

COST EFFICACY OF HOUSEHOLD WASTE MANAGEMENT

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ABSTRACT:

Households are single largest generators of Municipal Solid Waste. Due to increasing population the landfill areas are not available and transporting waste also becomes costly especially in metropolitan cities. Household Waste is typically differentiated as dry waste and wet waste. Segregation and disposal of it at the site of generation is considered as the best solution. This becomes cost effective considering the factors involved like collection, transport, separation at landfill site, disposal, labor, hygiene and health.

Management of urban solid waste is one of the most neglected areas of urban development in India. In fact there is a threat to the public health and environment quality in many urban areas. The components of household waste such as plastics, bottles, glass, metal, tin cans, paper, card board etc are recyclable and are the livelihood of some sectors of our population. While biodegradable waste is the best source of compost or organic fertilizer. In fact if these components are segregated at source for recycling in clean and neat condition the waste can be converted into wealth. The cost efficacy of this segregation and disposal of household waste is attempted in this paper.

KEY WORDS: Cost efficacy, Household waste, Management, Environment damage.

INTRODUCTION:

“Management of urban solid waste is one of the most neglected areas of urban development in India. Landfill sites and garbage dumps are overflowing in most cities attracting rodents and flies which then spread disease.” (Vidhyarthi, 2002).

According to Landais (2010) despite Regulatory Initiatives on MSW management by Government of India since 1960s till today, the net result is back to square one position as the waste was a problem and continues to be a problem. The waste can be seen overflowing the waste bins or bins being empty and the waste gracing either side of the main roads over long stretches of a city and the stray cattle, dogs, crows, pigs and many others sometimes including human feasting on it. Actually the household waste can be easily segregated at home at the point of generation. This assorted waste then can be send for recycling which is a common practice in most of the countries. The recycled material then can be reutilized, reducing the cost of raw materials. If the cost of each item of the waste is taken into consideration it can generate huge amount of money. At present we are wasting this money by not segregating the waste.

Waste needs to be treated holistically, recognizing its natural resource roots as well as health impacts. Waste can be wealth; with a tremendous potential not only for generating livelihoods for the urban poor but can also enrich the earth through composting and recycling rather than spreading pollution as has been the case.

DISCUSSION:

Global experience shows that when a country's urban population reaches almost 25% of the overall population (as in the case of India), the pace of urbanization accelerates (Kumar and Gaikwad, 2004).

The urban population of 285 million is concentrated in a few large cities and 32 metropolitan cities are accounting for 34.5 percent of the urban population that is expected to reach 341 million by 2010 (census of India, 2001). The waste quantities are estimated to increase from 46 million tons in 2001 to 65 million tones in 2010 (Kumar and Gaikwad, 2004). As per the information available on wikipedia, India at present produces 42.0 million tons of municipal solid waste annually. The generation of waste varies from 200 gm to 600 gm per capita / day (Joseph, 2002). Average generation rate at 0.4 kg per capita per day in 0.1 million plus towns.

NEERI has conducted extensive studies on quantum of waste generation in various cities. Studies have revealed that quantum of waste generation varies between 0.2 – 0.4 kg / capita / day in the urban centers and it goes up to 0.5 kg / capita / day in metropolitan cities.

As per the report of NEERI 1996, (Sunil Kumar, 2005), we are producing waste of complex composition to the tune of nearly 1, 00,000 tons in urban India with a total 4378 towns and cities including 35 cosmopolitan cities, 393 class-1 towns, 401 class-2 towns and remaining small towns with populations ranging between 20,000 to less than 5000 (as per the 2001 census).

