Landfill Working Group

Key Issue

Waste Scavenging at Dumpsites in Economically Developing Countries

Ljiljana Rodic-Wiersma, David C. Wilson and Derek Greedy

Introduction

Waste scavenging at waste dumpsites occurs all over the world and particularly in Africa, Asia, Latin America and parts of Europe. Dumpsites around the world are the workplace of thousands of men, women and children who sort through the waste in search of valuable materials.

This document seeks to highlight the most significant issues concerning waste scavenging at dumpsites. The information is aimed at those responsible for solid waste management in their municipalities. Some relevant publications are listed at the end of the document.

The Need for Integrated Sustainable Waste Management

Addressing the waste management system as a whole has a potential to achieve higher benefits than tackling waste scavenging at dumpsites in isolation. This is due to two main factors: the first being that the dumpsite is just one place where materials are recovered from the waste stream and the second that waste scavengers at dumpsites are part of a larger group of stakeholders with similar characteristics.

Other components of solid waste management systems include waste segregation at source, collection and disposal. As waste scavenging is directly linked (in different ways) to each one of these components, it is important to understand these links in order to identify the existing potential for improvements within the system.

Waste scavengers at dumpsites are part of, what is commonly referred to as, the informal sector in solid waste management. Other informal stakeholders include itinerant buyers of discarded products (from door to door), street waste scavengers (at the kerb-side or from containers) and waste scavengers at transfer stations.

Waste segregation at source

Waste segregation at source is the first and, arguably, the most significant step of the recycling process. If waste is segregated at the point of generation - in households, shops, offices, restaurants, hospitals, construction and demolition activities and other waste generating sources - waste materials are still clean and not mixed with each other, which makes them readily recyclable. Particularly, segregation of non-hazardous municipal waste into wet and dry fractions is important from the recycling point of view, i.e., organic kitchen and garden waste on the one hand and paper, cardboard, glass, plastics and metals on the other hand.¹ In many countries, recyclable waste materials from the dry fraction are often sold to itinerant buyers, whereas discarded products are given away to the needy or sold to some sort of junkshop for repair and reuse. If indeed segregated at source, wet - organic - waste is used in different ways, depending on the local situation: it is either fed to the animals, spread directly on the farmland, composted in the garden, or brought to the neighbourhood composting containers.

¹ Municipal hazardous waste (batteries, paints, solvents, outdated medication,…) form a separate waste stream, which ideally should be segregated for separate collection and proper management.
Waste collection

Unless segregated at source, waste is indiscriminately mixed, after which it is either dumped into the street (to be cleared by the street sweepers) or stored awaiting collection. Waste collection rates in developing countries vary anywhere between 40 and 90%. If existing, waste collection service is provided in a variety of ways. In some places, citizens leave plastic bags containing waste on the street for the kerb-side collection or put them into larger street containers. In others, waste is put in (individual household) containers, which are then emptied by the collection crew. Another option used in some primary collection schemes is that the collector rings a bell and a house member or a servant brings out the waste directly to the collection vehicle (often a tricycle).

Scavengers sort through waste in street containers in search of the valuable materials. In doing so, they often leave the place untidy, which results in an (increased) aversion towards waste scavengers by the citizens.

After temporary storage in containers and collection, waste is transported to the disposal site. Collection crew often sort through the refuse as well. If there is a transfer station in between, waste scavenging takes place there as well.

Waste scavenging at dumpsites

Even where not all the municipal waste is collected and a considerable portion of recyclable materials is collected directly from the households or picked from street containers, waste that reaches disposal sites still contains valuable materials. This makes it attractive for waste scavenging activities.

In their activity of searching for waste materials with economic value, waste scavengers can be without exaggeration described as skilful. They usually specialise in one or two types of materials and are very good at recognising such materials in the waste mound.

Waste scavengers store the materials recovered by sort/type and subsequently sell them to the site operator or to the intermediate buyers who come to the site from the city or to local junkshops that may be located on or near to the dumpsite. The site operator and intermediate buyers usually sell the materials recovered further to the processing businesses, although the intermediate buyers may also do some of the simpler processing themselves. Processing includes cleaning, upgrading the quality, amassing and storing larger quantities, packaging and manufacturing new products or selling the processed waste materials to manufacturing industries.

Waste scavengers at dumpsites, as well as other informal stakeholders, significantly contribute to solid waste management, as they save the municipalities money by recycling materials that would otherwise need to be handled through the formal sector. They also make a positive contribution to resource management through the recovery of valuable materials from the waste stream. They do however also face considerable problems and challenges, which are elaborated below.

Aspects of Relevance for Waste Scavenging at Dumpsites

Although our focus is on waste scavenging at dumpsites, many of the comments in the discussion that follows may also apply to the entire informal recycling sector.

Economic aspect

From the perspective of the waste management system, it can be stated that in developing countries the informal sector is effectively subsidising the formal sector, by significantly reducing the amount of waste that the formal service providers are managing. Furthermore, the activities informal sector contribute to preservation of natural resources by diverting waste...
from dumpsites back to material cycle. Therefore, there is an opportunity to build on the existing recycling networks and increase the current recycling rates in a cost-effective way through co-operation between formal and informal stakeholders. If treated as a valuable business partner, waste scavengers and informal sector as a whole can significantly increase their contribution to the protection of the (urban) environment and sustainable management of natural resources.

