

Solid Waste Management in Darjeeling Municipality

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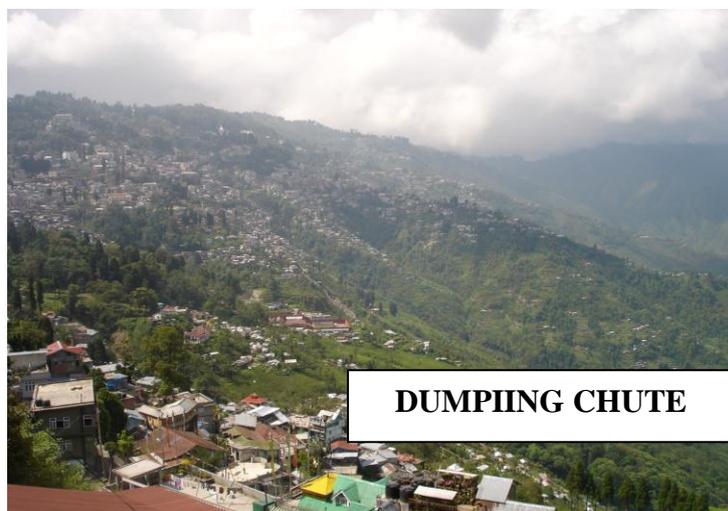
Background - Solid Waste Management in Darjeeling

Darjeeling Hills is part of the Eastern Himalayas, a designated bio-diversity hotspot with immense diversity and endemism. Darjeeling the northern most district of West Bengal, India and is the only hill district in the state.

Darjeeling town has a history, which starts in the later part of the 1800 when the colonial British developed her as a summer capital. She was not only developed as a summer capital but also as a centre of British interests in tea. It is said that when the British first landed in Darjeeling there was just 16 houses in the Darjeeling Spur.

The core 5 km radius of the Darjeeling Municipality with all its amenities of water, sanitation, housing and offices was planned and developed in the 1930s for approximately 20000 to 30000 people. Today, the town has grown beyond the core 5 km radius to an area of 7.83 sq km and extends from Jorebunglow to Ging Bazar divided into 32 wards and has a population of 1 03 379(1991 census). The physical area of the town of 7.83 sq km is an administrative boundary, in reality the socio-ecological boundary extends much beyond the defined area. The growth has been unplanned and the amenities developed in the 1930s are still used to cover the 1 03 379 population of the town today.

Darjeeling Municipality today is divided into 32 wards. 30 metric tones of waste is generated in the Darjeeling Municipality daily. This average goes up to 45 metric tones a day in the peak tourist season. The present day practices of solid waste management can be logically portrayed as below:



**CENTRAL DARJEELING TOWN
(MARKET PLACE with DUMPIING CHUTE)**

1. No Storage of solid waste at source.

Individual families, commercial establishments and institutions throw their solid waste in bins, streets, drains, *jhoras*(waterways, natural or reinforced), open spaces and near by water-bodies. This has resulted in dirty streets and clogged drains.



Overflowing street vats

Jhoras

Overflowing street vats

2. Partial Segregation and Collection of Recyclable Waste.

Households keep aside newspapers, bottles and metal objects for sale to *kabidiwalla* (rag-pickers). *Kabidiwalla* also pick recyclable material from waste thrown in the bins, street and *jhoras*.

3. Inefficient system of primary waste collection.

Waste is collected through street sweeping in certain parts of central Darjeeling, which is inefficient and irregular. The waste collected through street sweeping contains all types of waste and the tools used are inefficient. The secondary storage of waste collected in open spaces, masonry bins and iron bins is unhygienic and inefficient.

4. Inefficient and irregular transportation of waste.

Waste is transported in and trucks (1.5 to 2 tonnes capacity) and jeeps. Multiple handling becomes necessary and contaminated waste is also handled manually. The transport system can handle only 20 to 25 metric tones of solid waste, thus creating a backlog.



Secondary waste collection

5. Unscientific Disposal of Waste.

The waste is manually dumped in the disposal site, above the Hindu Burial Ground and there is no scientific treatment of the waste dumped. Hospital, construction, toxic and industrial waste are also dumped in the same dumping site. There are people living within the vicinity of the chute and downstream.



“DUMPING CHUTE and disposal of waste down the hill”

Besides the official ‘Dumping Chute’ communities dump their solid waste in their nearest waterways and streets.



Solid waste being dumped on the streets and water ways

The problem of solid waste in Darjeeling Town:

The solid waste management practice adopted today is unhygienic and unscientific causing tremendous problems of health and environment not only to Darjeeling Municipality but also people living down stream.

