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Integration of the informal sector into municipal solid waste management in the Philippines – What does it need?

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ABSTRACT

The integration of the informal sector into municipal solid waste management is a challenge many developing countries face. In Iloilo City, Philippines around 220 tons of municipal solid waste are collected every day and disposed at a 10 ha large dumpsite. In order to improve the local waste management system the Local Government decided to develop a new Waste Management Center with integrated landfill. However, the proposed area is adjacent to the presently used dumpsite where more than 300 waste pickers dwell and depend on waste picking as their source of livelihood. The Local Government recognized the hidden threat imposed by the waste picker's presence for this development project and proposed various measures to integrate the informal sector into the municipal solid waste management (MSWM) program. As a key intervention a Waste Workers Association, called USWAG Calahunan Livelihood Association Inc. (UCLA) was initiated and registered as a formal business enterprise in May 2009. Up to date, UCLA counts 240 members who commit to follow certain rules and to work within a team that jointly recovers wasted materials. As a cooperative they are empowered to explore new livelihood options such as the recovery of Alternative Fuels for commercial (cement industry) and household use, production of compost and making of handicrafts out of used packages. These activities do not only provide alternative livelihood for them but also lessen the generation of leachate and Greenhouse Gases (GHG) emissions from waste disposal, whereby the life time of the proposed new sanitary landfill can be extended likewise.

1. Introduction

1.1. Informal sector situation in developing countries

Although the ultimate responsibility to manage solid waste is a legally prescribed municipal task in most countries, solid waste management (SWM) services are inadequately provided in many municipalities in the developing world. A large portion of residents does not receive waste collection services and most of the disposal sites are poorly operated (Diaz et al., 2007; Ball, 2007; Gonzenbach and Coad, 2007). Formal private sector involvement remains low in general due to various reasons such as insufficient legal guidance, low sector development, restricted funds and lack of know how to sustain waste management services. Hence, in many developing countries waste collection and material recovery activities are taken over by the Informal Waste Sector (IWS) to a large degree. Various studies revealed that the contribution of the informal sector to recover materials from municipal waste is much higher than from formal waste management services in developing countries (Wehenpohl and Kolb, 2007; Medina, 2008; Scheinberg et al., 2010; Gerdes and Gunsilius, 2010; Hetz et al., 2011). The IWS is considered as the most directly vulnerable group in municipal SWM. Informal sector in SWM may refer to individuals, families, and private sector (micro-) enterprises working in SWM services, whose activities are neither organized, sponsored, financed, contracted, recognized, managed, taxed, nor reported upon by governmental authorities (Wiersma et al., 2008; Gerdes and Gunsilius, 2010). Involved stakeholders are waste pickers in dumpsites and at communal waste collection points, informal waste collectors, itinerant waste buyers, small junkshop dealers, and collection crews of garbage trucks.

Many studies worldwide have shown that informal sector recycling activities largely contribute to reduce cost for SWM, provide livelihood for the urban poor, but can also result in positive or negative effects for the environment (SWAPP, 2006; Diaz et al., 2007; Wehenpohl and Kolb, 2007; CWG and GIZ, 2011; Gunsilius, 2011). As SWM systems evolve, privatization and implementation of new SWM technologies can enhance operational and environmental performance of SWM systems, but may restrict the access for the IWS to recover materials out of the waste stream likewise. This

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can threaten their livelihood or displace them into an unknown future. If not addressed properly such changes may create resistance of the IWS and even trigger actions to sabotage new SWM activities that would exclude them (Ball, 2007). Hence, many studies recommended to integrate rather exclude representatives of the IWS into SWM modification programs or envisioned privatization processes at the earliest possible stage (Diaz et al., 2007; CWG and GIZ, 2011; Hetz et al., 2011).

1.2. Local situation in Iloilo City

Iloilo City is the regional capital of the Western Visayas Region. It is the second largest urban growth center in the Visayas with more than half a million inhabitants. The City provides various central services for the region such as banking, schools, university education and hospitals. Iloilo City is one of the most accessible cities of the Philippines, having an airport that connects the city with Manila and Cebu, and having ports that offer boat and fast ferry connections to various larger cities in the Philippines. Fig. 1 shows the location of the study area at the eastern side of Panay Island in the Western Visayas region.

