

## **Solid Waste Management in Ranchi: The Junk then 2000 and now 2016**

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### **Abstract**

Closed eyes may reign in darkness for one, but turning a blind eye is the harbinger of darkness all over. A case in point, Ranchi of the year 2000 was not what we are seeing now. While the population has more than doubled since the city was catapulted to the capitalhood, it has been witnessing turmoils and upheavals through these years in terms of civic amenities, environmental status, peoples' behaviour and wasteland crisis. While our present studies have revealed that people, over these years have become more aware about the wastes and their implications, some criminal negligence is being observed by the people in most areas, even by the educated mass. It is understood now that the need of the hour is to usher into a careful education and movement among the people and proper implementation of the plans, since the billion rupee drains are being deliberately filled up with garbage, earth cutting soil and stone dust emanating from the deep borings done nearby. Roads are getting puddle and with abundant potholes, inadvertent encroachments are being done as a matter of show of strength. Before we get into a slurry, it is prudent that the system picks up the cudgel through local bodies, NGOs, better planned education and sensitising school students. Volunteers from higher education institutions should take a pro active role in this matter rather turning a blind eye.

**KEYWORDS:** environmental crisis, movement, planning, solid waste.

### **INTRODUCTION**

Wherever man colonizes, in a process of a give and take, it consumes a lot from the environment and releases the things it cannot consume. It is obvious that wherever the resources are available, colonization will take place there but despite the long history of man-kind, over the wasteful things, man seems to be quite confused about it (Caplan et.al., 2002).

In India the problem has always been there whether it was 1947 or 2000 or 2016. Scientists have long since being starving hard over striking the right policies (Johnstone et.al., 2008). The household in the urban areas is the real culprit in making the situation worse. Other ideas have appeared like putting stringent taxation measures (Kim et.al., 2008) in order to combat the menace of solid waste. Among the measures the authorities normally take, recycling is also practiced although it has raised more questions than answered (Kinnaman et.al., 2006). Acharya 1970 correlated the Indian scenario with regard to the collection transportation and disposal of city refuse.

In our present work comprising of two set of teams separated by 16 years with the principal author being common it was sought to figure out the changes in the pattern of the waste generation per household, nature of the waste, disposal method and the change in the level of consciousness with regard to the waste management. Even in a semi-urban area of India like Ranchi, the observations are quite stimulating. 16 years ago, Ranchi was on the threshold of making history as it

was slated to be the capital of Jharkhand. Our first team had made on the intensive assessment of the scenario then. Since then that is with the capital hood of Ranchi there has been a spectres of changes in terms of population intensification, standard of living upliftment, social changes, means of transportation and communication and commensurate cultural changes. Thus, it was found worthwhile to make a repeat of the 16-year-old work to find out if the changes have appeared in the people's mind-set also.

## METHODOLOGY

Given the large expanse of Ranchi city, it was divided into many Zones for the sake of feasibility :

Zone 1- Lalpur, Morahbadi, Kokar.

Zone 2- Gossner compound, Sirom toli, Bahubazar, Samlong.

Zone 3- Singhmore, Kadru, Hatia.

In either the readings taken in 2000 and 2016, a total of 900 houses were studied and the tabulation was based on our observation in commensurate table, pie-chart and histogram. Certainly our findings could be used as an indicator for future studies and as guidelines for municipality services to adjust to the changing times.

Our endeavor centered around 2 factors:

- ❖ Classification of waste at door-to-door level.
- ❖ Acquisition of the knowledge about the types of waste.

To begin with, in our survey, a questionnaire was prepared and distributed along with 2 garbage bags (less than 40 µ).

We began this survey during post-summer period and completed it by following methodology described below:

1. We expanded our survey to 3 zones. After the selection of the house to be surveyed we went door-to-door and explained the purpose behind this survey, and gave them two garbage bags, one for biodegradable and another for non-biodegradable waste. We requested them to keep the waste in solid form that is being produced over the next 24 hours.
2. Next day, we visited the prior informed house and asked for the solid waste kept for the purpose. The biodegradable waste contained peels of vegetables, stale leftover food, dry leaves, maize cobs, eggs, bones, newspapers, etc. The non-biodegradable waste included wrappers, tin foils, pens, broken bulbs. We separated the recyclable tetra packs and glass bottles.
3. The weighing machine used by us was a hand held spring balance weighing up to 5Kg. So the 3 kinds of the waste were weighed separately by us.
4. Questions were asked from the head of families or any present member regarding our survey like
  - ✓ Qualification
  - ✓ No. of family members

