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**A WIN-WIN FOR ALL? THE INFORMAL RECYCLING SECTOR IN URBAN SOLID
WASTE MANAGEMENT AMONG DEVELOPING COUNTRIES**

Abstract

Municipal authorities and academics alike have increasingly recognized not only the informal recycling sector's critical role in urban waste management systems in many developing countries, but also its potential for further enhancing sustainable development in urban cities. Accordingly, a common claim in the literature contends that integration of the informal sector can be a means to produce "win-win" outcomes, including: reducing environmental impact as less waste ends in the landfill, improving efficiency in public service delivery for municipal governments, and enhancing livelihood by supplying income opportunities and employment for the urban poor. This paper interrogates these "win-win" framings of the informal recycling sector, and finds that they serve an instrumental objective in promoting the integration of the informal recycling sector into the state apparatus, which is justified largely through a cost-benefit analysis for managing risks from the perspective of the state. However, this paper illustrates how these "win-win" framings can be problematic when they overlook important prior conditions that allow

recycling to operate successfully and the perceptions of risks and hazards that inform policies that govern the informal recycling sector.

Key words: Informal recycling sector; urban solid waste management

Introduction

Modern institutions and practices around waste in developing countries may reveal somewhat of a paradox: an informal recycling sector often exists, and sometimes thrives in modern waste management, even as municipal governments strive for greater formalization and integration of its public services. While the coexistence of an active informal recycling sector within municipal waste management systems might appear contradictory, municipal authorities and academics alike have increasingly recognized not only the informal recycling sector's critical role in managing waste, but also its potential for further enhancing sustainable development in urban cities. Accordingly, a common claim in the literature contends that a better integration of the informal sector can be a means to produce "win-win" outcomes, including: reducing environmental impact as less waste ends in the landfill, improving efficiency in public service delivery for municipal governments, and enhancing livelihood by supplying income opportunities and employment for the urban poor. This paper interrogates these "win-win" framings of the informal recycling sector, and finds that they serve an instrumental objective in promoting the integration of the informal recycling sector into the state apparatus, which is justified largely through a cost-benefit analysis for managing risks from the perspective of the state. However, this paper illustrates how these "win-win" framings can be problematic when they overlook important prior conditions that allow recycling to operate successfully and the perceptions of risks and hazards that inform policies that govern the informal recycling sector.

Waste management remains a central subject in international discourses around sustainability, as exemplified with the Sustainable Development Goals (SDGs). The SDGs links its goals explicitly with improving waste management under Goal 11 ("Make cities and human settlements inclusive, safe, resilient, and sustainable") and its sixth target, "By 2030, reduce the adverse per capita environment impact on cities including by paying special attention to air quality and municipal and other waste management" (United Nations, 2016). In developing countries, the

informal recycling sector in waste management is generally composed of four types of actors: itinerant waste buyers, street waste pickers, municipal waste collection crew, and waste pickers at dumpsites (Wilson et al., 2009). Their activities include collecting, transporting, sorting, and reselling recyclable waste materials. Together, these actors make up a sizable workforce in managing waste among developing countries, where approximately 1 percent of the urban population (about 15 million people) is estimated to work as waste pickers alone (Medina, 2008). This proportion is notably larger in Asia and Latin America, where about 2% of the population is employed in the informal waste sector (Medina, 2000). The characterization of this sector as “informal” tends to be broadly defined as lacking legal recognition by the state, although their irregularity in income levels, labor time and space, social protection, tenure insecurity, and job instability also define their informal status. While informal waste practices are varied and widespread, the people employed in this sector disproportionately come from poor and marginalized groups. Rather than viewed as a product of modernity, informal recycling tends to carry negative connotations, often widely “regarded as backward, unhygienic and generally incompatible with a modern waste management system” (Wilson et al., 2009, p. 798). While informal recycling work can be means for securing livelihood among disadvantaged groups, their employment in this sector can reinforce their stigmatization, further limiting their mobility to move out of poverty. However, whether participation in the informal recycling sector can contribute to poverty reduction, especially for the vulnerable and/or marginalized, remains debatable and warrants further attention.