As stated in the municipal SWM plan, around 300 tons of municipal solid wastes are generated every day (Iloilo City, 2006). However, in average only 220 tons/day, respectively 73% of the generated waste is collected by the involved private contractor at present.

According to the local waste ordinance, wastes have to be segregated at source into biodegradable and residual wastes. There is no house-to-house collection system, unless private complaints occur and an exceptional collection has to be made. Householders or domestic helpers have to bring the waste to the local Material Recovery Facilities (MRF) or the collection points of the community on specific days for each kind of waste. A private service provider is contracted by the municipal government to collect the waste daily either from the local MRFs or from the designated collection points and transport the wastes to the only existing dumpsite of the city, which is located around 5 km from the city center at Barangay Calahunan. In past, the municipal waste collection was done by night. Due to low efficiency of the waste collection and to better control the dumpsite operation, the collection time was switched to now 5 am to 8 pm.

The dumpsite is owned by the Iloilo City Government and is operated by the General Service Office. This site has been operated as an open dumpsite and has no collection or treatment system neither for leachate nor for landfill gases. In 2007 the Department of Environment and Natural Resources (DENR) has issued an authority to close the open dumpsite. Subsequently the City Government has started the rehabilitation and development of the dump into a transitional disposal site and is now preparing the construction of the future sanitary landfill.

Although waste segregation at source is mandated, a considerable amount of valuable and sellable materials is still contained in the collected wastes and delivered to the dumpsite where around 300 waste pickers dwell who recover certain materials as base for their livelihood. As much as the waste picking activities and selling of reusable materials enables them and their families to survive, their presence at the disposal site complicates the efforts of the municipality in rehabilitating the same and in implementing new waste management projects. Hence the City government proposed to enhance the management of material sorting and recovery, composting and waste disposal. To integrate local waste pickers into the municipal SWM program, the municipality initiated the formation of a new Livelihood Association, the USWAG Calahunan Livelihood Association Inc. (UCLA) in 2009. Main objective of this measure was to formalize their status as waste workers and to enroll them into skills development programs in order to strengthen them as partner of the municipality.

Fig. 1. Location of study area.

2. Legal framework

The Republic Act 9003, also known as the "*Ecological Solid Waste Management Act of the Philippines*" that came into effect in the year 2001, promotes the paradigm that waste is a resource that can be recovered. It determines that the local government units (municipalities and barangays[1]) are the primary institutions to implement this act, and promotes active collaboration with the private sector and associations working on SWM. It encourages reduction of waste at source, recovery, recycling and reuse of wastes, creating mandatory targets. It called for at least 25% waste diversion by 2006 and increasing values every 3 years thereafter, whereas waste diversion is defined as the portion of materials to be recovered from the public waste collection. To achieve this goal, every barangay has to establish a Material Recovery Facility (MRF), implement segregation at the source as well as collect and process recyclables and biodegradables (Republic of the Philippines, 2001).

While Republic Act 9003 emphasizes the importance of reduction, reuse and recovery, it also prohibits waste picking in segregation areas or disposal facilities, unless the owner or operator allows it. The only way in which the informal sector is directly taken into account is allowing the participation of a representative from a junkshop owners' association in the SWM committees of the barangays. However, the waste legislation also encourages cooperatives and associations that promote or help execute the act, giving the opportunity to integrate the informal sector into SWM.

Other important laws also consider the informal waste sector. The Local Government Code of the Philippines (Republic Act 7160, Republic of the Philippines, 1991) states that municipal governments have to provide basic services and facilities, as well as social welfare to different groups of the population, including waste pickers. Furthermore, the Republic Act 8425 for "*Social Reform and Poverty Alleviation*" created a National Anti-Poverty Commission in order to alleviate poverty and provide micro-finance services, from which waste pickers can benefit.

Although Republic Act 9003 had set targets for waste diversion, composting, material recovery and closure of dumpsites, regulations regarding waste-to-energy options or modern waste

[1] A barangay is the smallest administrative division in the Philippines.