From Exclusion to Integration: How Informal Workers Can Improve Urban Waste Management

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Summary

Solid waste management is one of the most pressing urban governance issues in low- and middle-income countries. Because waste volumes are increasing, the associated fiscal, environmental and health costs will also rise. The idea of working with informal waste workers to address this problem is often suggested but rarely implemented. Based on the case of Irbid, Jordan's second-biggest city, we show why it was successful there and draw recommendations for other municipalities.

Irbid used an approach that combined what we call "frontloading trust" and "prioritising integration over training". First, the mayor and municipal managers invited informal waste worker representatives to a structured dialogue about waste management challenges in the city, about the role of informal workers, and about potential solutions. During this months-long process, they overcame class differences, stigma and distrust and agreed on how to work together in the future. Then, rather than requiring extensive prior training of informal workers, they started to work together, which allowed workers to show what they were able to contribute ("prioritising integration over training").

Based on this process, the municipality and informal worker representatives signed the first Memorandum of Understanding of its kind in Jordan, legalising the work of informal workers, providing them with official badges and safety equipment and piloting their integration into municipal sorting facilities. After only a few months, data showed that the integration of informal workers had reduced landfill waste, had saved the municipality a lot of money, had improved waste services for residents, and had increased respect, protection and income for informal waste workers.

This case shows that challenges like urban waste management require not only technical but social and governance innovations that include rather than exclude informal workers, and that can thereby contribute to improved livelihoods for all concerned.

Introduction

Solid-waste management is one of the most pressing urban governance challenges in low- and middle-income countries (LMICs). Rapid urban population growth is outpacing infrastructure expansion, leading to massive service gaps in waste collection, treatment and recycling (UN DESA, 2018; UN-Habitat, 2022). The United National Environment Programme (UNEP) estimates that, to date, less than 40 percent of urban waste is collected, leaving 2.7 billion people without waste collection services. Global recycling rates also remain low at 19 percent and as low as 5 percent in Sub-Saharan Africa and South America (UNEP, 2024).

This problem and the associated fiscal, environmental and health costs are set to rise dramatically. By 2050, global municipal solid waste is expected to almost double, reaching 3.8 billion tonnes compared to 2.1 billion tonnes in 2023, if current trends continue (UNEP, 2024; see also World Bank, 2018). What can be done to improve urban waste management in LMICs now and in light of future challenges?

A prominent idea is to work more closely with informal waste collectors and recyclers. However, despite the potential, this rarely happens. This Policy Brief explores why that is the case and makes recommendations on how to integrate informal waste collectors into formal urban waste management more systematically, based on the successful case of Irbid, Jordan's second-biggest city.

Informal urban waste collection and recycling

Many studies have shown that informal actors collect and help recycle significant shares of urban waste (Wilson et al., 2006; Agamuthu, 2010). Globally, an estimated 15 to 20 million people make their livelihoods as informal waste collectors under often precarious conditions without legal recognition and protection (WIEGO, 2023; UNEP, 2023). On average, each worker collects between 20 and 80 kilograms of plastic annually (Cook et al., 2024). Focusing on the MENA region, Hemidat et al. (2022) argue that informal actors play a crucial but under-recognised role in waste collection, recovery and recycling. They emphasise that integrating informal workers into circular economy strategies could boost recycling rates while reducing the environmental burden and improving livelihoods. Despite the vital contributions of informal waste collectors, however, they continue to face hazardous working conditions and are neglected or even harassed and prosecuted (Abubakar et al., 2022; Dodman et al., 2023; Gunsilius, 2011; UNEP, 2024).

There are two barriers that frequently hold back politicians and formal waste managers from working with informal waste collectors in LMIC cities. The first one is social stigma. In many contexts, informal waste collectors belong to marginalised groups and face exclusion, prejudice and harassment from citizens and authorities alike (WIEGO, 2023; Wittmer, 2022). For that reason, formal waste managers often do not consider or even resist interacting or working with informal waste workers. Second, a "deficit assumption" prevails about informal workers. Apart from ignoring the well-documented contributions that informal waste workers are already making (Simpson et al., 2024; Tröger et al., 2023), waste managers often regard them as unskilled, sometimes even as beggars or thieves. Therefore, even if they consider working with them, extensive prior training is usually requested to deal with the assumed deficits. Together, the social stigma of and the deficit assumption about informal waste workers often limits their systematic integration into formal urban waste management systems.