The extent to which an active informal recycling sector contributes to environmental sustainability depends on the specific problems and challenges from waste that governments at all scales must address. With rapid industrialization and urbanization, municipal governments must manage the corresponding increase in solid waste production and its substantial environmental costs. These threats to environmental sustainability include emissions of carbon dioxide from waste incineration and of methane from landfills, water contamination due to illegal dumping and improper disposal, and threats to biodiversity from accidental waste consumption (Pariatamby & Tanaka, 2014). Waste management poses a particular challenge for developing nations, which may lack the necessary state capacity to implement and enforce effective policies. In many cases, waste management systems become local governed, and in some cases, privatized as an effort to reduce costs. For activities like recycling, municipal governments may further lack the resources and

incentives to invest in the technology that can facilitate the recycling process. In other notable cases, advanced technological transfers to developing countries for the purpose of improving waste management processes have proven to be unsuccessful (Medina, 2000). Within this context, the informal recycling sector emerges in response to the demands of development, which require intervention in waste management, as well as to an absence in governance, as municipal authorities do not directly oversee recycling activities.

Municipal governments have followed different policy approaches towards the informal recycling sector. Medina (2000) contends that governments tend to adopt public policies that largely fit into one of four categories: repression, neglect, collusion, and stimulation (pp. 57-58). Repression includes the passage of laws to deem informal recycling activities illegal and punishable by the state. Neglect of the informal recycling sector involves ignoring the workers and letting informal activities continue with little to no state interference or intervention. Collusion takes the form of patronage relationships, in which authorities permit informal recycling activities, such as access to dumpsites, in exchange for political support, monetary sum, or other goods or benefits. Lastly, stimulation refers to the authorities' active support of the informal recycling sector, such as policy interventions to better integrate them, such as improving working conditions. However, it is less clear from the present literature which factors and conditions accounts for these divergent public policy outcomes. For example, in a study of Enugu, Nigeria, Nzeadibe (2009) finds that municipal authorities tend to ignore informal recyclers, even though they are aware of the informal sector's presence and activities in their city's waste management. According to the author, this neglect is related to perceptions and attitudes among authorities and the public who do not view informal recyclers as relevant stakeholders in waste management, despite acknowledging the informal sector's contributions to the reduction of landfill waste. However, it is possible that these perceptions and attitudes are as much a cause as it is an effect of policymaking that systematically denies the official recognition and participation of informal recyclers.

The presence of civil society organizations, due to its mediating effect on patronage and political clientelism, may also an impact on policy outcomes in recycling activities for waste management (Medina, 2000; Charuvichaipong & Sajor, 2006). In a multi-country comparison of successful scavenger cooperatives, Medina (2000) contends that non-governmental organizations provide crucial financial, technical, business and legal assistance to cooperatives, as a meaningful alternative source of support for cooperatives to form and organize without having to rely on

traditional forms of patronage support from the state. Without NGO support, members of newly-formed cooperatives are susceptible to clientelistic relationships with the state. If NGO assistance is a mechanism through which informal recyclers can successfully secure assistance and organize without entering a patronage relationship with state actors, then the opposite case would show that the absence of NGO support leads to less successful outcomes from recycling policies. Charuvichaipong & Sajor (2006) provide evidence for the counterfactual case in a study of why a program of waste separation failed in Hatyai, Thailand, due to the absence of autonomous, non-governmental organizations as a prior condition. The lack of autonomy among civil organizations, and a top-down policy approach that excluded grassroots participation in the policy process, were the main contributing reasons to why the local government's waste separation program failed. The authors further found that clientelism and patronage were embedded into the relationships between authorities and the community people, thus hindering public mobilization and reifying the community members' belief that waste management was largely the government's, and not the public's, responsibility. The success and failures in organizing informal recycling workers or community-level waste initiatives thus point to the importance of existing political relationships between local officials, civil society actors, workers, and communities.

More recent literature reflects a growing consensus that the informal recycling sector enhances overall waste management in developing countries: it reduces the costs of municipal government's labor costs and technological transfers, lessens the environmental impact by decreasing the amount of materials sent to landfills, and provides livelihood and employment for the poor. Therefore, many policy recommendations stemming from this consensus argue for greater stimulation, or active support, for the informal recycling sector. This discourse operates around the implied logic that improving the integration of informal recycling sector into waste management systems will create positive outcomes. The language of a "win-win" situation is explicitly used here (a terminology, it should be noted, which has typically been associated with regional development banks.) Academics put forth an instrumental argument through the framing of "win-win" outcomes. For instance, in Wilson et al. (2009), the authors find that recycling rates are generally high in developing countries owing to the fact that the informal recycling sector supports itself with revenues through its own activities and operates almost entirely independent of the formal sector. According to the authors, this situation provides a unique "win-win" opportunity for municipal governments in developing countries:

Current informal recycling systems are saving the formal sector money through reducing the quantities of waste collected for treatment and disposal. The extent of these savings will increase as systems are modernized and costs increase to meet environmental standards. There is a clear potential for “win-win” cooperation between the formal and informal sectors as providing support to the informal sector, to build recycling rates and to address some of the social issues that could reduce the overall costs of waste management for the formal sector. (Wilson et al., 2009, pp. 634).

