

# Chapter 2

## Sustainable Waste Management in Tourism and Hospitality Sectors

**Amrik Singh**

 <https://orcid.org/0000-0003-3598-8787>

*Lovely Professional University, India*

**Vipan Kumar**

 <https://orcid.org/0009-0001-4765-1797>

*Hyatt Hotels, India*

### ABSTRACT

*Waste management significantly impacts the sustainable state of the environment, public health, and economic stability. This study thoroughly analyses the many waste streams produced, with particular attention on solid waste, wastewater, hazardous waste, e-waste, and food waste. Every category has different difficulties and consequences for waste management procedures and regulations. Food waste has serious negative effects on the environment and the economy and is frequently caused by overproduction and consumer behaviour. Solid waste, including various materials, needs efficient recycling and disposal techniques to reduce its impact. Because of the speed at which technology is developing, e-waste pollutes ecosystems with harmful materials. Understanding waste streams will help stakeholders create more long-lasting and efficient solutions to safeguard the environment and public health.*

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## 1. INTRODUCTION AND BACKGROUND OF STUDY

For public health and water resources protection, wastewater management is crucial. Hazardous garbage requires special handling and disposal since it contains toxic, combustible, and reactive materials. This study thoroughly reviews the sources, environmental effects, and creative mitigation techniques for these wastes' adverse effects. The conversation highlights the significance of integrated waste management systems and the demand for a multidisciplinary strategy to handle the complexity of trash in a world that is changing quickly. The need for a multidisciplinary approach to waste management is emphasised, as it underlines the complexity of the issue and the necessity for collaboration. Responsible waste treatment in the tourism and hospitality business is one of the critical aspects of sustainable operations, as waste generation creates significant environmental impacts in these industries. The waste management scheme must be comprehensive since a wide range of waste types are brought into being - food waste, solid waste, e-waste, etc. This study gives an in-depth look at the most frequently seen waste types in restaurant and hotel sectors, also fulfilling a detailed analysis of their origins, difficulties, and strategies for their sustainable disposal. The hospitality industry leaves much solid waste behind, with the packaging materials, single-use items, in-room guest amenities, and office equipment accounting for it. According to Pirani and Arafat (2014), hotels need to manage solid waste well in order to curb environmental damage and improve business performance (Talukder et al., 2024; Singh et al., 2024; Singh et al., 2024a; Ansari & Singh, 2024; Singh & Singh, 2024a; Singh & Singh, 2024b; Sharma & Singh, 2024; Bhalla et al., 2023; Singh & Bathla, 2023; Singh & Hassan, 2024). Ultimately, this idea is also made in the study conducted by Camilleri-Fenech et al. (2020), who give a detailed case study of a five-star hotel waste generation very tactfully, putting in the effort to underline the immense necessity of adequate waste segregation and recycling programs. One of the most common types of waste, often the most extensive, is food waste in the hospitality industry. On a practical note, Dhir (2020) posits the importance of dealing with food waste through systematic literature reviews and framework development to achieve the global goals of improving the efficiency of food waste management and making the world greener and healthier. The COVID-19 pandemic has also impacted waste management, and Chick et al. (2020) addressed the perspectives and challenges of waste management in the hospitality sector after the COVID-19 pandemic. The pandemic has increased stress on exploring innovative waste management approaches and awareness of the general cleanliness of waste.

Another essential aspect in terms of sustainability is the effective wastewater management since the amounts of water used in hospitality operations including guest rooms, kitchens, laundry services, and swimming pools are very high (Talukder

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