

## Securing Livelihoods through Municipal Waste: The Case of Informal Waste Workers in Kathmandu Metropolitan City, Nepal

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**ABSTRACT:** *The management of waste has become a major global concern due to the increasing amount of waste being generated, and its impact on the environment. In many developing countries, informal waste workers play a critical role in waste management, as they contribute significantly to reducing the amount of waste that reaches the landfills. These workers are often marginalized and lack access to basic services, which makes them more vulnerable to poverty and social exclusion. In Nepal, informal waste workers (IWWs) are prevalent, and the city of Kathmandu has the highest number of IWWs. This study presents the results of a mixed-methods study that aimed to assess the sustainable livelihoods of IWWs in Kathmandu Metropolitan City (KMC), Nepal. The study collected data from 100 IWWs using structured questionnaires and employed both qualitative and quantitative research approaches for data collection and analysis. The study found that waste workers play an important role in the recycling process and have high knowledge and skills related to waste management. However, their working conditions and hygiene standards were poor, and the COVID-19 pandemic had impacted their livelihoods. The waste workers faced various challenges, such as social stigma and discrimination due to their profession. The study recommends improving the working conditions of waste workers, enhancing their access to social protection schemes, and raising awareness about the importance of waste management. The government and other relevant stakeholders can provide support to waste workers by offering training and capacity building programs, improving access to credit and finance, and creating opportunities for waste workers to participate in decision-making processes related to waste management. The study highlights the need for sustainable and equitable waste management practices that benefit both waste workers and the environment.*

**Keywords:** *Informal waste worker, Kathmandu, Recyclable, Solid waste, Sustainable livelihood.*

## Trace the Waste: An Educational Game on Waste Management

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**ABSTRACT:** *In India, awareness about waste management largely seems limited to segregating waste into wet and dry waste, and that too only theoretically. Since individuals are often not involved in the process of waste management after disposal, there is an alienation in terms of understanding what happens to something after we throw it. By tracing the journey of a commodity after its disposal, one can reflect on the importance of waste management as well as consumerism. We attempted to address this objective through environment and science education, specifically by designing an educational game. 'Trace the Waste' is an educational board game, designed to sensitise children and adults about domestic waste management with the hope of engendering a personal connect to this crucial issue. This study focuses on the iterative design process and development of the game and briefly describes the gameplay and mechanics, which are drawn from real life scenarios present around the issue of waste disposal and management in an urban space. It also presents an overview of how various elements of design in the game evolved after multiple prototyping and playtesting, keeping in mind the broad objective of the game.*

**Keywords:** *Environment Education, Educational Games, Waste Management, Game Design, Play-based learning*