While examples of the successful integration of informal waste workers with positive outcomes exist (Dias, 2011; Kilby, 2013; Milić et al., 2025) – with degrees of integration ranging from agreement-based collaboration to formal employment – these are exceptions. Because of that, the case of Irbid in Jordan offers important insights. Through a problem-driven iterative adaptation (PDIA)

process, the municipality decided to officially recognise informal waste workers and work with them. They provided the informal workers with official badges and basic safety equipment, but did not require them to undergo extensive prior training, instead offering on-the-job training at a later stage. This led to less landfill waste and pollution, savings for the municipality, better services for residents, and increased respect, protection and incomes for informal waste workers.

The urban waste management challenge in Jordan

Jordan's urban waste management is under pressure. Rapid urbanisation, in part driven by the arrival of refugees from Syria, have outpaced municipal infrastructure and services in recent years (Abu-Qdais et al., 2023). Up to 90 percent of municipal solid waste is sent to landfill, thereby increasing greenhouse gas emissions and the risk of groundwater contamination, while forfeiting recycling potential. Of the 6 to 10 percent of waste that is recycled (ACTED, 2021), approximately 70 percent is collected and processed by informal workers and small businesses (Aldayyat et al., 2019; Hemidat et al., 2022; Al-Tawaha, 2023). And yet, informal workers not only lack basic social protection, they are also under the constant threat of being chased away from waste containers or being harassed by citizens or security forces.

In Irbid, for example, municipal law prohibited searching through waste. Because informal waste workers were afraid of the environmental police who enforced this provision, they often littered when searching through waste because they wanted to get away as soon as possible. When the project began in 2023, there was distrust between waste managers and informal waste collectors, and the former were sceptical that the latter had much to contribute to urban waste management and recycling.

The PDIA-based reform process in Irbid

The reform process began in 2023 and was supported and facilitated by GIZ's Solid Waste Management in Jordan (SoWas) project and advised by IDOS and Technical University of Darmstadt. In a series of workshops and meetings, municipal officials, ministerial representatives, informal workers from the Waste Recycling Cooperative (WRC) and donors jointly analysed the root causes of waste collection and recycling inefficiencies, discussed the role of informal waste workers, and developed workable solutions. This dialogue was structured according to the principles of the PDIA approach (Andrews et al., 2017). Developed at the Harvard Kennedy School, PDIA is an approach for addressing complex governance problems that are unlikely to be resolved through more linear, pre-planned interventions. It emphasises collective problem deconstruction, quick and iterative experimentation, broad engagement, and continuous feedback and learning loops. Through this process, stakeholders can co-develop reform approaches that are locally specific and primarily based on local expertise and resources (Andrews et al., 2017). By being locally embedded in this way, the solutions developed through this process are likely to be more effective, efficient and sustainable than external solutions (see also Kornprobst et al., 2025; Roll, 2021).

The initial workshop revealed several core challenges in the Greater Irbid Municipality's (GIM) urban waste management system: the absence of reliable data on informal workers, lack of a legal framework and social protection, limited worker representation, low public recognition of the sector's contributions, restricted access to waste streams due to enforcement practices, insufficient training opportunities, inadequate safety equipment, and persistent littering around bins.

In subsequent workshops and meetings, participants developed practical responses to these challenges together. They included creating a database of informal workers and their economic

contributions, strengthening informal workers' representative bodies to coordinate with the municipality, delivering targeted training, launching public awareness campaigns, advocating for legal recognition and work permits, piloting joint sorting initiatives, issuing official badges linked to a code of conduct that restricted littering or burning of waste during collection, and providing basic safety equipment to protect the workers while searching through waste. While these suggestions may appear rather straightforward, many of them could only be agreed upon after long and sometimes controversial discussions because they implied concessions or commitments from the municipality.

In the first months of the process, in particular, the group had to overcome several challenges. They had to get to know each other despite the enormous professional and social class differences, had to overcome social stigma, build a basic level of trust, and realise that despite their differences, both sides could benefit from cooperating with each other. Some officials, however, remained hesitant to talk to and consider working with informal waste workers. In one case, a senior official even dropped out of the process for that reason. In another case, the mayor's intervention was necessary to drive the process forward. Over time, however, officials overcame their scepticism.

In January 2024, less than a year after the PDIA process had started, GIM and the WRC signed a Memorandum of Understanding (MoU). This was the first formal agreement of its kind with informal waste workers in Jordan. The MoU legalised their work, provided basic safety equipment such as gloves and high-visibility vests, and official badges confirming that the workers were recognised by GIM. It also stipulated the piloting of the integration of informal workers into municipal sorting facilities. Based on the MoU, 305 informal workers were legalised by September 2024.

