Sociological Exploration on Re-shaping Social Identity: From Waste Picker to Garbage Farmer in Dhapa, Kolkata

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1. Introduction

In the name of urban growth and social well-being, cities consume resources and expel materials socially constructed as "waste," which are deposited in marginal urban spaces known as landfills. These sites increasingly generate new socio-ecological metabolisms. Kolkata's Dhapa Dumping Ground, located within the East Kolkata Wetlands (a Ramsar Site since 2002), has received municipal solid waste since 1941 and currently handles around 4,500 tonnes of waste daily. Spread across 24.71 hectares, Dhapa is surrounded by villages such as Dhapa Durgapur, Makaltala, and Khanaberia, inhabited by nearly 150,000 people (*Census 2011*), largely migrant and economically marginalised communities. While Dhapa generates informal employment for nearly 25,000 waste workers, it has severely degraded shared resources such as land, water, and air. These commons are overburdened due to structural neglect rather than individual misuse, rendering life increasingly precarious (*Hardin, 1986*). With the eastward expansion of Kolkata, older dumping zones have gradually transformed into peri-urban agricultural land locally known as "garbage farming," creating new livelihoods alongside new forms of insecurity.

1.1. History of Landfill:

Landfill is one officially demarcated area as the most common and oldest form of waste disposal behavior. The exponential growth of population, urbanization, and industrialization combined with an increasing consumption of goods has led to the dramatic rise in the amount of garbage produced. Thus the huge amount of waste generation from every household in urban spaces poses significant risk and challenges for society and environment. To manage "Garbage Explosion", Municipality initiate to recycle some and re-introduced into the production cycle. Some is incinerated which helps into the generation of electricity, useful steam or heat a conversion of waste to energy and the remaining left open in the Landfills.

The significant colonial past and rapid urbanization has been the primary contributor of making the history of any Urban Landfills. Similarly, Kolkata with a voluminous amount of population (approx... 4.48 million) generates about 3,500 to 3,700 tons of municipal solid waste (MSW) everyday dispose almost entirely at the Dhapa Dumping Area. Dhapa Dumping Area is one of Kolkata's largest landfill sites, owned and operated by Kolkata Municipal Corporation (KMC). Dhapa is crucial for carrying the city's dump since 1941 and it became a center for farming by using the wastes that has been disposed there. But with time, the more the city has developed and gets populated, the more amount of wastes has started getting dumped there, results into the extension of the landfill area towards the east parts of the city. And three villages within the KMC area namely, Makaltala, Dhapa-Durgapur, and Khanaberia are situated near the vicinity of the dumping area.

1.2. Environmental and Social degradation:

The entire Dhapa dumping area is geographically divided into two parts. The western part of the landfill got closed officially in 2009 with a geo-textile membrane whereas the eastern part of the landfill is still operational, uncovered, and have no environmental protection arrangement there. Along with Municipal Solid Waste (MSW), the active portion of the landfill is still receiving the city's industrial hazardous wastes. The major

problem of lack of systematic guidelines, unscientific way of treating wastes, open dumping garbage into the landfill, negligent waste disposal practices into the bargain causing innumerable health hazards to not just the waste workers, but all the people living in the vicinity, contributing to the contamination of surface and ground water, concentrated methane and carbon dioxide in air. Thus, furthering the environmental and social crisis.

1.3. Role of Informal Waste Workers:

Informal waste workers play an indispensable role in the broader waste management system, particularly in urban areas. They are actively involved in waste collection, handling, and segregation, effectively serving as a crucial link between Urban Local Bodies (ULBs) and local communities. The informal waste sector typically consists of small-scale, labour-intensive groups that operate without formal regulation or registration. These workers often have limited access to technology and lack financial security. Their primary source of income comes from the resource value of waste — the earnings generated through the collection and sale of recyclable materials.

According to the International Labour Organization, waste collection is recognized as a 'green job' that should be actively encouraged and supported, as it plays a vital role in advancing the global green economy and achieving environmental sustainability (Waste Aid 2016; International Labour Office 2012; ILO Partnership Agreement 2015). Waste workers make substantial environmental contributions by reducing carbon emissions through recycling practices, which help minimize the volume of waste sent to landfills and promote the reuse of both biodegradable and non-biodegradable materials. In essence, their work aligns closely with the broader goals of environmental sustainability, significantly contributing to the creation of cleaner, greener, and more sustainable communities.