With the dramatic increase in population and changing consumption patterns, Darjeeling is facing immense problems of waste management. The existing systems of waste management is technically unscientific and infrastructural insufficient to manage the waste. This has resulted in the piling up of waste all over town in vats, street corners and in the *jhoras* or water ways. All the waste without treatment is dumped into the “dumping chute” and other water ways. The waste dumped

eventually flows into the rivers all ending as tributaries of River Teesta, while flowing through a number of communities.



POLLUTED WATERWAYS OF DARJEELING

Rotting waste lying about in streets and *jhoras* has created an unhealthy environment in Darjeeling. With the increasing fast moving consumer durables non-biodegradable packing material, one sees increasing packing material along with the rotting bio-degradable waste. The flies and street dog populations are shooting up. One has even started seeing mosquitoes in the Darjeeling town which was not seen even 10 years ago. The practice of dumping waste into waterways and streams might have been acceptable before the advent of mass non-biodegradable material, but today, plastic packing material, bottles are choking water ways which has contributed to landslides in Darjeeling.



NON-BIODEGRADABLE WASTE

The solid waste is not segregated and burning as a management option is adopted by many people. In the dumping chute too, the waste constantly burns. This results in the release of toxic and carcinogenic gases. The dumping chute is below the main market place which has a very concentrated living population. One can see the toxic fumes from the chute traveling upwards into the residential areas and then to the market place.

Thus the lack of proper waste management is proving a health hazard in Darjeeling.

The lack of segregation and combined dumping of waste in water ways and especially the dumping chute is polluting the water ways and resulting is serious health hazards to people living downstream. The pollution of the waterways is disturbing the ecology of the waterways by changing the composition of the water. Some of the chemicals promote the growth of certain life forms only, leading to change in the entire ecology. While, other chemicals are toxic to all life forms thus killing aquatic life. Ultimately, in both the cases, aquatic life gets killed.

Thus the lack of proper waste management is proving a health hazard to people living downstream even beyond Darjeeling as well as destroying all aquatic life forms.

The infrastructure was not planned for the population today thus insufficient to handle the waste. The challenge with the changing consumption patterns and types of waste generated has not been taken into account and the existing waste management system has not adapted to this change. Dumping and Burning like in the yesteryears is highly unacceptable today.

Thus the challenge of waste management is both of a societal behavioral change and an infrastructural one.

What does Darjeeling need to do to manage her solid waste?

Darjeeling should no longer roll her waste down the hill as she has being doing all these years. This is because of the increase in the waste that is generated and also the change in the type of waste.

The unscientific as well and insufficient waste management system is leading to health hazards to the people of Darjeeling as well as people living downstream. The untreated waste is a threat to the fragile ecology of Darjeeling and it's downstream.

Thus it is imperative that the waste management system of Darjeeling is improved with utmost urgency.

Till date, the onus of waste management has been placed on the Darjeeling Municipality only, which has been described earlier as one with insufficient infrastructural capacity. The capacity is also limited by just dumping of the waste without treatment.

To really undertake proper solid waste management, people's participation and ownership of the process is very important. There is a need for the change in mindset of the community where they take ownership of the process and also adopt behavioral changes of segregation, treatment – like composting; reducing, reusing and recycling. There is need for the issue of waste management to be accepted as a community issue.

This is important as in the web of life one cannot live in isolation and all things are connected and today's waste management system of Darjeeling is unsustainable.

Pilot areas and institutions needs to be chosen and focused interventions undertaken so as to develop concrete, adoptable positive cases for the rest of Darjeeling. This process of enabling effective pilot initiatives is important from the perspective of behavioral change for the whole town as till now local examples are not experienced.

A cross-cutting theme of primary storage of waste at source, segregation, promotion of composting and recycling and community awareness and mobilisation and livelihoods must be adopted as an intervention methodology. Segregation is important for treatment since more than 70% of the waste in Darjeeling is bio-degradable. Composting is thus a solution for treating bio-degradable waste as well as income generation which will address issues of livelihoods. Since waste management in Darjeeling needs behavioral change, awareness and capacity building are important components of the intervention.

Thus it is time that the capital of the District, Darjeeling, the Queen of the Hills shows the way and takes responsibility of her waste.

Bibliography:

1. Area and Issue Profile of Darjeeling – DLR Prerna 2003
2. Eco-watch Group, Darjeeling, Project Completion Report – 2003-2004
3. Darjeeling Municipality, 2007: *Proposed Solid Waste Management System*. Prepared by Municipal Engineering Directorate, Government of West Bengal. 2007
4. DLR Prerna Reports

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