On an average the city like Mumbai spends more than 20 lacks of rupees everyday for just getting rid of the garbage. Carrying or trucking garbage becomes a lucrative business. (Ranade 2010). The SWM activity is mostly labor intensive and 2 – 3 workers are provided per 1000 residents served. The municipal agencies spend 5 – 25% of their budget on SWM, which is Rs. 75 – 250 per capita per year (Kumar and Gaikwad, 2004). Normally a city of 1 million populations spends around Rs. 10 crores for this activity. In spite of this huge expenditure, services are not provided to the desired level

Given the fact that per capita waste generation per day in the city is well over 700 grams and there is a shortage of dumping space, management of this huge quantum of waste is a serious problem for the local body (Times of India, June 2, 2004). Moreover, the possibilities of ground water contamination and adverse health consequences have made open dumping an almost nonviable mode of disposal. Nearly 41 percent of the total waste is in fact biodegradable.

The Municipal solid waste consists of household waste, construction and demolition debris, sanitation residue and waste from streets. Depending on the food habits, characteristics of Municipal Solid Waste varies. It includes about 30 to 40% compostable / Bio-degradable matter (can be converted into manure), about 40 to 45% Inert material (to go to landfill) and about 5 to 10% recyclable materials (Recycling) (Wikipedia).

Characterization studies carried out by NEERI (1996) indicate that MSW contains large organic fraction (30 – 40%), ash and fine earth (30 – 40%), paper (3 – 6%) along with plastic glass and metal (each less than 1%), calorific value of refuse ranges between 800 – 1000 kcal / kg and C/ N ratio ranges between 20 and 30. This garbage is generated mainly from residential and commercial complexes. From this, garden waste and household

waste can be composted at home or in residential complex, which can be a good source of nutritional soil. . Unlike that of western countries, the solid waste of Asian cities is often comprised of 70–80% organic matter, dirt and dust (Tapan Narayana, 2008).

Whatever may be said in rules and regulations or in the court orders the conditions of roadsides are very bad. As per the articles in newspapers and what we see regularly is the roadsides have become unofficial dumping sites. The collection bin and implements used in various cities are not properly designed. It has been observed that community bins have not been installed at proper location. This has resulted in poor collection efficiency. The Municipal garbage bins are either overflowing with garbage or they are empty and the garbage is lying on the road, with all types of animals fisting on it, rag pickers collecting livelihood from it and we citizens holding our breath passing from its side. Many epidemics like Malaria, Dengue, Swine flue are erupting after a regular interval and many people are getting hospitalized or loosing their lives.

National Solid Waste Association of India (NSWAI) is the only leading professional non-profit organization in the field of Solid Waste Management including Toxic and Hazardous Waste and also Biomedical Waste in India. It was formed on 25th January 1996. MoEF, New Delhi, Government of India has identified NSWAI as one of the centers in capacity building projects of World Bank in Urban Municipal Solid Waste Management. The association is a member of the International Solid Waste Association (ISWA), Copenhagen, Denmark. A great study has been carried out in the field of solid waste management and subsequently Municipal Solid Waste Management and Handling Rules, 2000 were notified by MoEF, Govt. of India laying down a time schedule for implementing waste management projects by all Urban Local Bodies (ULBs) based on compliance criteria.

As per the rules many specifications and guidelines are given regarding collection of municipal solid wastes, segregation, storage, transportation, processing and disposal of municipal solid wastes. The guidelines also include specifications for landfill sites, site selection, facilities at the site, specifications for land filling, pollution prevention, water quality monitoring, ambient air quality monitoring, plantation at landfill site, closure of landfill site and post-care. Special provisions for hilly areas are also mentioned in the guidelines.

As per these guidelines there is also one format of annual report to be submitted by the Municipal Authority in which the quantity and composition of solid wastes, storage facilities, transportation needs to be considered. Similarly whether any proposal has been made to improve solid wastes management practices, are any efforts made to call for private firms etc. to attempt for processing of waste utilizing technologies like, composting, vermiculture, pelletisation has to be specified. The MSW Rules 2000 require that “biodegradable wastes shall be processed by composting, vermicomposting, anaerobic digestion or any other appropriate biological processing for the stabilization of wastes”.