1.4. Gender dynamics among waste workers at landfill:

Like other sectors, the conventional gendered division of labour in landfill site is comprehensive and reflects the traditional socio-cultural stereotypes that create unconscious gender bias. Men in landfills are mostly engaged into superior tasks whereas ground level management tasks like collecting, segregating are being officiated to the women workers there. Along with their household chores women are bound to work at landfill as informal workers to get some extra earning to run the family.

Dhapa Dumping Area is no exception in this case. Women workers there has been a critical part of the larger informal waste economy. But working at this toxic environment, they are getting impacted by extreme health hazards, social stigma, exclusion, and economic insecurity. To overcome this social issue, KMC, join hands with NGOs and public-private partnerships, to initiate women's development programs into its broader waste management and urban renewal strategies.

One of the significant steps in women's development around Dhapa has been the establishment of vocational training programs. Organizations like the 'Tanuz Vocational Training Society', founded by Arpita Chakraborty and Anushree Malhotra, have been instrumental in providing skill development opportunities to women and children in the area. These programs focus on enhancing communication skills, particularly in English, and offer training in various crafts, enabling women to diversify their income sources beyond waste picking.

1.5. Role of local governance in bettering the lives near landfill:

The Kolkata Municipal Corporation (KMC) has identified the hazards related to health associated with living and working near the landfill. The Corporation has executed measures to mitigate these risks. For instance, the procurement of water sprinkler vans aims to reduce the incidence of fires caused by methane gas buildup,

thereby improving air quality and reducing respiratory ailments among residents. Additionally, the KMC has organized health camps and awareness programs focusing on hygiene and disease prevention, targeting women and children who are most vulnerable to health issues arising from the landfill environment.

In fact, in order to reduce the load of dumped wastes at Dhapa, KMC has aimed at resuming the bio mining process at the marshlands to increase the capacity for extra load coming from other parts of the city. Apart from that, with the aim of converting Dhapa landfill site into a sanitary landfill site for a scientific disposal of waste the corporation has identified a new site named Rashapunja near Joka.

1.6. Research Question:

Although, there are number of mitigation programs are being taken to improve the lives of waste workers and the inhabitants of the local people, but there is still few questions arise as a sociologist that: what are the livelihood strategies and risks the waste workers are putting up constantly to negotiate for living and working in a toxic environment? Mostly migrant labourers continue to work in landfills despite grave health risks mainly due to extreme poverty, lack of alternate job opportunities, and social exclusion, stigma associated with them- how do the people under the threat of environmental racism perceive their uncertain existence? What is the present socio-economic, and health condition of women working at landfill or living in nearby area? Therefore, the central research questions that the researcher is concerned about,

1. What drives the choice of waste segregation as an occupation?
2. What motivates the shift from waste segregation to garbage farming?
3. How does this transition signal a “professionalisation” of informal labour?
4. Does elite consumption of garbage-fed crops represent a bridge or a hidden social boundary?

2. Objectives of the research:

Work in the waste sector is often viewed as degrading and associated with low social status. Informal Waste Workers are among those who face this stigma. Due to limited financial resources, they struggle to meet even their basic needs and thus have little choice but to engage in waste-related work. Their lack of formal education further restricts access to alternative employment opportunities. Moreover, since waste work usually provides daily wages, it becomes a more immediate and appealing source of income for survival. However, they regularly encounter social discrimination and disrespect, not only directed at themselves but also extending to their children, who often face ridicule and exclusion in schools and other social settings. The general objectives of this research is

1. To examine the living and working conditions of informal waste workers in Dhapa.
2. To outline changes in livelihood strategies following landfill restructuring and garbage farming.
3. To analyse shifts in social identity, stigma, and habitus during this transition.
4. To examine consumption of garbage-farmed crops among nearby high-income residents.

3. Literature Review:

Over the recent years innumerable research works has been conducted on the lives of Urban Waste Pickers and Landfill sites of India. Waste materials are an important part of our everyday lives. Especially after the rapid growth of urbanization and modern day use of disposable items. In the course of time, this has evolved into a complex socio-economic ecosystem, where marginalized communities, particularly women, engage in informal waste collection and recycling activities. The role of women in managing waste is basically started from the home front with their socialization process.

