

Designing a humane 'Waste Management System'.



"It is forbidden to throw garbage here"

How a single image can so strikingly illustrate a complete story and all its contradictions. It may also save an entire lecture on explaining what an **ineffective, unhygienic and demeaning waste management system (WMS)** looks like.

Typically called the "**Kutchra Kundi**", it is a scene replicated at hundreds, if not thousands of back walls, open plots, unattended corners, platforms with 3 brick walls or skips - as garbage containment measures. This exploitative system has continued for centuries because of:

- a. Easy availability of vulnerable cheap labour that can be taken advantage of to perform most **undignified, unsafe and unhygienic tasks**.
- b. Lack of professional knowledge about modern and humane waste management systems.

How the existing waste management systems work.

1. The existing systems have no stated or mandatory requirement for citizens on how they must dispose their garbage, leave aside 'at-source' waste segregation into different categories. Like wise no municipality or cantonment has standardised the size or colour of containers, bins or bags that the residents must use for garbage. Residents have an unwritten **choice** to either let the garbage be collected by the door-to door collection truck (if available) **OR** carry it manually and drop it in a nearby '**Kutchra Kundi**'. Giving this option is considered an unforgiveable violation of a rational waste management system.
2. A **Kutchra Kundi** (regardless of its nature - open plot, skip or a walled platform) is a magnet for attracting waste from far and wide. Within no time, heaps of garbage get piled up and scattered in and around the Kutchra Kundi. The place becomes infested with disease, rodents, cats, dogs and odour that makes it difficult for people to even walk nearby – without holding their breath.



3. The sanitation workers are compelled to manually perform a hugely unhygienic, un-ergonomic and humiliating task of first collecting garbage from skips / kutchra kundi and then transferring the same onto a garbage truck – almost always with their bare hands.



4. The garbage is collected into baskets and transferred to the person standing on top of the collection truck. This hazardous process of transfer entails massive garbage spilling over the eyes, face, hands and body of both the giver and the receiver.



5. In absence of any defined instructions on equipment or methodology, workers are compelled to adopt numerous backbreaking and hazardous techniques to pick and transfer the garbage to the truck. The pictures below are only a minor reflection of this compulsive creativity.



6. Except for the truck replacing the horse, there is little to suggest that our existing waste management systems are any better than the way the garbage was collected over 100 years ago.



A humane and scientific waste management system (WMS).

Pakistan ought to leave behind its ancient waste management processes built on exploitation, indignity and degradation of the poor. Instead, we must create modern, scientific and humane waste management systems that are based on the following essential principles.

1. A WMS must address all functions of waste management, i.e. segregation, collection, transportation, recycling and disposal of waste.
2. A processes and rules of a WMS must be documented and accessible to all those who reside or work in its jurisdiction.

The system must focus on a. creating least waste; b. 'at source' segregation; c. reuse and recycling; d. human dignity, convenience and safety and e. communicated and known to all – including consequences for any violations.

3. A ban on use and sale of plastic bags and single use plastic bottles, that have choked the streets and water systems of our towns ought to be an integral part of a modern WMS.
4. The concept of creating **Kutchra Kundis** of any kind, at any location, must be completely done away with and all waste must be collected through a door-to-door garbage collection system.
5. The concept of “**at-source segregation**” of garbage into 3 categories, namely, recyclables, organic materials and unusable general waste lies at the heart of a modern WMS and must be made mandatory. The recyclables include plastic, paper, metal and glass, while the organic waste consists of bio-degradable food waste which could be easily composted.
6. Every municipality / cantonment must specify the colour, size and type of bin / drum that the residents must use for their 'at source' segregated waste. The waste bins must be kept inside the building / boundary wall and taken out only on the scheduled day and time of collection.
7. There must be significant consequences / fines for throwing waste at any public space. The very idea of first throwing waste on ground and then making sanitation workers pick it up is unethical, inhuman and ought to be completely forbidden.
8. An important feature of a humane WMS is the ease and the dignity with which a sanitation worker transfers waste from ground to the garbage truck. This article suggests the design of a proposed garbage collection vehicle (**Appendix A**), that can be fabricated locally and has 3 separate compartments, one for each category of waste. It is a low height Suzuki-mounted fabrication that enables convenient transfer of waste from bins to the collection vehicle.
9. A humane WMS must have the highest consideration for health, safety and dignity of the sanitation workers. They must be provided a decent uniform and a complete set of PPEs for protection of hands, eyes, face, head and feet. They need to be addressed by a respectable name such as “Madadgar” and be compensated by a wage that is at least 20% more than the minimum legal wage defined by the government.

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