Secured Landfills
Safe Disposal of Waste

Clean streets, localities, markets... this is what most people in cities, including Orissa, look for from an efficient solid waste management system. Once the garbage is collected from the house, however, not much thought is given to where the waste has gone. Spilled waste on street corners and roads is a common sight in cities. This open dumping of waste causes foul smell, breeds diseases such as diarrhea, dysentery, skin and eye irritations, and spoils the public image of a city. Open dumping thus needs to be controlled through proper treatment and disposal of waste.

What are the Impacts of Open Dumping?

- **Water pollution**—Toxic liquid (leachate) that flows from the dumped waste seeps into surface and groundwater and contaminates potable water.
- **Soil pollution**—Toxins seep into the soil and surrounding vegetation, and move into the food chain through fruits and vegetables grown in the area.
- **Dump fires**—When waste decomposes, inflammable methane is released which can result in explosions. The smoke released is also highly toxic for inhalation and contributes to global warming.
- **Source of disease**—Dumpsites breed flies, rodents, and pests, which spread diseases.
- **Other impacts**—Foul smell; visual ugliness; and bird menace which can be a hazard to airplanes.

The primary goal of any solid waste management system is to safeguard the health of the citizens and protect the environment. This is achieved by ensuring proper collection, transportation, treatment and, finally, safe disposal of waste. However, the last step is missing in most solid waste management systems implemented in the country, including cities in Orissa.

How Can Waste be Disposed Safely?

Waste can be safely disposed through a secured landfill, which is an engineered facility designed with protective measures to save the environment. A secured landfill has the following components:

- Liner at the base and sides to prevent spread of toxic liquid (leachate) or landfill gas into the environment.
- Leachate collection and treatment facility to restrict contamination of soil and water.
- Landfill gas collection facility to avoid explosions. This gas can also be used for energy generation.
- Fenced buffer zone and green belt around the facility to reduce odor and serve as a visual barrier.
- A final cover system at the top at closure of landfill to prevent infiltration of water.
- Safety provisions and basic amenities such as roads, lighting, water supply, protective gear, toilets, and so on.

Can’t We Treat or Recycle All Waste, and Do Without a Secured Landfill?

When the waste is collected from households, a lot of recyclable materials such as newspapers, plastics, metals, and so on, is collected by rag-pickers.
The rest of the waste can be treated to make reusable items, for instance, compost, fuel pellets, and so forth. However, even after recycling and treatment, there are considerable amounts of residues that need to be disposed. Secured landfill sites are needed to dispose of these residues, which are often toxic in nature and can harm public health and the environment.

In addition, landfills also serve as a necessary backup in case of a malfunction in the treatment facility or unusual peaks in the waste stream because of festivals, public events, heavy rains, natural disasters, and so on.

Isn’t a Secured Landfill a Wasteful Use of Land?
Since secured landfills are planned for long-term use, say 20 years or more, its construction requires large tracts of land and investments. Making land available for such a landfill, however, does not imply that it cannot be used for any other purpose thereafter. If the efficiency of recycling and treatment improves over time, it is possible to reduce the land provided, or reallocate it for additional treatment capacity. In addition, since secured landfills take necessary safeguards from the beginning, after closure, the landfill area can be restored for other uses, for example, parks, golf courses, and even human habitation.

What are the Barriers in Developing Secured Landfills?
In India it is difficult for small towns to develop their own separate facilities. They do not have financial, technical, and human resources, nor do they have enough land sites. Most countries across the world have addressed this challenge of land by developing regional landfills.

What is a Regional Landfill?
A 'regional landfill' refers to a common landfill for a cluster of municipal bodies. It could cater to as many as 15-20 municipalities and offer several advantages:
- Significant lowering of construction and operating costs per ton of waste (by as much as 60–80%)
- Significant lowering in land requirement per ton of waste.
- Ability to hire modern equipment and trained professionals for better quality of operations.
- Development of a proper green belt around the facility to restrict odor and act as a visual barrier.

The Bottomline
Orissa is growing rapidly and so is the waste generation, especially in fast-growing cities of Bhubaneswar and Cuttack. In such a situation, immediate steps need to be taken to introduce well-designed and efficiently managed solid waste management systems in a cost-effective manner. Cities in Orissa, especially Bhubaneswar and Cuttack, need to take the following steps:
- Increase the area covered for door-to-door collection of waste to ensure that uncollected waste is not dumped in the open.
- Introduce efficient transportation of waste in covered trucks to avoid spilling and bad odor.
- Encourage reduction of waste to be land-filled by promoting recycling and treatment.
- Building regional landfill facilities in cooperation with other municipalities for safe disposal of waste.