

# Community Management

It is now becoming clear that centralised systems of waste management are not enough to control waste. Experience has shown that community-led initiatives help decentralise waste management, and make it sustainable at local levels.



Community waste management projects need the support and participation of various stakeholders – residents need to participate and contribute financially to sustain the effort. There has to be a sense of ownership among the residents, hence proper collection and segregation of waste needs to be supervised from someone within the community. NGOs may intervene in the initial stage to set up the system but they cannot sustain the effort from outside. Involving the local municipality is also very essential as it gives legitimacy to the effort.

There are several approaches to setting up a project depending upon the need. We have here some examples.

## City Farming

Individual efforts by a few committed individuals and organisations has led to the development of innovative methods of addressing Municipal Solid Waste (MSW) management problems locally. Through city farming, Dr Doshi of Pune has grown pulses, mango, fig, guava, sugarcane, coconut, etc, on the terrace of his house using organic waste.

Dr Doshi claims he has:

- improved the quality of his personal life,
- followed the concept of Zero Waste,
- recycled and helped to make sure that the earth's resources are not depleted.

## Community-Corporation Partnership

Community projects may reduce the dependency on municipalities but cannot replace them altogether. The municipality would provide land for composting, segregation and sorting. Its participation also gives legitimacy to projects.

# Stree Mukti Sangathana, Mumbai

The Stree Mukti Sanghatana, through their programme called Parisar Vikas in cooperation with the Brihanmumbai Municipal Corporation (BMC), trains women ragpickers in garbage handling, garbage collection, transportation to garbage pits, pit management, cleanliness and hygiene. The organisation also runs zero garbage schemes for societies and colonies.

## Networked Neighbourhood

In these modern days when neighbours often don't know each other, *waste* has brought together communities in some Indian cities. Here's how.

The Asian Centre for Organisation Research and Development (ACORD) was set up in 1981. Their first initiative was a pilot project in Harkesh Nagar, a low-income colony in Delhi. The project involved awareness-building through demonstration kits on waste collection, segregation of waste, and processing of waste in compost.

Based on the success of the pilot project, ACORD initiated collective composting in Bharatpur at a village level involving groups of 15-20 farmers per village. The farmers decided the amount of waste that would go in from each household. The compost made out of the waste was then equally distributed amongst the farmers. ACORD is now implementing a large-scale project titled 'Upgrading environment quality of Delhi' in the Central Zone of the Municipal Corporation of Delhi (MCD) and in circle III of the New Delhi Municipal Corporation (NDMC).

### Why Community Projects Fail

- **Initial enthusiasm dwindles over time:** Most successful projects are those driven by committed individuals.
- **Lack of participation by households:** Segregating waste is seen as an added burden and many resist this extra chore.
- **Resistance by municipal sweepers and *safai karamcharis*:** They often sell recyclables in the local market, and they feel threatened by such interventions.
- **Lack of space for composting:** In cluttered societies, there might not be enough space for compost bins.



## TARGETING THE 3 'R's

Converting garbage to goodness is an art that requires imagination and commitment. Waste management is a holistic approach towards making the most of your waste. Any waste management programme can be effective only if the three R's of waste management – Reduce, Reuse and Recycle – are followed.

### Reduce

Waste reduction eliminates waste and prevents it from entering the waste stream. The lesser the waste, the lesser the resources needed to segregate, collect and treat waste. The manufacturing industry can help reduce waste at source by reducing the amount of packaging of their products or by designing products that have a longer life span or are easier to repair.

Here is how you can reduce the amount of waste you generate:

- ❖ Buy products with the least amount of packaging.
- ❖ Whenever possible, buy household items such as shampoo and laundry soap in bulk.
- ❖ Use both sides of paper for writing notes before recycling it.
- ❖ Use jute or cloth bags for shopping.
- ❖ Repair appliances and furniture instead of discarding them.
- ❖ Edit on the computer before printing in bulk.

### Reuse

Reusing products requires creative application of our minds. It basically means using products that have outlived their lives for a purpose other than what they were intended for. Reusing products keeps them out of the waste stream

and at the same time conserves precious natural resources. We all use the large soft drink bottles for keeping water in our refrigerators. That is an excellent example of reusing products. Here is a list of things you can do:

- ❧ Before discarding a product, ask yourself, can I do something else with this?
- ❧ Reuse scrap paper and envelopes.
- ❧ Reuse cloth napkins, sponges and dusters by washing them.
- ❧ Wash and reuse empty glass and plastic jars as flower-pots or to store buttons or nails.
- ❧ **Do not reuse containers that held motor oils or pesticides as they can be harmful.**

## Recycle

This is a resource recovery method involving separating, collecting, processing, marketing and using a material that would have been normally thrown away. Recycling limits the amount of waste and helps to extend the value and utility of an item.