Policies to integrate of the informal recycling sector are justified on the grounds that it will reduce costs that are expected to rise with increased modernization of waste systems and the need to meet “environmental standards”. It is assumed that an additional benefit of integration would be that “some of the social issues” could be addressed, which would contribute to “reduc[ing] the overall costs of waste management for the formal sector.” As waste management systems modernize, the “win-win” perspective reasons that the integration of the informal recycling sector vis-à-vis the formal sector is a logical step forward, given that the informal recycling sector has already shown to contribute positively to recycling and waste rates. In a way, this “win-win” approach is based on a perceived need to make visible the contributions of an existing and active informal sector. This framing, however, differs with a social well-being perspective that calls for better integration of the informal recycling sector for more sustainable waste management in order to provide better social protection through which workers can autonomously optimize their work and benefits.

Underlying these “win-win” arguments, therefore, are particular perceptions about risks that are associated with urban waste management and with the activities of the informal recycling sector. “Win-win” arguments support a policy move towards risk management to minimize state spending and to minimize the negative effects of risks, such as environmental concerns from non-recycling and high labor costs. The informal sector is seen as more practical, rather than technical, solution. In this framing, those in the informal recycling sector are thus legitimized as an effective actor in reducing the impact of hazards posed by modern waste, and should be better integrated into the state apparatus. Beck’s (1992) concept of a risk society may be applicable here in conceptualizing the informal recycling sector in waste management through its linkage with modernity. According to Beck, “Risk may be defined as a systematic way of dealing with hazards and insecurities induced and introduced by modernization itself. Risks, as opposed to older

dangers, are consequences, which relate to the threatening force of modernization and to its globalization of doubt. They are politically reflexive” (pp. 21). From the perspective of the state, modern waste could be defined as a hazard of industrialization and produced largely through human action. However, there are two tensions when applying Beck’s concept to modern waste management systems from the perspective of the state. First, while state may frame waste as a “hazard”, waste is seen as an economic and livelihood resource from the perspective of waste pickers and all others in waste recycling. Secondly, there is also tension in applying Beck’s concept here, for while the management of solid waste is a contemporary risk, these practices have had a differential impact on the poor in particular. There is a distinctly class-based (as well as gender and race) dimension to solid waste management, and especially in the informal recycling sector, that can be underemphasized in traditional risk analysis.

The notion that the poor disproportionately carries the blame and brunt of risk is discussed at length in Douglas (1992), who departs from Beck’s framework in her contention that risk is not independent from its cultural context through which value is assigned. Douglas defines risk specifically as “not only the probability of an event but also the probable magnitude of its outcome, and everything depends on the value that is set on the outcome. The evaluation is a political, aesthetic, and moral matter” (p. 31). From this perspective, the divergent policies towards the informal work sector across developing countries can be seen as a political choice and a process that is informed by cultural biases. This approach also casts doubt over the use of popular risk analysis tools, which typically convey results in the language of scientific neutrality when assessing the impact of the informal sector on waste management. However, these types of risk models derive from a specific perception of risk, traditionally based on the assumption of the rational individual, rather than a perspective conditioned by culture, morals, and politics.

If the perception of risk shapes the analysis of the informal recycling sector, by this logic, it should also shape policy choices, including how researchers evaluate empirical evidence on waste management to encourage a more integrated, “win-win” approach in governance. For instance, Velis et al. (2012) proposed a new analytical tool for developing countries to integrate their informal recycling sectors into their waste management systems. More comprehensive than previous models, this tool, which the researchers call “InteRa”, includes several different risks posed by the informal recycling sector, which the authors have identified through a literature review, and recommended policy interventions to promote a “win-win” solution. Another example