Mechanisms of change: frontloading trust and prioritising integration

The Irbid model's distinctive feature was the combination of frontloading trust and prioritising integration over capacity building. The mayor and the municipality demonstrated their commitment to the process by taking the talks with informal workers very seriously and being open to or even bringing up topics like official badges or safety gear. By doing this as the more powerful party, they signalled that they were serious about the integration process and that informal waste workers could trust them.

Prioritising integration without requiring prior training allowed informal workers to demonstrate immediately what they were able to contribute to municipal waste collection and recycling. They did not have to overcome the deficit assumptions that capacity-building-first approaches often imply. Instead, training-on-the-job sessions were later designed, based on actual capacity gaps and needs. PDIA's iterative structure meant that obstacles, such as improving practices at the sorting station or addressing other challenges that informal workers faced, could be addressed through rapid adjustments during the process, thus reinforcing mutual trust.

Outcomes of informal worker integration in Irbid

The results of integrating informal waste workers into the formal system in Irbid were significant as a wide range of indicators show. Drawing on national and municipal waste data and interviews with 72 informal collectors and recycling businesses between June and September 2024, the results are summarised in Table 1. First, the overall amount of waste sent to the local major landfill decreased by an average of 255 tons per month between March and September 2024, thereby reversing the national trend of rising landfill waste volumes (Abu-Qdais et al., 2023; ICU, n.d.). This reduction translated into average

monthly savings of about EUR 11,000 (JOD 9,014) for the municipality. Urban waste management consumed almost a quarter of GIM's total annual spending (Abu-Qdais et al., 2023; Irbid Municipality, 2025), and the integration cut annual costs for waste collection by between 1.4 and 2.1 percent. These quick gains eased fiscal pressure, allowed for further investments, and showed how much potential the expansion of the collaboration with informal waste workers entails.

Apart from these savings, littering around waste containers decreased and the relations between waste collectors and the environmental police as well as local communities improved markedly. Of the waste collectors with official badges, 83 percent reported experiencing greater respect in their daily interactions. The income of 55 percent of workers also increased by a median value of

JOD 65 per month. Considering that the average income before the integration was between JOD 150 and 250 (Oxfam, 2022), this represents an increase of up to 43 percent. Though modest in absolute terms, these increases were critical for households, especially because 74 percent of informal waste workers were the main or even sole breadwinners in households with at least five members (Oxfam, 2022).

In conclusion and in the absence of other major interventions, even after this short period since the integration of informal waste workers into the formal system in Irbid had started, the results show a fourfold benefit, with less landfill waste and pollution, savings for the municipality, better services for residents, and increased respect, protection and income for informal waste workers.

Table 1: Outcomes of informal sector integration in Irbid (2022–2024)

Indicator	Before integration (2022)	After integration (2024)
Waste going to landfill	Volume of waste going to landfill growing annually	Waste going to landfill reduced by approximately 255 tons/month on average (March–September 2024), reversing the national trend of rising landfill disposal
Municipal waste management costs	Costs rising with increasing waste	Average savings of around JOD 9,014/month and JOD 108,300/year (equivalent to 2.1% of Irbid's waste management budget in 2024)
Littering around waste containers	Frequent; collectors hurried due to fear of residents or police	Noticeably reduced; improved relations with residents and environmental police
Worker status and recognition	Informal, unrecognised; frequent confrontations with police	Legalised through MoU with official badges; improved dignity, less conflict with police as well as residents and more respect (83.3% of badge-holders reported better treatment)
Worker income	Majority earned considerably less than JOD 300/month	Increases by JOD 65/month (median) for majority (55%) of workers, representing between 19–43% increase compared to pre-2022
Safety conditions	Limited or no protective gear	Safety equipment provided, including gloves and high-visibility vests

Source: Authors, based on MoU, data from landfill weighbridge of Al Kheider, national waste data by the Jordan Ministry of Environment, and field interviews (2024).

Comparison with other approaches

How does the approach of frontloading trust and prioritising integration compare to approaches used by other development projects in the same field? A few years earlier, one of the largest bilateral donors had begun to fund an urban waste management project in Jordan with the goal of integrating informal waste workers into the formal sector. This project, which we will call the "DEV project" for the purpose of this Policy Brief, ended in 2025 and worked with a capacity-building-first approach.

