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Approaches to formalization of the informal waste sector into municipal solid waste management systems in low- and middle-income countries: Review of barriers and success factors

Sandra Aparcana

UNEP DTU Partnership, Department of Management Engineering, Technical University of Denmark, Marmorvej 51, 2100 København Ø, Denmark

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ABSTRACT

Background and goal: The Municipal Solid Waste Management (MSWM) sector represents a major challenge for low- and middle-income countries due to significant environmental and socioeconomic issues involving rapid urbanization, their MSWM systems, and the existence of the informal waste sector. Recognizing its role, several countries have implemented various formalization measures, aiming to address the social problems linked to this sector. However, regardless of these initiatives, not all attempts at formalization have proved successful due to the existence of barriers preventing their implementation in the long term. Along with this, there is a frequent lack of knowledge or understanding regarding these barriers and the kind of measures that may enable formalization, thereby attaining a win-win situation for all the stakeholders involved. In this context, policy- and decision-makers in the public and private sectors are frequently confronted with the dilemma of finding workable approaches to formalization, adjusted to their particular MSWM contexts.

Building on the review of frequently implemented approaches to formalization, including an analysis of the barriers to and enabling measures for formalization, this paper aims to address this gap by explaining to policy- and decision-makers, and to waste managers in the private sector, certain dynamics that can be observed and that should be taken into account when designing formalization strategies that are adapted to their particular socioeconomic and political-institutional context. This includes possible links between formalization approaches and barriers, the kinds of barriers that need to be removed, and enabling measures leading to successful formalization in the long term.

Method: This paper involved a literature review of common approaches to formalization, which were classified into three categories: (1) informal waste workers organized in associations or cooperatives; (2) organized in CBOs or MSEs; and (3) contracted as individual workers by the formal waste sector. This was followed by the identification and subsequent classification of measures for removing common barriers to formalization into five categories: policy/legal, institutional/organizational, technical, social, and economic/financial. The approaches to formalization, as well as the barrier categories, were validated through the assessment of twenty case studies of formalization. Building on the assessment, the paper discussed possible links between formalization approaches and barriers, the 'persistent' challenges that represent barriers to formalization, as well as key enabling factors improving the likelihood of successful formalization.

Results: Regardless of the type of approach adopted to formalization, the review identifies measures to remove barriers in all five categories, with a stronger link between the approaches 1 and 2 and the existence of measures in the policy, institutional, and financial categories. Regarding persistent barriers, the review identified ones arising from the absence of measures to address a particular issue before formalization or due to specific country- or sector-related conditions, and their interaction with the MSWM context. 75% of the case studies had persistent barriers in respect of policy/legal issues, 50% of institutional/organizational, 45% of financial/economic, and 40%, and 35% of social and technical issues respectively.

Conclusions: This paper concludes that independently of the formalization approach, the lack of interventions or measures in any of the five categories of barriers may lead formalization initiatives to fail, as unaddressed barriers become 'persistent' after formalization is implemented. Furthermore, 'persistent barriers' may also appear due to unfavorable country-specific conditions. The success of a formalization initiative does not depend on a specific approach, but most likely on the inclusion of country-appropriate

E-mail address: sanapa@dtu.dk<http://dx.doi.org/10.1016/j.wasman.2016.12.028>

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measures at the policy, economic and institutional levels. The empowerment of informal waste-workers is again confirmed as a further key success factor for their formalization.

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1. Introduction

Managing municipal solid waste is a big challenge. Inappropriate municipal solid waste management not only causes critical environmental impacts (climate change, environmental and human health damage, biodiversity loss, soil erosion) (Hoorweg and Bhada-Tata, 2012; Cleary, 2009), it also has negative economic and social impacts (Cointreau, 2006; Scheinberg et al. 2010; Lohri et al., 2014). The challenge is greater in low-and middle-income countries, which share several similarities regarding their socio-economic conditions, in particular in having waste management systems that operate to low standards (Wilson et al., 2006, cited by Aparcana et al. 2012; Hoorweg and Bhada-Tata, 2012).

This situation creates the need for alternative ways to handle and dispose of the waste, which has led to the emergence of informal waste activities (called the ‘informal waste sector’). The informal sector contributes significantly to the recycling rates of many cities in low-and middle-income countries, thus reducing the volume of waste deposited in landfills, environmental pollution, creating at the same time local added value through the recycling market and informal employment opportunities (Scheinberg et al., 2010; Wilson et al., 2012). However, despite these benefits, the informal sector is also associated with negative social and economic conditions, such as poverty, bad working conditions, exploitation, discrimination, child labor, social rejection, and lack of education (Wilson et al., 2006; Medina, 2000).

In light of this situation, policy-and decision makers have identified the need to recognize the contribution of the informal sector, while improving their working conditions and socioeconomic situation. For this reason, a variety of formalization approaches have been devised and implemented in recent years. However, the road to successful formalization is not always free of difficulties. Policy-and decision-makers, as well as waste managers in the private waste sector face a variety of barriers to formalization, when designing formalization approaches according to their specific country contexts. There is a lack of understanding regarding the type of barriers arising before and after formalization, the possible measures to eliminate those barriers in the long term, and the

options to structure these enabling measures as formalization strategies. As a result, decision-makers may decide to copy the ‘modernization’ trends applied in high-income countries (Scheinberg et al., 2006; Gutberlet, 2011) or formalization experiences from other countries, without considering the potential differences between their MSWM systems and the situations in those countries, nor the interaction with the informal sector.

The purpose of this paper is to shed light on policy- and decision-makers, and to waste managers in the private sector on the aspects that should be taken into account when designing formalization strategies, including the types of barriers that may be encountered before and after formalization and the enabling measures adopted to address them. Furthermore, it is expected to provide further insights regarding approaches to formalization, associated barriers, and enabling measures; answering the question of whether the occurrence of certain barriers is linked to specific approaches to formalization, or not.

The current paper starts by providing general background information about the informal waste sector in low-and middle income countries, social issues and waste governance towards the informal sector. This is followed by a review of different approaches to formalization, including a categorization of common barriers to formalization. This is subsequently validated through a review of twenty case studies, which are grouped according to their approach to formalization. The barrier categories are used as the criteria for identifying enabling measures applied by the selected cases, towards the elimination of barriers. Based on this assessment, this paper discusses how the enabling measures were conceptualized and combined in each formalization approach, as well as their effectiveness. Furthermore, it identifies the ‘persistent’ barriers that remained as ‘challenges’ to be overcome by formalized MSWM systems, and discusses the feasibility of their removal.

2. Methodology of the review

The study involved a literature review looking at common formalization approaches that have been implemented in low-and

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