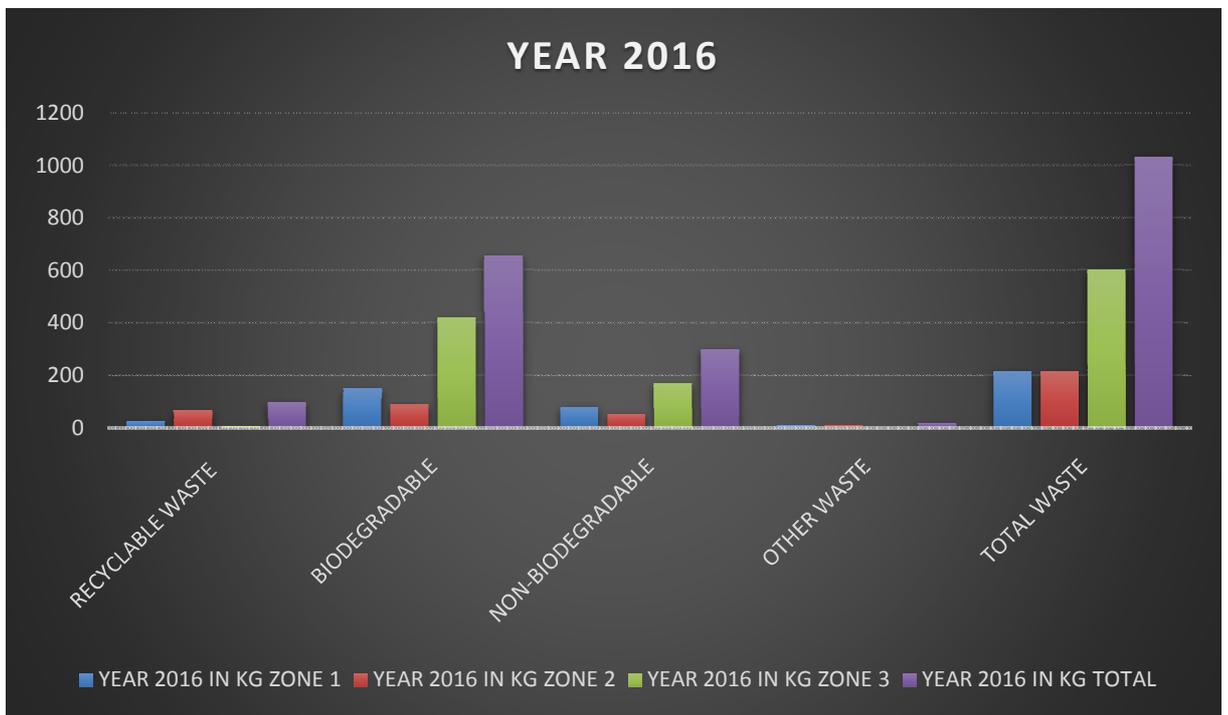
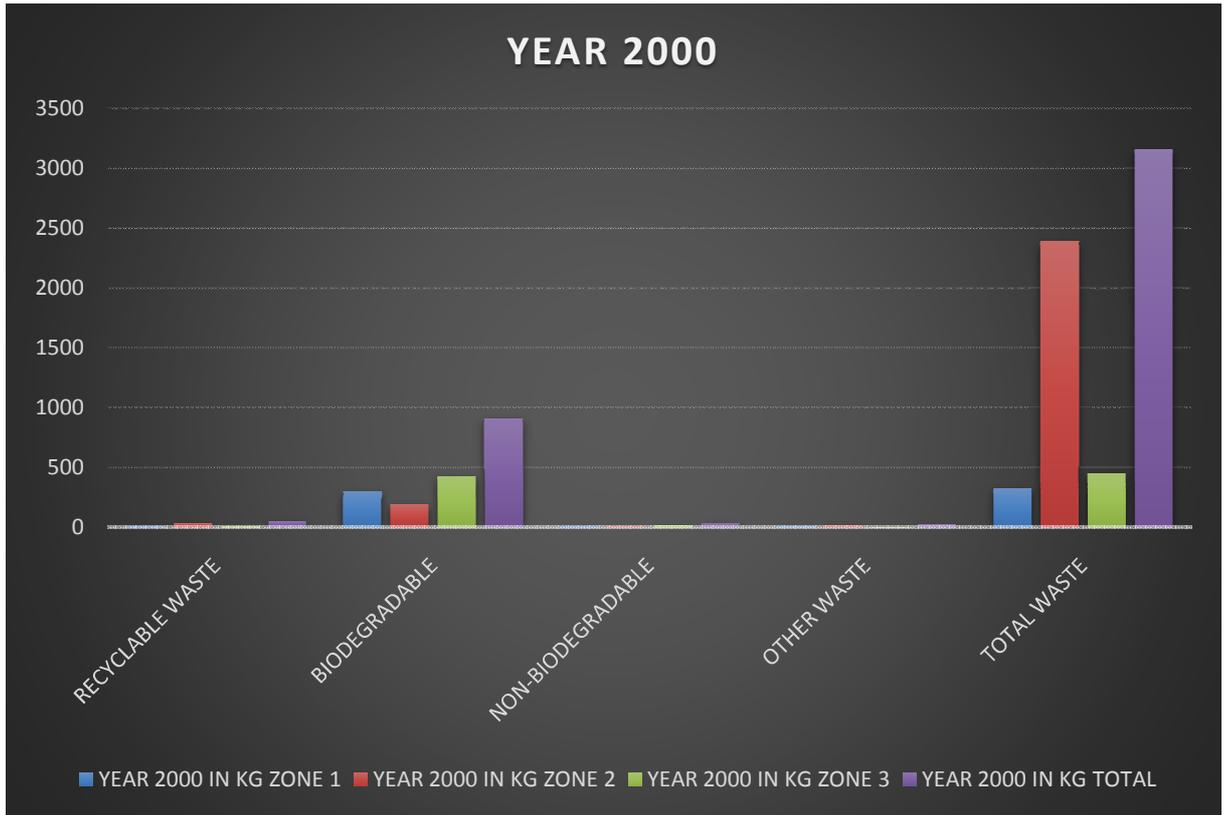
- ✓ Awareness about polythene bags.
- ✓ Awareness about e-waste (2016 only, being a new thing) etc.