These rules have considered many aspects of MSW management so that the municipalities can make the waste management an easy practice. These rules came into existence from January 2004. But yet we are not successful in managing the household waste generated and the scenario remains the same. In fact these rules have given certain tasks to be completed by 2001 till 2004. But our municipalities have miserably failed in implementations of the guidelines and the menace of the waste is increasing. This is mainly because Municipal Solid Waste Management and Handling Rules, 2000, notified by MoEF, do not address mechanisms, which will be needed for promoting recycling, or waste minimization. Waste management needs to be a cyclic process, but still it is a linear system of collection and disposal, creating health and environmental hazards (Gupta, 2001).

Secondly, there is no provision for any public participation.

Incineration is one of the options suggested but it is a very costly option and the smoke or gases produced cause the further health problems. Unofficially at certain places the dry waste is burnt causing the problems to the near by households. Similarly the recyclable material if burnt lot of raw material just gets wasted. The plastics when burnt produce harmful gases while biocompatible material when burnt the bio-energy gets wasted.

Thus at present the final disposal is done by crude dumping. We face lack of planning for waste management which includes dumping sites, insufficient staff and insufficient vehicles, lack of expertise, lack of acceptance and knowledge of modern techniques, but mainly lack of awareness among people. This creates an indifferent attitude towards the social problem.

Landfills are also becoming increasingly expensive because of the rising costs of construction and operation. Similarly the landfill sites within the city are not accepted for the sight seen, odour, menaces of flies, pigs, dogs, cats, crows, cattle etc. It is not advisable also to have the landfill site within the city for epidemics getting erupted. Due to this the landfill sites are approved at farther away places from the cities, increasing the transportation cost. Similarly the dumping is done near the river bank, creek bank, estuaries or in the barren agricultural lands. This is creating further problems of flowing of flood waters, rain water, tidal flows etc. Case of Mithi River getting flooded would not have been forgotten by many. Further to this these dumping grounds latter get useless for any purpose. Recently in Mumbai a decision has been taken to close Deonar landfill site scientifically as it has reached to its capacity. In 1947 cities and towns in India generated an estimated 6 million tons of solid wastes; in 1997 it was about 48 million tons. More than 25% of the municipal solid waste is not collected at all; 70% of the Indian cities lack adequate capacity to transport it and there are no sanitary landfills to dispose of the waste. The existing landfills are neither well equipped nor well managed and are not lined properly to protect against contamination of soil and groundwater (Wikipedia).

Thus though the framing of rules related to waste management has been done the management needs to be done with proper thinking, planning and going to grass root level involving common man. For this strategic planning is required. We also have to look into future needs.

The waste characteristics are expected to change due to urbanization, increased commercialization and increased standard of living. The present trend indicates that the paper and plastics content will increase while the organic waste content will decrease. In keeping with the present practices and estimates of waste generation, around 90% of the generated wastes are land filled requiring around 1200 hectare of land every year with an average depth of 3 m.

New consumption patterns and social linkages are emerging. India, will have more than 40 per cent, i.e. over 400 million people clustered in cities over the next thirty years (UN, 1995). Modern urban living increases the waste in quantity and changes in composition. India will probably see a rise in waste generation from less than 40,000 metric tons per year to over 125,000 metric tons by the year 2030 (Wikipedia).

Over the last few years, the consumer market has grown rapidly, leading to products being packed in cans, aluminum foils, plastics, and other such nonbiodegradable items that cause incalculable harm to the environment. In India, some municipal areas have banned the use of plastics. One positive note is that in many large cities, shops have begun packing items in reusable or biodegradable bags. But this will not suffice the purpose of dreaming for a clean and neat city. For this, urban planners, municipal agencies, environmental

regulators, labor groups, citizens' groups and non-governmental organizations need to develop a variety of solutions, depending on the need of the area.