is a 2007 study on waste management and recycling practices among the urban poor in Kuala Lumpur, Malaysia. In this research, Murad & Siwar (2007) convey the discourse of risk as: “The disposal of waste is a major hazard to the squatters and low-cost flat dwellers because their improper methods of waste disposal make them a high-risk group for contracting infectious diseases” (p. 4). Despite this assertion, however, the authors do not directly examine the impact of waste on public health among the poor, perhaps because such types of studies are longitudinal in nature and difficult to ascertain causality to meet the standards in typical risk assessment. However, this study reveals through a statistical analysis of waste patterns that the disposal practices among poor are not to blame for environmental degradation; in fact, the poor produced a lower volume of waste on average than middle and higher income groups (p. 12). Low-income households were also found to produce better rates at recycling and waste management, often taking an active role as agents due their self-recognition that they are the main users of reclaimed waste products. As such, the authors emphasize the recognition of the poor as a relevant stakeholder in waste management policy-making, who “should be incorporated into the formal sector and be provided with appropriate sanitary working conditions” (p. 12). Importantly, the authors stake a claim for a more integrated approach by changing the narrative around risks from one of poverty as a hazard for the environment, to one in which the environmental risks endanger the urban poor.

How “waste” is interpreted and defined by various actors also inform the subsequent perceptions and attitudes around waste management policies. Returning to the Nzeabide (2009) study discussed earlier, the perception of waste may explain why municipal authorities in Enugu, Nigeria have largely pursued a policy of neglecting or ignoring the city’s active informal recycling sector. According to Nzeabide, “Although scavengers rummage through the landfill to extract valuable materials, they do so at their own risk” (p. 97). This statement is telling in that it highlights the importance of perception, specifically regarding who is to blame— in this case, the informal recyclers themselves— and the resulting implication that they should thus absorb all the risks of their activities. Perhaps given the state’s own limitations to adequately manage its waste challenges, the common response of municipal governments is to assign responsibility back to individuals within society. Formal waste management further depend on framings of waste, and whether it is seen as a hazard or resource. As Nzeabide contends, “Authorities also do not perceive waste as a potential resource as against the informal sector that sees waste as ore – a source from

which valuable materials are extracted” (p. 97). This perception of waste as a risk or resource may explain why authorities pursue a policy of neglect, in which informal waste activities are not seen as providing economic and social value, but through the risk-seeing behavior of informal recyclers, whose consequences lie beyond the purview of the state’s responsibilities and duties.

Alternative frameworks to identify relevant risks also can serve to problematize the assumption that the informal sector provides a “win-win” situation in waste management, especially from the perspective of the urban poor. Looking specifically at the case of waste intermediaries (i.e. those who facilitate the exchange between waste collectors and waste traders) in Hanoi, Vietnam, Mitchell (2009) finds that the economic opportunities provided through the informal sector has mixed implications for the urban poor who work in these types of jobs. Through a series of surveys and interviews, Mitchell presents of a more complicated depiction of informal recycling workers and the risks they experience. Waste intermediaries face increased competition from others in the same line of work, as well as a changing economic due to fluctuating housing and land market prices, placing informal waste recyclers in a precarious position in the urban economy. Price fluctuations in the market and spatial regulations implemented by the state thus render the subjectivities of informal recyclers more vulnerable. Finding evidence of a potential “win-win” situation here through is limited when considering the globalized risks that informal recyclers confront in their work and everyday lives.

The framing of a “win-win” situation can serve as a heuristic in establishing a link between integration of the informal sector and sustainable development. “Win-win” outcomes include reducing environmental impact through less landfill waste, improve efficiency of municipal governments’ waste management systems, and enhances livelihood for the urban poor. Perhaps not coincidentally, these three outcomes map well unto the categories of environmental, economic, and social sustainability objectives as laid out in the Brundtland Report. “Win-win” arguments also serve an instrumental objective that promotes the integration of the informal recycling sector, although it remains unclear which type of integration would be most desirable, and whether there are trade-offs, for instance, between the need to reduce labor costs and the need to improve the health and sanitation of working conditions for informal recyclers. “Win-win” arguments can further be problematic when they overlook important political conditions that enable effective recycling practices to take place, as well as the differing perceptions and knowledge around waste among state agents and informal recyclers, in which the former may see waste as a hazard while

the latter perceives it as a resource. Lastly, this paper identifies some of the limits to “win-win” arguments that see integration as a practical solution, as they often overlook certain types of risk that informal recyclers experience and which may not be captured in the cost-benefit analysis under traditional risk management. These limitations necessitate more research going forward in order to better identify whether these “win-win” framings can indeed produce more synergy around sustainability goals, or whether they mask deeper trade-offs and negative consequences, particularly when the perceptions and experiences of informal recyclers are not taken more critically into account during policymaking processes.

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