Before trying to establish a cooperation between a large municipality and informal waste collectors in Jordan, the DEV project trained over 1,500 informal workers. It also supported the drafting of legislation to allow the trained informal collectors to later operate within the municipality. With a budget of more than EUR 4 million for four years, which mostly covered training expenses, the DEV project was able to improve informal workers' theoretical business knowledge. But according to officials interviewed, as of March 2025 not a single one of the trained and certified informal waste collectors had been employed by or had started to work with the municipality concerned. The proposed legislation had been approved but not implemented on the ground, so the trained informal workers were not legalised. Therefore, the DEV project had failed to meet its most important objectives.

The differences between the SoWas project and the DEV project in terms of project approach, integration approach, budget and outcomes are stark. We cannot offer a detailed investigation of how these aspects were linked in each of the projects here, but based on available evidence, a plausible argument can be made. For doing this, it is important to distinguish between the development project's approaches and the integration approach for informal workers that was used in both cases.

Beginning with the approaches of the projects, the SoWas project used the PDIA approach, which means that local actors are in the lead, analyse the problems and develop solutions together, while experimenting, adapting, iterating and learning with each other along the way. The DEV project worked with a more conventional pre-planned and linear approach which focused on implementing solutions proposed by technical experts (for the differences between these approaches, see Roll 2021).

The approaches for the integration of informal waste workers used in both projects are not completely independent from the project approaches but neither did they predetermine them. The PDIA approach, for example, allowed local actors to build mutual trust and develop their own integration approach in the workshop discussions over time. Actors in Irbid could have chosen a different integration approach but they went with the frontloading trust and prioritising integration approach because it seemed to work best for both sides. In the DEV project, however, there was no choice. The pre-planned project worked with a more conventional sequence of activities. Having identified capacity gaps of informal waste workers and missing legislation for them to work in the municipality as key problems, they provided a training programme and drafted a legislation in response. However, this capacity-building-first integration approach did not provide space and time for local actors to overcome distrust, plan together, and develop a mutual understanding and commitment for working together.

In Irbid, the approach of frontloading trust and prioritising integration over training eventually led to an MoU in a challenging but still rather short period of time of less than a year. While this MoU did not envisage fundamental legal or institutional changes, the practical changes that the parties agreed upon were feasible, backed by both sides, and resulted in rapid and significant improvements.

Figure 1 summarises these different approaches for the integration of informal workers into formal

waste management systems. One can start with a more general and processual approach at the top of the figure by focusing on relations between local government and informal workers. As the more powerful actors, local politicians or waste managers can decide to frontload trust to overcome the stigma that hinders closer exchange. This exchange process can help to overcome distrust and discover how both sides could potentially work with each other and benefit from it. The next step is to overcome the deficit assumption by prioritising integration over required prior training. With its more conventional integration sequence, the DEV project started at the bottom of the figure by providing extensive training. But social stigma, distrust, and prevailing deficit assumptions are difficult to resolve this way because local actors have no space to process and resolve them.

While it is not the focus of the Policy Brief, the differences between both projects in terms of budget are also important – especially in times of shrinking overall development budgets. Using the PDIA approach, the SoWas project operated with a tiny budget of around EUR 4,000 for workshops and safety equipment, supported by two advisors who each dedicated up to a quarter of their working time for a year and a half. By contrast, the more traditional, pre-planned capacity-building-first DEV project had a budget just above EUR 4 million.

To summarise, we argue that in this case the frontloading trust and prioritising integration approach led to much better outcomes than the more conventional capacity-building and legal-provisions-first sequence for integrating informal waste workers. The key difference was that the former approach was more appropriate for the actual problems on the ground. These problems were *not* primarily that informal workers lacked capacity or that there was no legal provision for collaboration as such. Instead, it was the lack of exchange between the two main parties because of social stigma, mutual distrust and deficit assumptions. The PDIA-based process gave local stakeholders the space to overcome these challenges and together develop an integration approach that suited both parties. In the end, the process by which they arrived at integration was a large part of the integration approach itself and one of the main reasons why it has been successful.

