

CLEAN & GREEN MADUKKARAI: A SOLID WASTE MANAGEMENT INITIATIVE

• Background

Solid Waste Management will be one of the top most challenges from metros to small town. This Public Private Partnership has come together to solve one of the toughest and continuous problem of the community. This partnership model is unique and first of its kind implemented through Corporate Social Initiatives.

The ACC Madukkarai Cement Works, Hand in Hand NGO along with Madukkarai Spl.Grade Panchyat has evolved and launched the *"Clean & Green Madukkarai"*. This program is implemented by Thidakazhivu Melanmai Thittam – SHG Groups consisting of 55 women. The program aims in creating and strengthening the mechanism for effective disposal of solid and domestic waste of the community. The prime and at most success of this program lies in active community participation.

The program aimed at bringing a behavioural change in the community for proper disposal of waste and to strengthen the existing Panchayat waste management program. The program helps the community to see the larger picture of Solid Waste Management and their due role and participation for making this initiative a successful model.

The success of this program is entirely owed to community participation; there has been a drastic change in the behaviour of people. The continuous education and awareness has resulted in 100% participation of the community in effective waste disposal.

After implementation of this initiative, Madukkarai Panchayat has turned out to be cleaner community. The community felt the difference; the streets are cleaner and bought loads of discipline in disposing of the waste.

• Location, Date

Madukkarai (Coimbatore), Tamil Nadu; year 2012

• Areas

Rural

• Stage/Scale

The project is currently under implementation. The project benefitted 45,000 population directly and 5000 population indirectly.

• Objective of the assignment

To bring about a behavioral change in the community for proper disposal of waste and to strengthen the existing Panchayat waste management program. The targets were:

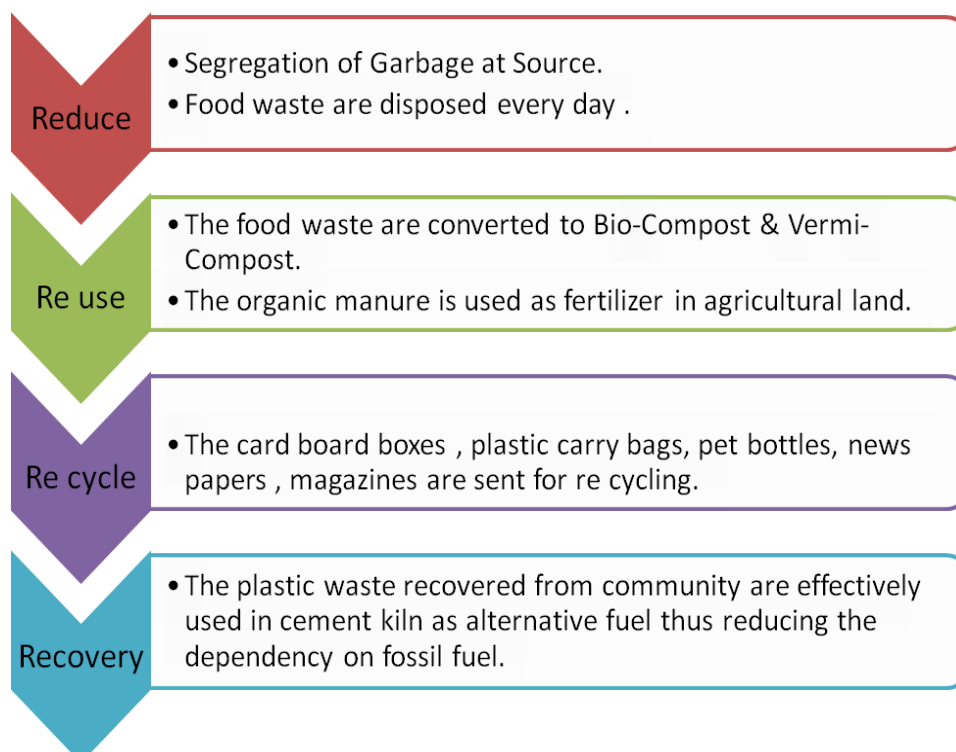
- 100% Door to Door Collection
- 100% Source Segregation of Waste
- 80% Reduction of Landfill Waste
- 75% Reduction of Usage of Plastic Waste

• What was done

Every day the Green Friends are responsible of visiting every household and collect the daily household garbage. The garbage is separated at the source point itself, where the wet and dry garbage are segregated and collected in their respective bins. More than 55 Green Friends are divided among 18 wards of Madukkarai. The collected garbage is transferred to the community dust bins which are strategically placed in every ward. The community dust bins are shifted to dump yard where the wet garbage is being converted into organic manure by vermin compost pits. The plastic and recyclable wastes are segregated and send to ACC Cement Works which they are used under waste co-processing. The plastic wastes which are used as fuel, is burned in the kiln at very high degree. This has been very effective ways to effectively dispose the plastic waste derived from the community, which doesn't pollute the environment and reduces green gas emission of community.



