

# Converting Waste into Value

## HIGHLIGHTS

- Waste-to-value enterprises help divert tons of waste material that has recoverable value from landfills, thereby creating huge environmental impact.
- Such enterprises collect and treat waste that otherwise results in severe health impacts in communities, especially the poorer sections of society.
- Most enterprises ensure a dignified work-place and higher than minimum wages to the waste workers.



## Development Challenge

Globally, millions of tons of waste are generated annually. It is estimated that on an average, a developing country generates nearly 100,000 metric tons of solid waste per day, of which around 40 percent is recyclable. Ironically, much of this waste has value and can be recycled and reused if segregated and collected in sufficient quantities. Most households are unaware about the need to segregate waste at source and habitually dump all waste together, resulting in generations of mixed waste, where the dry waste gets contaminated and cannot be recycled. Most countries find it easier to dump mixed waste since sorting costs are very high and they face resource and capacity constraints. Hence, while there is value in waste, the cost of extracting it is very high, primarily because of waste disposal practices at source. The waste collection and management sector in most developing countries is primarily unorganized.

## Business Model

Waste-to-value enterprises minimize the amount of waste lying on streets and in open dumps. They collectivize waste workers, and offer them formal employment and better working conditions. They aim to build a sustainable business around recycling and reuse of waste that are either difficult to treat or harmful if left untreated. These enterprises create useful and innovative recycled products from waste including artistic items, such as woven baskets and photo frames, utility items, such as bags, pen stands, and file holders, and affordable construction material. As a result, they address larger challenges of environmental degradation, waste workers' dignity, and general awareness about waste disposal and treatment. Waste-to-value enterprises are broadly classified into two categories:

**Dry waste recycling:** Some waste-to-value enterprises recycle dry waste such as paper, fabric, glass, rubber, plastic, and e-waste. They procure these items mostly from waste collection enterprises or informal waste collectors. Some enterprises employ workers on contract to collect waste from households, schools, and commercial establishments. The waste is then recycled into fashion goods, construction materials, and pieces of art.

**Wet waste composting:** Wet waste needs to be treated quickly as it tends to break down rapidly; composting is the most common solution to treat wet waste sustainably. Social enterprises provide residential and community composting facilities, as well as a wide range of products to enable composting at source. Some of them also provide training on effective composting methods. For instance, India-based Daily Dump designs and distributes terracotta composting pots and creates awareness among communities on segregation at-source and trains them in on-site composting.

### Features of Waste-to-Value Business Model

Recycling dry waste to create value	Composting wet waste to create value
<div data-bbox="706 1696 771 1768" data-label="Image"> </div> <ul style="list-style-type: none"> <li>• Enterprises recycle waste thereby diverting it from reaching landfills and oceans</li> <li>• Most enterprises include informal waste workers in their recycling operations</li> <li>• Enterprises provide waste workers better livelihood options and safe working conditions</li> </ul>	<div data-bbox="1247 1696 1318 1768" data-label="Image"> </div> <ul style="list-style-type: none"> <li>• Enterprises manufacture composting facilities using design thinking approaches</li> <li>• Some enterprises focus on rural farmers and provide them access to decentralized composting facilities</li> <li>• A few enterprises educate governments on composting and partner with them to set up and operate composting plants</li> </ul>

## Implementation: Delivering Value to the Poor

### Awareness

Waste-to-value enterprises need to invest in building awareness in both the pre-production (treat at source, collect waste in bins, segregate waste) and post-production phases (marketing to sell recycled products, brand positioning). Besides this, waste-to-value enterprises raise awareness regarding the significance of effective waste management, which creates the larger environmental and social impacts. On the occasion of International Coastal Clean-Up Day, Ocean Sole launched a competition to gather ideas to reduce and recycle plastic waste.

### Acceptance

Most enterprises incorporate awareness generation as one of its primary activities, and engage with partners and communities to improve general waste management awareness, before advertising about their product or service. A number of waste-to-value enterprises customize waste management solutions to suit specific requirements of various customer categories, including corporate houses and residential complexes. For instance, Daily Dump provides customized composting mechanisms for different users. Enterprises try to ensure that the prices of the solutions on offer are affordable, at least to the low income communities.

### Accessibility

Many of the companies engage with local distributors and waste workers to ensure accessibility for their products and services. For instance, Daily Dump hires waste workers from local communities to install the enterprise products and provide its services. Likewise, Ocean Sole and RECNOWA engage local community citizens in its distribution process. Some enterprises also have online portals to increase access to waste-to-value products and services.

### Affordability

Generally, most gift, home décor and utility products made by recycling waste are sold at premium prices (compared to available alternatives) to customers that can afford them. Enterprises also tie up with financial institutions to make the products affordable to customers. ReMaterials, which offers ModRoof as an affordable roofing solution, charges monthly installments from its customers. The enterprise also leverages its partnership with organizations to facilitate consumer finance, and make the solution further affordable to the customers.

Waste-to-value enterprises spend 30-45 percent of their costs in salaries of employees engaged in collection and recycling of waste. Another major cost is investment in training the employees on recycling skills, and handling and transportation of waste from the collection point to the recycling center. Recycling activities constitute a small percentage of the total cost since they are mostly carried out manually or involve minimum use of machinery. Enterprises also incur costs in renting or leasing warehouses and recycling centers. Of the total expenditure incurred in solid waste management, typically 70 to 80 percent is directed toward the collection and transporting of wastes.

Waste-to-value enterprises generate revenues from the sale of recovered and recyclable materials, including compost fertilizer. The market for compost is more local, but is usually underdeveloped and depends on local potential and market requirements. Revenues from the sale of compost are usually insufficient to cover the costs of collection and processing.

Waste-to-value enterprises sell recycled materials at competitive prices. Most of the products and services are affordable to the customer and financially viable for the enterprises. In some cases, the products are sold at premium prices because of their artistic value. For instance, Ocean Sole sells handmade products created from recycled flip-flops. US-based ReMaterials that is operational in India charges its customers for the sale and installation of ModRoof.

## Results and Effectiveness

Waste-to-value enterprises engage with low-income communities in two ways: as employers, providing improved aspects of income generation and better dignity at workplace, and as sellers of affordable solutions, mostly housing material.

Waste-to-value enterprises have several direct and indirect environmental and social impacts. They redirect waste before it reaches landfills, thereby reducing carbon emissions significantly. Recycling is one of the cheapest and fastest ways to reduce greenhouse gas emissions; it reduces emissions 25 times more than that achieved through incineration. Waste-to-value enterprises also help reduce the use of virgin materials needed for production, thereby conserving natural resources and energy while reducing air and water pollution.

Given the labor-intensive nature of the business model, waste-to-value enterprises improve livelihoods by providing training to women and youth from low-income communities, helping them gain skills for life and improving their household incomes. They also provide dignified workplace to waste workers. Trash2Cash has helped women workers create an identity and financial independence for themselves. It has helped the women workers to own and operate their bank accounts. Thread International has provided direct jobs to over 300 people and indirect income generating opportunities to nearly 3,575 people in Haiti.