Arghya Sen’s (2025) study provides an in-depth analysis of the worsening solid waste crisis in Kolkata and Howrah, focusing on the environmental, infrastructural, and health impacts of overfilled dumping yards such

as Dhapa and Belgachhia. The paper highlights how rapid urbanization and industrialization have overwhelmed waste management systems, with Dhapa operating at nearly twice its designed capacity. It links poor waste segregation, outdated transport systems, and weak governance to severe air and water pollution, particularly citing high PM10 levels and leachate contamination of the Hooghly River. Sen emphasizes the urgent need for integrated waste management solutions, including composting, recycling, waste-to-energy initiatives, and policy enforcement by institutions like the National Green Tribunal.

Bullard, in his 'Dumping in Dixie: Race, Class, and Environmental Quality' (1990) reveals how systemic racism and class inequality intersect in shaping environmental policy and land-use decisions. He documents the struggles of affected communities who mobilize against environmental racism, showing how grassroots activism can challenge institutionalized discrimination. Bullard's work reframes environmentalism from a social justice perspective, arguing that clean air, water, and land are basic civil rights, not privileges. The book exposes how environmental hazards—such as landfills, waste incinerators, and polluting industries—are disproportionately located in African American and low-income communities across the southern United States.

According to the report of the Ministry of Environment, Forest and Climate Change (EFoCC), with an average yearly growth rate of 4%, the nation produces about 62 million tons of garbage. Additionally, India currently produces 70 million metric tons of municipal solid trash. Only 20% of it is recycled, and the rest ends up in landfills. A solid waste management system is required in this case. Waste management in India might grow to be a $15 billion business, according to estimates. 25% of India's total trash production consists of recyclable dry waste components. This recyclable garbage can be used as a source of raw materials after being improperly collected and deposited into landfills.

Dasgupta (2023) discussed in her "Invisible Custodians: A Critical Inquiry into the Continuing Obscurity of Women Waste Pickers at Dhapa Landfill of Kolkata", the persistent marginalization of women waste pickers at Kolkata's Dhapa landfill. The work critically examines not only women's contributions to the urban waste economy as indispensable but also depicted how the socio-religious influence has suffocate these marginalized section of the society by stigmatizing them. From a feminist and environmental justice perspective, the article highlights the intersectional vulnerabilities like gender, caste, class, and environmental degradation that define the lives of these women.

The role of women in informal waste economies has been extensively documented on Disha Earth (2017) rapid assessment in the Kolkata Municipal Corporation area, indicating that over 60% of waste pickers were women, many of whom faced hazardous working conditions without formal recognition or protective measures. The absence of institutional support exposes women to chronic health problems like respiratory infections, skin diseases, and reproductive health complications.

Joelson and Lord (2016), piloted a study on the elements of the Municipal Solid Waste Management (MSWM) system in the city of Mumbai and Navi Mumbai, India where they showed the existing challenges with a focus on social and political aspects such as waste management planning, strategies and legislations. There is a lack of coordination and weaken system approach towards handling the MSWM which is a major obstacle to achieve long-term sustainable solution.

Surat Sheikh (2023), showed a distinct picture of the classification between residential and non-residential premises of waste generation and management practices. Based on the study the researcher identified few back draws in the action of Municipality related to public awareness, education and civic discipline which is slowing down their goals to achieve the sustainability.

According to the 2019 report on "Gender Perspectives on Waste in India, Indonesia, the Philippines and Vietnam", the role of men in formal waste collection process is much higher in developing countries except India, where the number of women employed in this sector is much larger. Based on the 2019 studies on developing countries, Women plays a central role in society in terms of disposing or collecting. Although the attitudes towards disposing household waste differs country to country. This research shows a comparative study of gender roles in waste management and how society treats them.

Bagchi and Mitra (2017) in their work on "Life, Labour, and Recycling" portrayed a sociological analysis of the waste workers in both 'formal' and 'informal' sectors of the solid waste management industry in Kolkata. The study critically analyses the tendency of making municipal waste into a more profitable item in the name "Recycling". How the discourse of waste management is giving these marginalized section of workers as 'Safai Karamchari'.