As per the information available on Wikipedia collection efficiency ranges from 50% to 90% of the solid waste generated. Urban Local Bodies spend around Rs.500/- to Rs.1500/- per ton on solid waste management of which, 60-70% of the amount is on collection alone while 20% - 30% is on transportation. Hardly any fund is spent on treatment and disposal of waste.

The choice between conventional (or mixed waste) disposal and source separation depends on the relative resource costs of the two activities. Mixed waste disposal is associated with a lower resource cost (time cost, storage cost etc.) than separating waste at source. Since garbage is a public bad and the municipal authority incurs a cost in managing it, the social cost of the garbage disposed off is far higher than its private cost. The regulator may impose a tax on the generation of mixed garbage so as to obtain the social optimum. If the regulator designs appropriate policy instruments, households may be induced to transform part of their garbage into source-separated waste.

At present the best suggested option is segregation at the source and then process for vermicomposting, biodegradation or gasification. Segregate the waste at site and dispose it there than carrying it is the easier solution. Composting wet waste and by reusing dry waste it is possible to reduce the waste. This will automatically involve public participation and imparting on them the social responsibility. But the lack of public awareness has made the situation worse. Manual composting is carried out in smaller urban centers. But it is necessary to make every individual feel that it is his/ her responsibility to take care of his/her own surroundings. Certain biodegradable items can also be composted and reused. In fact proper handling of the biodegradable waste will considerably lessen the burden of solid waste that each city has to tackle.

In the waste management the principles to be followed are 3Rs i.e. waste minimization that is Reduce, Reutilization that is Reuse and Recycle. The household waste management includes, management of paper, glass bottles, plastic bottles, scrap metals, green waste, kitchen waste, textiles, scrap furniture, batteries etc. In this we can follow certain principles ourselves like purchase rechargeable batteries, buy detergents, oils, liquid soaps etc in refillable packs, avoid taking carry bags, carry a permanent shopping bag, use less and less disposable products. This will reduce the generation of waste. We can use the old empty cans, jars, bottles for refilling, if carry bag or plastic bag has come home along with certain product then it can be reused. Old cloths, tins, bottles etc. can be given to the needy for reuse. Most common consumer products which are recycled include aluminum cans, assorted or mixed plastic, plastic bottles, glass jars, glass bottles, broken crockery, news papers, magazines, corrugated boxes, plastic utensils, steel or aluminum utensils, old cloths, complex matters like computers, some machines etc. For recycling, the material is sorted out in common types so that the raw material can be reprocessed.

As a group, households are the single largest generators of municipal waste and account for more than 50 to 53 percent of the total waste in the city. But at present there remains no provision for collection for source-separated waste. Households also do not face economic incentives for practicing source - separation. Naturally, waste reduction effort in terms of source - separation is not undertaken for waste materials that have no exchange value in the informal recycling market. Of course, the social cost of dumping co-mingled waste is quite high. In the absence of incentives, households do not separate organic waste from regular waste; this, in turn, increases the processing cost of compost producing unit. The municipalities of Kanchrapada, Bhadreswar, and Kalyani

have started subsidizing source separation activity at the household level. These local bodies are providing storage containers to households at no charge to facilitate separation of wet waste and dry waste at source. (Sarkhel, 2006). Similar practice can be adopted by other municipal corporations.

Similarly there is no provision for collection of presorted waste therefore the disposed off waste mostly is a mixed waste consisting of kitchen waste along with household waste, inert materials like ash and coal etc. Some of the households separate items like plastic, paper, metal, glass etc. from their regular garbage because these can be reused or sold in market. The unaccepted items include un-recyclable multi layered or multi-material packaging such as tetra packs, medicine packaging, squeezable tubes, bottles and packets made out of plastic like polyethylene, PET etc. Following the ban on poly bags with thickness less than 20 microns, carry bags are no longer in demand by the informal sector for recycling.