## OBSERVATION AND CONCLUSIONS

**COMPARISON : YEAR 2000 AND 2016****YEAR 2000 IN KGS**

TYPE OF WASTE	ZONE 1	ZONE 2	ZONE 3	TOTAL
RECYCLABLE WASTE	9.297	28.486	10	47.783
BIODEGRADABLE	295.442	187.39	425.15	907.982
NON-BIODEGRADABLE	9.281	6.16	15	30.441
OTHER WASTE	4.02	16.85	0.5	21.37
<b>TOTAL WASTE</b>	<b>318.8</b>	<b>2389</b>	<b>450.2</b>	<b>3158</b>

YEAR 2016 IN KGS				
TYPE OF WASTE	ZONE 1	ZONE 2	ZONE 3	TOTAL
RECYCLABLE WASTE	26.1	65	6	97.1
BIODEGRADABLE	148	89	418.6	655.6
NON-BIODEGRADABLE	79.5	52.5	168	300
OTHER WASTE	8	10		18
<b>TOTAL WASTE</b>	<b>215.2</b>	<b>216</b>	<b>602</b>	<b>1033.2</b>



In course of our work, we had broadly two sets of observations-

1. General observations that were indicative in nature, and
2. Specific observations that were tabled and put to scrutiny.

In our general observations in both the years 2000 and 2016, we encountered several noxious habits of the people like-

- a. Encroachment of the roads and open public land.
- b. Strewing solid wastes everywhere, even in drains meant for effluents and in other's campuses, schools.
- c. Indifference towards the nature of garbages, whether compost worthy or hazardous.
- d. No knowledge of e-waste in 2000, some knowledge in 2016.

Out in the specific observations, it was found that in zone 1 and 2, the recyclable waste had gone up remarkably over these sixteen years as shown in the table and histogram. The biodegradable wastes, on the other hand, was found to increase significantly. Common to all, ie., in zones 1,2 and 3 the non biodegradable wastes showed up further. One category of waste matter, that was practically non-existent in 2000, other wastes, appeared in 2016. In terms of total waste matter, while zone 2 showed a decrease, zone 3 showed a remarkable increase.

The plausible reason behind the rise in recyclable waste in zone 1 and 2 is probably the existence of established old colonies. Out here the extent of consumption of perishable items, largely food matter was set long back. Further economic and social development did add to the tempo of consumption, but in other areas. Development from them reflected on higher end items. In the zone 3 areas which are underdeveloped quite a bit with not so rich population, major expenses must have been incurring on food items, so biodegradable waste was more in this area. In whichever areas there was a rise in non biodegradable wastes, it can be attributed to the changing times, rise in income, improvement in the means of transport and communications, packaging industries and thus the resultant emerging social revolution. The appearance of the category other waste is quit a curious issue. Tetra packs are here to stay in the name of wellness, it is a scourge in the sense that it is neither biodegradable nor recyclable. The lowering of zone 2 total wastes may be attributed to the adherence for consumption of food items from fresh local market and reusing the waste as compost within one's precincts.

## SUGGESTIONS

Since the times have been changing, a system approach must emerge, though social changes are slow to come by. The main hurdles should be singled out by the progressive segment of the society and the means to overcome them should be looked after by the authorities.

At the personal level the knowledge and practice to segregate the wastes should be encouraged. Composting at domestic and local community level must come in. Recyclable wastes should necessarily be treated well. The remainder junk should be done in in landfills that are geologically safe enough not to ruin the groundwater quality.

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