Effective implementation of 4 R's:



Measures taken for Community Empowerment:

- Door to Door Awareness on Solid Waste Management
- Dustbins where provided to all houses in community
- Mass Rally & Human chains are formed to increase awareness of the program.

- Innovative “Silver for Tidy” community incentive program
- Street Plays & Nukkad on Solid Waste Management
- The educational institutions in the community repeatedly provided awareness on the disposal of waste

• Impact

The impact has been that:

- Panchayat has imposed strict laws in usage of plastic
- All the houses hand over the waste to green friends daily
- 75% of Waste effectively recycled
- 75% of the waste is being reduced reaching landfills.
- 120 Tonnes of Waste effectively handled per month
- 100% Door to Door Collection of Waste
- 100% Source Segregation of Household waste
- 45 Tonnes of Organic Compost produced per month
- 25 Tonnes of Waste are recycled
- 55 SHG women earn an average salary of Rs.4500/- per month

• Challenges and Issues

The project, despite enthusiasm, faced uphill challenges from the community and Panchayat administration:

Community-level issues:

- Strong mindset of the people. The people mindset focussed only on keeping their houses clean only.
- The community always believed that it's the duty of Panchayat to maintain a clean community.
- The entire concept of waste management was known to them.
- The people were rigid and resistance to change.
- The entire garbage was simply disposed outside of the house.
- The garbage choked the drain lines most often.
- The streets were always filled with garbage.
- The awareness level on waste segregation was very much limited to them.

Panchayat Administration-level issues:

- The Panchayat council lacked knowledge about Solid Waste Management.
- Lack of man power & funds in the administration.
- The Panchayat was un willing to explore the options.
- The administration focussed only on collection of garbage & disposing in land fill.
- They were extremely hesitant and rigid in participating in this initiative.
- They extremely feared on the failure part of the project.

• Innovation

- **Use of Plastic Waste in Cement Kiln as fuel:**

ACC Madukkarai Cement Works is one of the cement plant pioneer in implementing the alternative fuel resource initiative. The plant in order to reduce the usage of fossil fuel has

been keen in search and usage of alternative resources. One of the most effective methods of recycling of plastics waste for recovery of energy is the use of plastics waste as an alternative to fossil fuel in Cement Kilns. Plastics Waste can replace approximately up to 15% of normal fossil fuel in Cement Kilns. As Cement Kilns are operated at a very high temperature in the range of 1500°C or more, there is no risk of generation of any toxic emission due to the burning of plastics waste. In fact, Cement Kilns can be utilized for burning of some hazardous waste also. A 1-million-ton capacity cement plant can consume about 10000 MTs to 30,000 MTs of plastics waste annually, creating an enormous opportunity for the proper management of plastics waste, while recovering precious energy out of it for production of cement – one of the basic materials of infrastructure development.

- Usage of Plastic waste in making of roads was also effectively implemented in Madukkarai Panchayat.



• **Lessons learnt**

- Effective solid waste management can be a sustainable and profitable business, if handled properly.
- It is important for all stakeholders to come together for making such initiative successful
- One-time awareness programme is not sufficient. It should be a sustained effort.

• **Financials**

The budget for year 2014-15 was INR 49 lacs, while for year 2015-16, it was INR 52 lacs.

• **Economic sustainability/Revenue Model**

The project cost is being shared by the Panchayat and Corporate on 70:30 ratio. The user payment for waste will be implemented from 1st April 2017.

Projected Monthly Revenue Table: 2017

S. No	Source of Revenue	Number	Amount (in INR)	Total (in INR)
1.	User payment fee (payment collected from each house)	5500	30	1,65,000
2.	Sale of Organic Manure	15000 kgs	5	75,000
3.	Sale of Plastic waste	7000 kgs	2	14,000
			Total	2,54,000

- **Implementer Contact Persons**

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- **Sources and References**

Study Submitted by ACC Limited