Based on Roy's understanding (2023) on "Urban Waste Governance and Marginalized Livelihoods. Journal of Urban Affairs", the women in Dhapa Dumping Site represent what Bourdieu (1986) would call "symbolic violence," where social hierarchies are normalized, and marginalized groups internalize their subordination. The stigma attached to waste work severely limits these women's opportunities for upward social mobility and access to urban citizenship rights.

Ecofeminist scholar Vandana Shiva (1988) in "Staying Alive" contextualizes the role of women in environmental stewardship, emphasizing that women's connection to natural resources is both life-sustaining and politically significant. Applying Shiva's analysis to Dhapa reveals that women's work with waste is not merely survivalist but represents a form of ecological labour that remains unrecognized within male-dominated urban systems.

The Gender and Waste Nexus report (UNEP-IETC & GRID-Arendal, 2019) examines how gendered divisions of labour and social norms shape waste management in Bhutan, Mongolia, and Nepal. It shows that waste management is not gender-neutral—women are largely confined to low-paid or unpaid informal roles, while men dominate formal and managerial positions. The report emphasizes that modernization often deepens this inequality, even though women's informal contributions are vital to recycling and sustainability. It calls for gender mainstreaming in waste policies through inclusive training, gender-disaggregated data, and equitable participation, framing waste management as both a social justice and sustainability issue.

Lawmsangpuia Ralte and Janet C. Lalhmingpuii's (2024) study explores the daily struggles, stigma, and social identity of ragpickers in Aizawl, Mizoram. Framed within urban poverty and informal labour, it shows how unskilled migrants turn to waste collection for survival. Using symbolic interactionism and labelling theory, the authors reveal how ragpickers' identities are shaped by social exclusion and poor working conditions. Despite their crucial environmental role, ragpickers face health hazards, lack recognition, and remain marginalized, prompting the authors to call for stronger policies, healthcare access, and social protection.

Vinay Gidwani's "Value Struggles: Waste Work and Urban Ecology in Delhi" offers a critical examination of how waste and labour intersect within the political economy of urban India. The article explores how waste work—often carried out by marginalized and informal labourers—is central to the functioning of Delhi's urban ecology, yet remains socially devalued and economically exploited. Gidwani situates waste work within broader "value struggles," where the act of reclaiming discarded materials becomes both a survival strategy and a form of resistance against systemic marginalization. By linking Marxist ideas of value with ecological thought, he argues that waste is not merely a byproduct of urban consumption but a contested site where social worth, economic production, and environmental sustainability are continuously negotiated. This piece stands out for its rich ethnographic insight and theoretical depth, shedding light on the contradictions of neoliberal

urban development and the invisible labour that sustains the city's ecological metabolism. It contributes significantly to urban political ecology, labour studies, and environmental sociology by foregrounding the dignity and politics of waste work.

4. Methodological Framework:

4.1. Research Design:

The research design follows a descriptive and exploratory approach. It is descriptive in nature, as it involves Participatory Rapid Appraisal (PRA), in-depth Interviews, ad Focus Group Discussions (FGD) to examine the roles and functions of individuals and organizations actively engaged in activities at the Dhapa landfill site. Following the method of Ethnographical understanding- involving in in-depth interviews, participant observation, document analysis, videography and photography will be used in the time of collection of data.

4.2. Data Collection method:

•In-depth Interviews: Will conduct semi-structured interviews with women waste collectors to understand their roles, challenges, and coping mechanisms.

•Focus Group Discussions (FGDs**):** Organize FGDs with community members to collect joint insights on health issues and perceptions of government initiatives.

•Participant Observation**:** Spend time in the community to observe daily activities, work practices, and social interactions.

•Document Analysis: Review policy documents, government reports, and NGO publications related to waste management and community development in Dhapa, Kolkata.

4.3. Sampling framework:

The study will be conducted with the help of Purposive and Snowball Sampling which will help to select the women who are working in the sector of informal waste economy and residing in the area of Dhapa Dumping Site. Approximately, 30-35 women will be chosen as Sample to ensure diverse perspective.

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