In India alone, over a million people, popularly known as rag pickers or waste pickers, find livelihood opportunities in the area of waste, engaged in waste collection and recycling through well-organized systems. The informal sector dealing with waste is engaged in various types of work like waste picking, sorting, recycling and at the organized level, door-to-door collection. If this sector gets the assorted or segregated waste it will be helpful for them as it will save the labor, save the delay for the further process to start. This will also be good for the health, hygiene and environment.

When the waste is segregated at source two major components are to be taken care off, the dry waste and wet waste. The dry waste goes for recycling and the wet waste for composting. As mentioned above the dry waste mainly consist of plastic either hard like bottles, cans, boxes, caps of tubes etc., or soft like carry bags, milk bags, packaging material, little metal or tin, cardboards, papers like handbills, envelopes, letters etc. While the wet waste consist of kitchen waste, vegetable peelings, fruit peelings, tea leaves, bones, shells of eggs, prawns, crabs, nails, hair, flowers offered to god or used for decoration. Dry waste is manmade material and wet waste is naturally occurring. Naturally occurring can undergo biodegradation while manmade cannot. Therefore of this separated waste the dry waste goes for recycling either assorted or mixed and wet waste for composting. For developing countries, recycling of waste is the most economically viable option available both in terms of employment generation for the urban poor with no skills and investment. Indirectly this also preserves the natural resources going down the drains. There are serious issues of poor occupational safety provisions of the waste pickers as well as workers. These problems can be handled at the level of municipalities or NGOs can take up these responsibilities, and train them for the jobs.

From the dry waste plastic fetches the maximum price and glass has the lowest value. The first step in the plastic recycling process is sorting at a recycling centre. During sorting, plastic is divided by type. Some recycling facilities will only process certain types of products, which mean that products they can't handle may be sold to another facility which can handle them, or land filled, depending on company policy. After sorting, the plastic is ground into chips or flakes or pellets known as nurdles or plastic beads, which can be used as feedstock for other manufacturing processes.

Plastic recycling is not simple. Heavy metals, dyes can contaminate plastics, making them difficult and sometimes impossible to recycle (Wikipedia). If burnt the smoke causes many respiratory ailments to the residents from nearby areas. The amount of plastic getting recycled varies and is much less as compared to the paper or the corrugated sheets. From 2005 the recycling of plastic bottles also has started. The amount of PET bottles recycled in US in 2006 increased to the turn over of more than 102 million pounds compared to 2005.

HDPE bottle recycling increased in 2005 to 928 million pounds (Wikipedia). Such figures though are not available for India the recycling of plastic is increased in Indian market also.

In this the consumers are not aware of which plastic can get recycled. If public awareness programmes are carried out the recyclable items can be easily sorted out at the households itself. The recycled plastic can be used for packaging, home products used for non edible items, automobile parts, construction, stationary etc.

As reported by Landais, (2010), by 2013 all plastic bags produced in the UAE will have to be made with Reverte oxobiodegradable component, marketed as being able to make plastic bags biodegrade without leaving residue or fragments behind.

The second part of the solid waste is the degradable waste which can be composted. The Supreme Court appointed the Burman Committee (1999), recommended that composting should be carried out in each municipality. Composting is probably the easiest and most appropriate technology to deal with a majority of our waste, given its organic nature. Indian waste content does not provide enough fuel value (caloric value) for profitable energy production. It needs the addition of auxiliary fuel or energy (Wikipedia).

There are different categories of waste generated, each take their own time to degenerate like organic waste takes two to three weeks, paper takes 10 to 15days, cotton cloth 2-5 months. During composting some important aspects to consider are the problems related to Leachates , necessary precautions shall be taken to minimize nuisance of odour, flies, rodents, bird menace and fire hazard.

