



# Entrepreneurs in Solid Waste Management with Innovative Methods

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**Abstract:** Entrepreneurship refers to the activity of establishing a business and taking financial risks aiming at earning profits. It includes the planning, initiating, and managing of a new company. Generally these businesses are small in size and initialization. The main objective is the need for improving solid waste management in India, entrepreneurship models in solid waste management and entrepreneurship in organic components of solid waste management. The study concluded that solid waste management is one of the most essential services required for ensuring a safer environment, better quality of life and better standards of health, hygiene and sanitation. Entrepreneurship in this area is required to adopt new, innovative and efficient systems to effectively manage solid waste.

**Keywords:** Entrepreneurship, solid waste management, environment, health, hygiene, innovative.

## I. INTRODUCTION

Entrepreneurship refers to the activity of establishing a business and taking financial risks aiming at earning profits. It includes the planning, initiating, and managing of a new company. Generally these businesses are small in size and initialization. According to Robert. D. Hisrich (1986) Entrepreneurship is the process of creating something different with value by devoting the necessary time and effort, assuming the accompanying financial, psychological and social risks, and receiving the resulting rewards offinancial and personal fulfillment.

A solid material that is discarded or thrown away due to no use is called solid waste. Urban civilization produces and discards solid material regularly which leads to a considerable rise in the capacity of waste produced from numerous bases. Solid Waste Management (SWM) is an area that has a very high potential for entrepreneurship development. SnehaPalnitkar (2002) defined it as "Solid waste is the term used to describe non-liquid waste material arising from domestic, trade, commercial, agricultural, industrial activities and from public services". Waste management includes methods and measures to control waste from its production to its ultimate disposal. It involves the collection, transport, treatment and disposal of waste in addition to monitoring and controlling the waste management process.

## II. OBJECTIVES OF THE STUDY

1. To examine the need for better solid waste management in India.
2. To analyze the solid waste management entrepreneurship models.
3. To study the entrepreneurship in organic components of solid waste management.

### III. REVIEW OF LITERATURE

1. Gridphilly (2019) in her article, "Turning a profit : women entrepreneurs in waste management", explains that MichaleBloovan is one of several female entrepreneurs in Philadelphia who has left the business sector to take matters into their own hands and use buckets to change the way garbage is handled. She is one of the founders of the organic waste circle compost. In 2016, she established Circle Compost, which now serves over 700 female clients in Philadelphia. Circle Compost was Philadelphia's first composting business. She conducts composting teaching programs at schools all across the city.
2. RanjithAnnepu (2015) in his article, "Opportunities for Entrepreneurs in waste management", exhibits that Sophie van den Bergis a Solid Waste Expert and Recycling Business Developer at WASTE. She has over 30 years of global experience in resource recovery system market research, solid waste management system evaluation, and resource recovery system economic and environmental viability analysis. She specializes in the growth of the private sector, including the planning, execution, and funding of profitable microprojects in solid waste management, as well as training for revenue-generating activities targeted at small and medium-sized businesses (SMEs). She is constantly searching for and staying current with new technology in the recycling of plastic that can be applied in low- and middle-income nations.

### IV. METHODOLOGY

The present study is based on secondary data collected from journals, newspapers, articles, magazines, internet and various other published sources.

**4.1 INDIA'S NEED TO MANAGE SOLID WASTE MORE EFFECTIVELY:** Improving solid waste management services in India is a serious issue at every level of society. Throwing trash or waste other than in dustbins and inappropriate disposal of solid waste are widely practiced, polluting India's air, water, soil and the environment in general. Such deeds hamper India's efforts to achieve the Millennium Development Goals (MDG). The nation's measures to control and eradicate malaria and other diseases (MDG 6), reduce child mortality (MDG 4) and ensure environmental sustainability (MDG 7) are all badly affected by the unpleasant and unclean environment created by the accumulation of waste. The Ministry of Rural Development (MORD) estimates that poor sanitation and water quality, as well as inappropriate solid and liquid waste disposal, account for about 88% of the overall sickness burden. It is anticipated that garbage output in India will rise sharply. In 2001, for instance, scientists predicted that "the total waste quantity generated in 2047 will be approximately over 260 million tons more than five times to the present level" in India. Landfill area for this big a quantity of waste would be approximately 1,400 sq.kms. Evidence indicates that, the waste generated is rapidly increasing to such an extent that in the year 2005 there was an estimated waste to the tune of 1,46,180 tons and by 2012, this is projected to rise to 8,00,000 tons. Tamil Nadu is the second-largest generator of electronic waste in India among the states.

**4.2 ENTREPRENEURSHIP IN SOLID WASTE MANAGEMENT:** Solid waste management is a field which truly requires innovative entrepreneurs to find appropriate, sustainable and implementable solutions. This is a field that has huge potential for entrepreneurship opportunities. They would be able to play a very vital role in safeguarding nature and the environment by handling means and measures to manage solid waste. In order to solve the global challenge of solid waste management smart ideas with innovative solutions are the need of the day.

**4.3 ENTREPRENEURSHIP MODELS IN SOLID WASTE MANAGEMENT:** There is a three step process in establishing sustainable or successful entrepreneurship model in SWM. They are Infrastructure, Awareness and Information Technology and marketing.

