

This can be countered by legally encouraging extra income through prizes for good segregated transport of wet waste.

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Where there is official will there is a way. The Warangal AP Commissioner sustained efficient door-to-door collection of segregated waste by early every morning drawing from a jar the random number of a push-cart route, then immediately visiting it and handing over a daily reward of Rs 250 cash to the 3 team members if all were present, punctual, collected regularly from every house, had well-segregated waste in their bins and were wearing protective gear. Such surprise visits kept all 373 push-cart-route members on their toes, and happy, as they trusted the fairness and impartiality of their Commissioner.

Mumbai rewarded responsible civic behavior by giving cooperating neighbourhood ‘ALM’s (Advanced Locality Management groups doing decentralized waste processing) priority in area pothole repair, streetlight maintenance, slightly extended water-supply etc and attendance by an area official at their weekly ALM meetings to hear grievances and ensure prompt redressal. All this cost the city nothing extra but meant a great deal to the ALM members.

Bangalore can also institute Ward-Committee-of-the-month cash rewards in Wards with the most off-site waste reduction through new decentralized processing efforts. Judging will have to be done by one or more citizen groups doing surprise site inspections of submitted data.

The prize money pool for both door-to-door collectors of segregated waste and for supportive Ward Committees, can grow at no cost to the city, if it is a percentage of transport costs saved.