Over 11.6 million hectares of low-productivity, nutrient-depleted soil of India is ruined by unbalanced and excessive use of synthetic fertilizers and lack of organic manure or micronutrients. City compost can fill this need and solve both the problems of barren land and organic nutrient shortages, estimated at six million tons a year. India's 35 largest cities alone can provide 5.7 million tons a year of organic manure if their biodegradable waste is composted and returned to the soil. Integrated plant nutrient management, using city compost along with synthetic fertilizers, can generate enormous national savings as well as cleaning urban India. Agriculture sector should develop market for the compost manure and if required should provide subsidy to the organic manure. The urban waste can suffice the purpose.

Integrated plant nutrient management (IPNM) would also reduce the foreign exchange burden on the Indian exchequer because bulk supplies of phosphorus and potassium must be imported. In addition, the government of India spends Rs 43.19 million on phosphorus and potassium concessions alone. "Management through utilization" is the unique concept used by our farmers from time immemorial, where the weeds are cut and buried back for the soil to get organic manure. Composting is considered to be the best option to deal with the waste generated and to suffice this need of the farmers too. Composting helps reduce the waste transported to and disposed of in landfills. Landfills have also been widely unsuccessful in countries like India because the landfill sites have a very limited time frame of usage. There is scarcely any other national programme, which can bring such huge benefits to both urban and rural sectors.

Extended producer responsibility is a new strategy thought off, in which all cost associated with the products through out their lifecycle are included. But can't we take it as our own responsibility? We are the ultimate users of the product and the environment too. Hence it becomes the duty of every individual to keep the environment around him/her clean.

Waste management is felt to be most tiresome practice for many city dwellers. In their busy schedule they find it is difficult to dispose the household garbage in a hygienic way. But in reality it is not so, a little self

discipline can make this practice the most easy and most hygienic. Similarly when figures in millions and billions are quoted common man does not understand what further damage can be caused by his 500grams of waste a day. Hence we can think of some simple calculations.

For this some simple tactics can be followed as keep two separate bins for dry waste and wet waste. They can be colored if wanted as red and green. What we have to do is just put any waste like wrapper, empty can bottle in red bin while any vegetable matter in green bin.

With the personal experience and experience of the likeminded people who work in this field, certain calculations can be explained as follows (Table 1):

The newspapers are sold separately in most of the houses. Current cost of the newspapers resold is about Rs 8/- per kg. From one house hold if one newspaper is taken per day about 4 to 5 kg of newspapers can be collected a month. But in cities most of the time 2 to 3 newspapers are purchased in every house, (either Times along with Ecotimes / local language paper) that too in schemes we may get some free, hence the newspapers getting collected per month can be about 10 to 15 kg, giving the value of about 80 to 100 Rs. Along with the newspapers, paper in any form fetches value, like envelopes, letters, bills, handbills, card papers, greetings, invitation cards, wrappers, costing around Rs 4-per kg. If all such papers are collected in dry waste bin will come to around 2 to 3 kg per month equivalent to 10 to 12 Rs.

Plastic in the form of bottles of shampoo, soap, oil, water bottles, cold drink or fruit juice bottles, throw away pens all come in hard plastic giving a value of Rs 10 per kg, same is the case with milk bags. Some times in exchange of this plastic the venders give garlic. While the soft plastic in the form of wrappers, carry bags values to about Rs 4 per kg. Monthly waste generated in the form of plastic is about 1 to 2 kg. If not assorted, fetches about Rs 8 per kg, thus giving an amount of Rs 16 per month.

Out of about 400 to 700 grams waste generated per day 75% is wet waste. Hence per family about 500 grams waste can go for composting per day, out of which about 50 grams to 75 grams is obtained in the form of compost. Because the wet waste consist of about 80% of water which evaporates returning back the water in environment, without creating any foul smell if decomposed in proper manner. Thus per month compost generation is about one and half to two kg per family. Market rate of the Biocompost is about Rs 40 per kg. generating about 60 to 80 Rs/family/month . If we consider the pure water which has got evaporated per day - 500ml- costing around 6Rs, cost of water returned to environment comes to about 180Rs/family/month . Thus one family of about 4 members generate the income of minimum Rs 80(News papers) + Rs 10(Waste papers) + Rs 16(Plastic) + Rs 60(Biocompost) =Rs166.

