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Climate Change, Environment and Pollution: Recycling of Home Garbage

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Introduction

The waste-free environment is unimaginable. growing population, extensive industrialization, high living standards, lack of management and resources have been observed to be the prime reasons for increasing the waste-related issue. According to a rough estimate, 12.6 million people die every year because of improper handling of waste. This alarming situation has motivated the researchers and stakeholders to find a way out to this problem globally. Meanwhile, in developing countries like Pakistan, India, and Bangladesh the situation is different and management of Solid Waste consists of the primary and secondary collection and open dumping. Pakistan is reported to be the 20th major waste-producing country worldwide. Unfortunately, the current waste management scenario in Pakistan is far from a satisfactory level and yet to be improved. Keeping in view the need of the hour, the project is established to explore the status of waste and its management system in the university premises to study the following objective:

- To quantify the volume and types of waste produced in the university
- To segregate the types of waste by using different color waste bins
- To sale the different type of waste (Paper, Plastic, and Tin, etc.)

Outputs and Impacts

The university provided civic services for the staff and students for disposing of the garbage and hence keep the environment clean. Initially, university waste was dumped on an open site and all different types of wastes were mixed and segregation process was very difficult to achieve. The present project started an awareness campaign about the storage of the domestic garbage as per recycling SOPs: glass, tin, plastic and junk foods should be stored in specified colored containers. Three different colors of waste bins have been installed in different sites of the university. These different colors waste bins are used for the different types of waste. The detail of the types of waste with respective bins is showed in Figure 1.

Number of beneficiaries

University has more than 5,000 staff and students. The awareness posters and seminars were conducted in the university to aware the communities of the university about the different type

of wastes and their respective bins. The number of beneficiaries' data is shown in figure 2. The composition of the waste from the different bins are analyzed and shown in figure 3.