Figure 1: Different integration models for informal waste workers
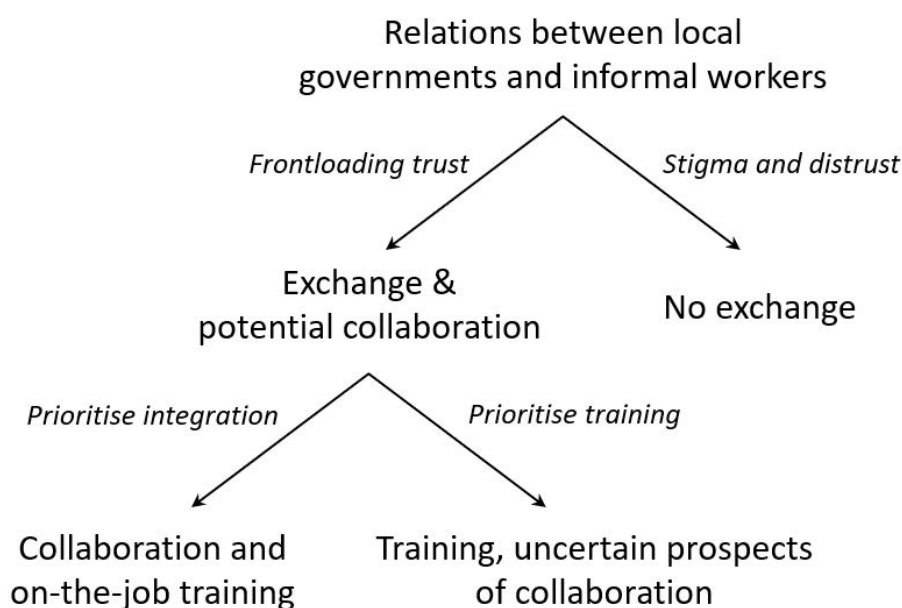
Source: Authors

Challenges and recommendations

While the MoU has led to tangible improvements, challenges remain. For example, not all informal collectors have improved their income. They are also not currently allowed to use loudspeakers to advertise their business. These and other challenges must be addressed in an ongoing dialogue. But since they have gone through such a process together, there is now a foundation for these kinds of conversations. The joint goal of Greater Irbid Municipality and WRC is to equip a total of 700 informal collectors with official badges by the end of 2026. Based on the process to date, the following recommendations can be made for integrating informal workers into urban waste management:

First, it is important to keep in mind that **the integration of informal waste workers is more about the process, than about a specific model**. Because each city has distinct political dynamics, labour markets and waste streams, the most appropriate models may differ. But the principles of the process are scalable. They include creating a space for joint and context-specific problem-solving through dialogue and iterative action. Frontloading trust and prioritising integration are also largely about the process rather than about any particular model. What is new about them is that they reverse the common and often ineffective sequence for integrating informal workers. Therefore, the next two recommendations focus on them in more detail.

Frontloading trust on the part of the municipality is key. As the more powerful actor, it is the municipality's responsibility to get an exchange process to develop an integration approach going. In it, politicians and municipal waste managers can frontload trust by suggesting issuing official badges and basic safety equipment to workers. The former signals legal recognition while the latter demonstrates a commitment to the worker's importance and dignity. Frontloading trust by the more powerful actor is a precondition for overcoming distrust and creating a space for a commonly developed integration approach that works for both sides.

Prioritising integration over capacity building is essential. Actually, working together can more effectively dismantle prejudices and deficit assumptions than isolated formal training. Especially because informal waste workers often have many years of on-the-job experience, showing what they already can do is an important part of the integration process. Targeted on-the-job training and possibly more general capacity-building can later consolidate and further expand these initial gains.

Institutional arrangements matter. Establishing fora with local government members, informal waste workers representatives, private waste companies, and others like the PDIA working group is important for ensuring inclusiveness and coordination. These platforms can manage competition between actors, align incentives across stakeholders, and strengthen accountability that might otherwise escalate and endanger the entire integration process.

Adaptation requires evidence. Systematic data collection and evaluation (weighbridge records, interviews, household surveys, etc.) are essential to track outcomes and refine practice. Evidence of cost savings and welfare gains also help sustain political support and strengthens the case for scaling. At the same time, public awareness campaigns can reduce stigma and highlight informal recyclers as service providers rather than nuisances, thus making integration more sustainable.

The broader lesson is that for integrating informal waste workers, the approach of frontloading trust and prioritising integration has a lot of potential. Embedded in a structured problem-driven and adaptive dialogue between stakeholders, it can transform relations between municipality workers and informal workers, and their perceptions of each other.

And through this process it has the rare potential of leading to a fourfold benefit: less landfill waste, savings for the municipality, better services for residents, and increased respect, protection and income for informal waste workers.

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