**4.3.1. INFRASTRUCTURE:** Entrepreneurs can create infrastructural facilities such as logistics, waste processing and disposal techniques for waste management. National Cigarette Recycling Program was founded by Tom of Terra cycle and the funds for the project were provided by the cigarette manufacturer Philip Morris. Under this project, the cigarette consumer collects the cigarette stubs and sends them directly to the Recycling Centre.

**4.3.2. AWARENESS:** Entrepreneurs are needed to create awareness among people regarding solid waste management. Since solid waste management has a lot to do with waste disposal behavior of the people, spreading awareness in managing the waste and recycling the waste is a difficult job. Therefore,

entrepreneurs have a crucial role to play in educating the general public about solid waste management. This kind of education would encourage the habit of proper disposal of solid waste at the household level itself.

**4.3.3. INFORMATION TECHNOLOGY AND MARKETING:** Entrepreneurship in the line of information technology and marketing strategies can facilitate smooth transfer of information between all the stakeholders and the processes of solid waste management. Therefore, the entrepreneurs must make use of Information technology and marketing techniques to ensure the proper means of disposal of solid waste.

## V. FOUNDERS OF ENTREPRENEURSHIP MODELS IN SOLID WASTE MANAGEMENT

The founder of Terra cycle, Tom Szaky and the founder of We-cyclers Corporation, BilikissAdebiyi, were pioneer entrepreneurs in solid waste management. They critically analyzed the opportunities, challenges and risks involved in the management of solid waste.

**5.1. TERRA CYCLE:** It is a private United States recycling business headquartered in Treton, New Jersey. It was founded in September 2001. They collect non-recyclable pre-consumer and post-consumer waste and the partners of corporate donors turn the raw materials into new products. Terra cycle, mostly operates in developed countries where the infrastructure for waste management is well developed and where people have the appropriate awareness and motivation. Terra cycle works with various partners to create and provide logistics for the smooth flow of recyclables. Besides ensuring the smooth process of waste management they also provide incentives for recycling activity operations with subsidies given by the corporations. Every three to four hours, Terra Cycle receives around one million waste items from 23 different nations. Items are collected by around 50 million people.

**5.2. WE-CYCLERS CORPORATION:** BilikissAdebiyi is an inspiring Nigerian social entrepreneur and the co-founder of We-cyclers. Her organisation provides waste collection and recycling services to Logas. It is estimated that 66% of Lagosians live in this area. As a part of this programme households are given incentives for collecting their waste which are picked up by We-cycler staff. We-cyclers who operate in Nigeria, which is an underdeveloped country, cater to the poorest communities. We-cyclers encourage people from these communities to segregate and store waste of value, like paper, plastic, etc. The waste collected can be exchanged for something of value. The corporation is funded by MIT Ideas Global challenge, coca cola and other such organizations.

**5.3. ENTREPRENEURSHIP IN ORGANIC COMPONENTS OF SOLID WASTE MANAGEMENT IN INDIA:** India is a deep rooted culture and a habit of recycling waste products. For example, Kabadiwalla's (online scrap business, where we can donate and sell our own scrap) and rag pickers. It is because of this culturally inbuilt system. India possesses one of the best recycling centres in the world. The informal sector in India is mostly responsible for the recycling of waste with economic values. Therefore, the entrepreneurs have a high potential in the field of solid waste management. Entrepreneurs can take up the neglected areas of SWM degradable waste through innovative solutions for their disposal. Disposing degradable waste through composting and Anaerobic digestion technologies have been utilized by entrepreneurial enterprises like Daily Dump and Green Tech Life from Bengaluru, Pelican Biotech from Kerala to implement the waste management process. The major challenge in the form of indifference and lack of concern from the part of the common man is a big obstacle to these entrepreneurs. Eco-wise Waste Management Private Limited of Noida, is a company, which deals with Collection, Transportation, Segregation, Treatment and Disposal of residential, commercial and Industrial waste.

## VI. RECOMMENDATIONS

The following recommendations can help entrepreneurs to play a vital role in solid waste management. The biodegradable waste in home composting is converted into organic manure by using earthen pots. This process helps to increase the production of earthen pots and creates opportunities for earthen potters. This inturn helps the entrepreneur to create their own organic manure. Women entrepreneurs can initiate the usage of biodegradable sanitary napkins to improve the health of the women. Entrepreneurs can focus in the innovative production of plastic spoons and utensils with edible material. Spoons can be made with millets. Entrepreneurs can reduce the usage of plastic bags by introducing biodegradable bags. Entrepreneurs can provide training workshops to manufacture cloth bags.

## VII. CONCLUSION

Solid Waste Management is one of the most essential services required for ensuring a safer environment, better quality of life and better standards of health, hygiene and sanitation. Therefore, entrepreneurship in this area is required to adopt new, innovative and efficient systems to effectively manage solid waste. Entrepreneurs searching for opportunities to create an impact on society have great opportunities awaiting them in SWM. The field of SWM has a lot of challenges but with persistence and innovation they can be overcome. With the help of information technology and marketing, awareness can be spread and a greater impact can be made on SWM in the society.

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