Figure 1. Poster for the awareness of the community

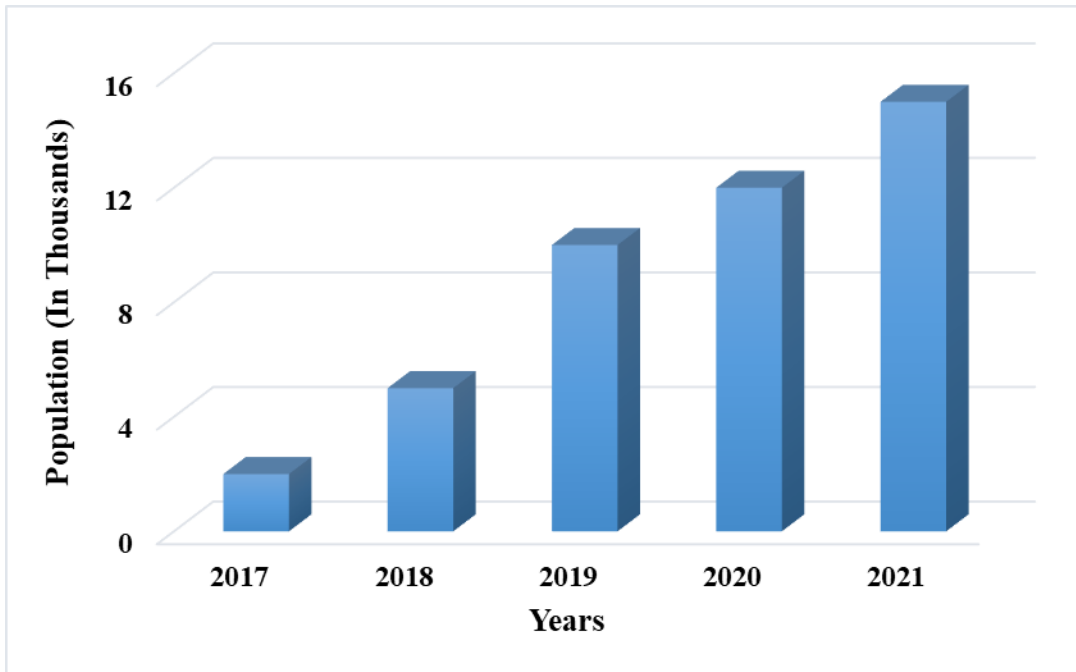


Figure 2. Number of beneficiaries of the Project

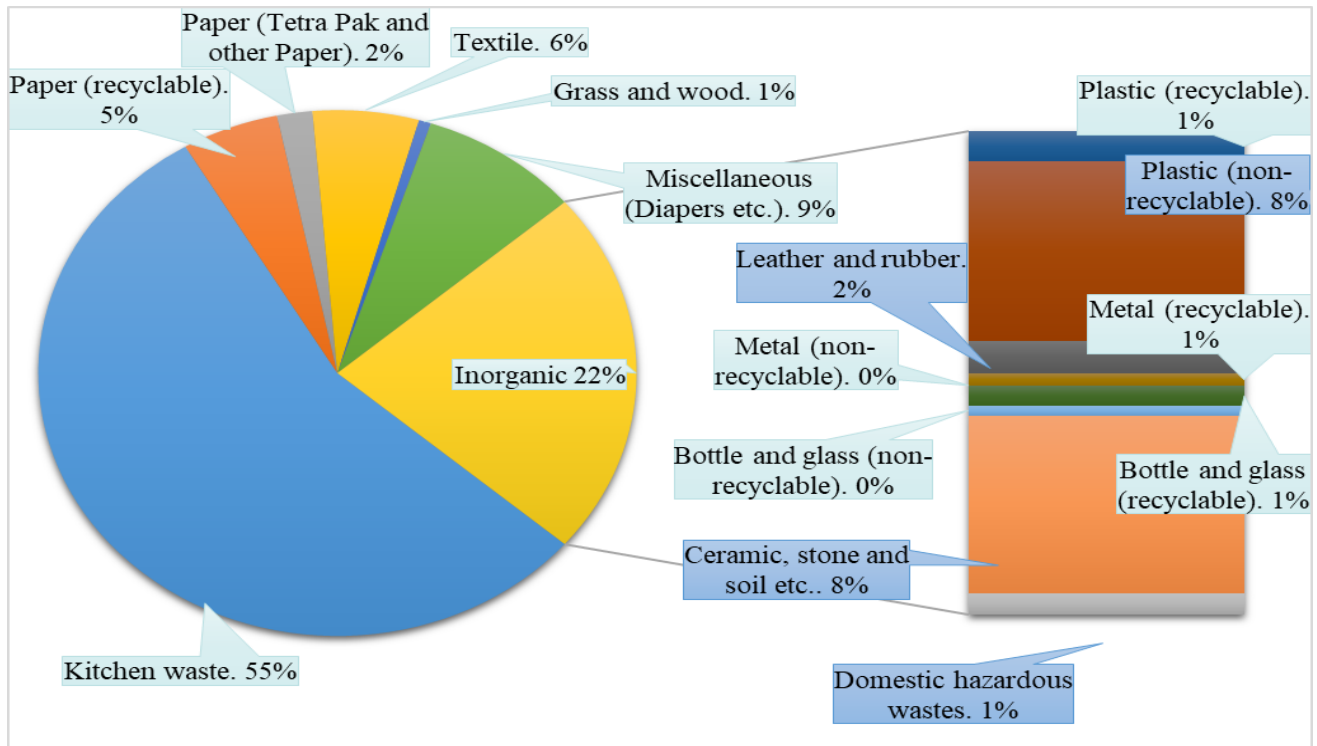


Figure 3. Different composition of the waste

Overall outcome and sustainability of Project

New types of programs should be given consideration, such as selling waste and recyclable materials. This can serve as a powerful incentive to improve budget issues. Similarly, a coordinated system of garbage sorting and recycling can be developed, to reduce the burden on landfill sites and generate additional revenues.

The adequate treatment of the waste or sustainable waste management is essential not only from a sanitation point of view but also due to its economic and environmental values including its potential contribution to energy generation in the developing countries. Many of the developed nations have adapted the approach and strategies of the integrated waste management system (Figure 3) to maximize the waste-based revenues in the form of energy, fuels, heat, recyclables, value-added products, and chemicals along with more jobs and business opportunities. As a result, waste is no longer seen as refuse or discarded material, but an asset or resource to reduce not only the landfill volumes but also the dependency on fossil fuels by generating clean fuels.

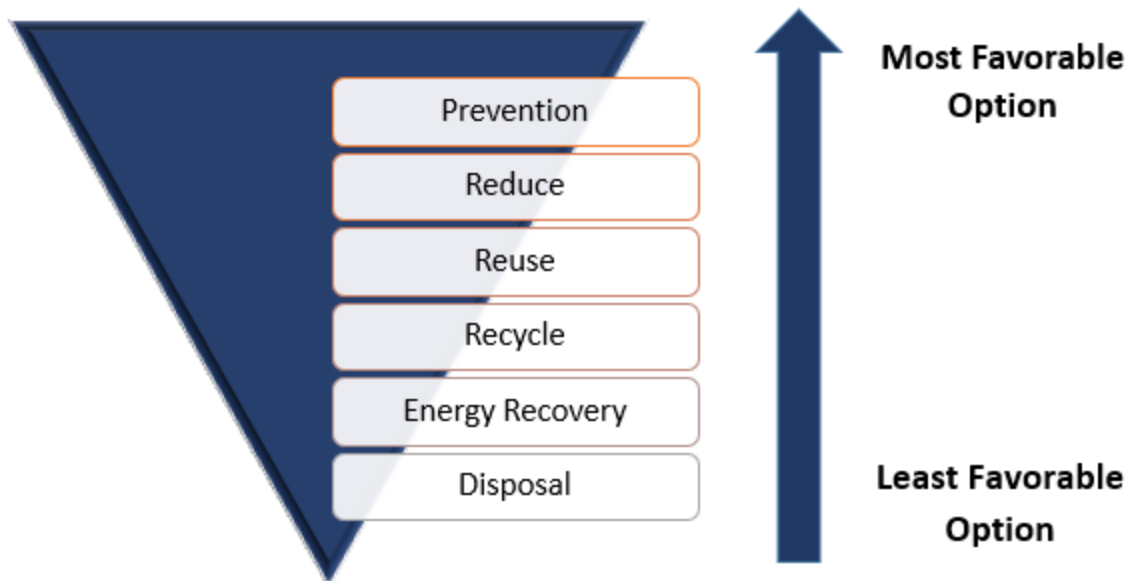


Figure 4. Favorable Options for Solid Waste

Solid Waste can be segregated according to the physical composition of waste. For the time being as collected waste from the tins has been sold. Further process is underway to recycle it.

This project, comprising waste segregation and composting of biodegradable waste, is a good example of a highly integrated approach accounting for the different elements of project sustainability. Attention was paid already during the planning stage to both technical appropriateness and to involving the local authorities (staff & students). This gradually led to a more comprehensive approach and finally to an organizational involvement of these institutional actors as well as a hand over of responsibilities to the respective entities. Since technical appropriateness was not optimal from the start, it offers the potential for improvement. Yet, the assessment also revealed that the motivating factors to achieving improvement are ongoing and continuous.

The project has clearly improved the environment influences the performance of the university, and impacts on the social, economic and ecological environment.