Item	Quantity	Rate in Rs	Cost Rs.
News Papers	10 to 15 Kg	8.00	80.00 to 100.00
Other Papers	2 to 3 Kg	4.00	10.00 to 12.00
Mixed Plastic	1 to 2 Kg	8.00	8.00 to 16.00
Biocompost	1 to 1½ Kg	40.00	40.00 to 60.00

Table 1: Income generated / family / month

In cities like Mumbai, Thane in a tower of 14 to 15 storied about 100 families stay and there are two to three such towers in a society, thus the earnings go to about Rs50,000 per month. The present rag pickers or

waste pickers can be hired for such work by training them and they can become waste managers.

The amount saved is transportation cost per trip in the area with such societies about 1000Rs, labor cost of about 2 to 3 labors per 1000 individuals. Raw material made reavailable for renewable use, esthetic beauty of the area, clean and clear air, stopping the eruption of epidemics, savings the doctors bills, hospitalizations, no menaces of animals. Can we calculate it in money? Ajit Ranade in Mumbai mirror writes about the Mumbai Fragrance caused due to pungent smell of about six thousand tons of solid waste produced every day.

The cost of carry bag which we get with the vegetables we purchase is 10 paise small size, 15 paise medium and 25 paise big size. Generally one family brings home about 3 to 4 of such carry bags, every day costing to around 30 to 40 paise minimum. These carry bags are thrown in the dust bin which is emptied on the roadside. Again our simple calculation, 30 paise per day per family comes to around 9 RS per month per family, for 100 families RS 900 per month. For a society with three towers 1800 RS per month thrown on the road, washed in gutters, chocking the gutters, flying on the two wheeler drivers, causing accidents. Sometimes stop the railway totally. And to clean these gutters municipality spends lacks and lacks of rupees from our own taxes. Are the figures felt too exorbitant? These are the simple calculations a common man should understand.

Thus when we think about the cost efficacy of waste management we have to remember that it is our own money, health, hygiene, environment which has to be considered which is for sure priceless.

We can take very simple measures like

- Ø Say no to plastic and use and throw material whenever possible.
- Ø Reuse the material as much as we can.
- Ø Segregate the household waste at home.
- Ø Send the segregated dry waste for recycling.
- Ø Develop community composting facility in the society and send wet waste for composting.
- Ø Have clean and fresh air around us.

When the dry waste and wet waste are segregated either the family can generate the income themselves by treating it separately or at the level of society the trained labors can be hired who can be paid through income generated. This practice also will save the national wealth and in addition add esthetic beauty to country.

Waste management with recycling and composting	Waste management without recycling and composting
Reduction of waste	Generation of waste
Reuse of waste	No reuse of waste
Esthetic beauty of place enhanced	Esthetic beauty of place reduced
Epidemics of diseases, health hazards reduced	Eruption of Epidemics, health hazards quite frequent
No need to have huge landfills	Required huge landfills
Reduction of collection, transportation and labor cost	Expenditure on collection, transportation and labor cost
Rag pickers can be transformed to waste managers with sizable income and dignified status	Life of rag pickers is very bad

Waste is converted into wealth in the form of money, raw material, compost	Waste dirties the roads and gets wasted
Municipals funds spent on waste management reduce	Huge amount of Municipal funds are spent on waste management
Biocompost generated add to fertility of soil and reduce the dependency on synthetic fertilizers.	Use of synthetic fertilizer is maximum.
Waste is converted into wealth	Wealth is converted into waste

CONCLUSION: The conditions of almost all cities in India are same related to the waste management. But if the segregation and disposal of waste at the site it is generated is practiced it will improve upon many problems faced currently. The practice recommended is segregation; recycling and composting the waste.

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