Here is how you can help recycle:

- ❧ Always segregate your waste into compostable and recyclable items. Kitchen and garden waste can be recycled into manure.
- ❧ Do not dispose of your plastic items, glass, paper, metal cans or old clothes in dustbins as they may end up in landfills. They can all be recycled and converted into useful products.
- ❧ Purchase items that can be recycled, such as rechargeable batteries.
- ❧ Promote the use of recycled products.
- ❧ Proper recycling also reduces pollution risks by keeping materials out of disposal facilities.

Ragpickers play a major role in recycling products. They sort through our waste, collecting and sorting plastics, metals, glass and paper and then selling them to *kabaadivalas*. It is estimated that they save the municipality over Rs 14 crore every year in waste management.

Every tonne of recycled steel saves more than 5,000 kg of iron ore and 2,000 kg of coal.



# Composting And Vermicomposting

Composting is a natural form of recycling, which continually occurs in nature. Studies have shown that composting yard and food wastes would reduce the amount of Municipal Solid Waste (MSW) requiring disposal by almost one-fourth, while providing a nutrient-rich soil amendment.

Composting requires three key factors: aeration by turning the compost pile, moisture and a proper carbon-to-nitrogen (C:N) ratio.

## Factors Affecting The Composting Process

The speed at which garbage decomposes depends on:

**Carbon-to-Nitrogen Ratio:** The organic matter should primarily be carbon with just enough nitrogen to aid the decomposition process. A carbon-to-nitrogen ratio of 30:1 by weight is considered ideal.

**Surface Area:** Compost decomposition takes place when the particle surfaces are in contact with air. You can increase the surface area by chopping, shredding or breaking up the material.

**Aeration:** Aeration is the supply of oxygen to the centre of the compost pile where it is lacking. Composting systems or structures should incorporate adequate ventilation.

**Moisture:** Microorganisms can only use organic molecules dissolved in water, so the compost pile should have a moisture content of 40-60 percent.

**Temperature:** Microorganisms generate heat as they decompose organic material. A compost pile with temperatures between 32-60 °C (89.6-140 °F) is composting efficiently.

Vermicomposting or worm composting employs redworms (*Eisenia foetida*) which are happiest at temperatures from 50-70 °F (10-21 °C) and can be kept indoors – at home, school, or the office.

The redworms are placed in a box or bin which can be built or purchased, along with 'bed-

The art of composting has always been known to man. Marcus Cato, a farmer and scientist who lived in Rome 2,000 years ago viewed compost as the fundamental soil enhancer, essential for maintaining fertile and productive agricultural land.

ding' of shredded cardboard or paper moistened to about 75 per cent water content. The container should be wide enough so that food scraps can be buried in a different location each time. The worms gradually reproduce or die according to the amount of food they receive. A sudden addition of a large amount of food waste may attract fruit flies, so increments should be made gradually. In a healthy box, worms can build large populations and consume 2-3 kg of food scraps per week. About four to six months after the box has been started, the worms will have converted all of the bedding and most of the food waste into 'castings' which will need to be harvested so the process can begin again.



## Build Your Own Vermicompost

- ❶ Select a composting site, preferably under shade, at an elevated level to prevent water stagnation.
- ❷ Place a basal layer of vermibed consisting of broken bricks or pebbles (3-4 cm in height).
- ❸ Add a 6-7 cm layer of coarse sand to allow proper drainage.
- ❹ To this add 15 cm of loamy soil into which you will have to inject 100 locally collected earthworms.
- ❺ Scatter small lumps of cattle dung over the soil and cover it with a 10 cm thick layer of hay. Spray water till the entire setup is wet.
- ❻ Cover the unit with broad leaves of coconut or banana. You can also use old jute bags. Monitor the unit for 30 days.
- ❼ The appearance of juvenile earthworms is a healthy sign. Now add the organic refuse. The refuse should not exceed 5 cm thickness at a time. Keep adding refuse, watering the unit and turning it over.
- ❽ At the end of 45 days, the compost will be ready for harvest.