From the scavengers’ perspective, waste scavenging activities provide a valuable – and often the only – source of income for waste scavengers and their families. At that, waste scavengers face numerous challenges.

In developing countries, any activities of recovery of waste materials from the waste streams and their recycling into new materials and products are motivated purely by economic reasons, i.e. market demand for the recovered materials. Consequently, waste scavengers, and the informal sector in general, always work in accordance with market developments. For the same reason, they are also very vulnerable to the fluctuations. Further, if there is only one buyer at the site, waste scavengers receive very low prices for their materials, which results in them often being exploited. (For some site operators, buying recovered waste materials from waste scavengers and selling them on is one of the main sources of income and they will attempt to maximise it.) In addition, waste scavengers at dumpsites usually depend on the intermediate buyers for the transport of the materials to the end-users.

Social and institutional aspects
Waste scavengers, particularly those at dumpsites, are a very vulnerable social group and are often held in low esteem by others in society. This is due to an array of complex and interconnected reasons. Firstly, they often belong to disadvantaged and marginalised social groups such as the lowest caste, ethnic minorities, and impoverished migrants from the countryside. As such, they are uneducated and, until recently, have largely been unaware of the basic rights they have as citizens. Among disadvantaged and marginalised social groups, women and children are in a particularly vulnerable position. Secondly, they deal with waste; in many cultures, handling of waste is regarded as the lowest possible activity on the social ladder - the activity with the lowest social esteem. Thirdly, due to their informal status, they are not entitled to any protection of their economic interests by law.

Public policies and attitudes towards waste scavengers are mostly negative. They range from open repression and police harassment, through to simply ignoring their existence and through to collusion (where they are tolerated, in return for bribes or support of political parties).

Notwithstanding the above, there have been some positive experiences regarding institutional and legal aspects in e.g. Brazil, Egypt and India in organising waste scavengers in cooperatives and associations. These organisations represent their interests in negotiations with local authorities and the private sector.

Waste scavengers increasingly receive support and guidance from local non-governmental organisations (NGOs), sometimes in co-operation with international aid organisations. The NGOs may be focused on various issues such as poverty alleviation, empowerment of women, empowerment of disadvantaged and marginalised social groups such as ethnic minorities, elimination of child labour, environmental protection and other. In some cases,

2 In developed countries, governments often intervene by placing legal (and financial) responsibility with manufacturers and/or by providing subsidies and other economic incentives to other stakeholders in the system.

3 For example, when a ship with waste paper from Europe enters a port of Mumbai, the price of local waste paper drops immediately.
waste scavengers get support from religious charity organisations. For example, the Zabbaleen in Cairo receives support from their Orthodox Christian Coptic Church; the waste scavengers at Payatas waste dumpsite of Manila receive support from the Catholic Church.

**Occupational health and safety aspect**

The occupational safety of waste scavengers, particularly at dumpsites, is very poor. Waste scavenging commences already during the unloading of lorries. The sight is not uncommon of young men climbing on the waste being unloaded from the lorry with the trailer still raised in the tipping position. Often, there are machines present at the site to spread (and compact) the waste. Waste scavengers search through high piles of waste in the close proximity of machines. There is a constant potential for injury from slips, trips and falls. As scavengers hardly ever use any protective clothing such as boots, gloves and masks, they often get cut by sharp objects like needles and broken glass, as well as bitten by dogs and rats. In addition to the safety issues mentioned, there are frequent incidents of violence as well.

In terms of health risk analysis, waste scavengers are exposed to numerous hazards: various hazardous substances including infectious waste from hospitals, smoke and fumes from burning waste, unhygienic conditions in general, as well as harsh weather conditions. In addition, they spend most of the time working in a bent position, which is bad by any ergonomic standard. The consequences of such practices are obvious and well documented: waste scavengers suffer from chronic backache, coughs and general weakness. Their skin and eyes are irritated and infected. They often have diarrhea, parasites and hepatitis. In addition, scavengers live under inadequate conditions (often at the dumpsite where they work) and lack access to healthcare provision and social security.

**Potential for improvement**

**Potential for improvement in different components of SWM systems**

There is a common agreement among practitioners that integrating existing informal recycling activities alongside the operations of formal municipal solid waste management systems has a potential to achieve benefit for all involved. Putting efforts in promoting and facilitating materials recovery would not only benefit waste scavengers at dumpsites and the informal recycling sector as a whole, but would contribute to better solid waste management and more sustainable resource management practices, as well as potentially reducing the costs that the formal sector would otherwise have to meet (by reducing quantities of waste for collection and disposal). In the process of integration, it is advocated that a partnership approach, where informal sector stakeholders are seen as a legitimate partner, with a very tangible contribution to the performance of urban solid waste management systems. Subsequent steps include identifying common interests as well as the key strengths and contribution of each partner, and then negotiating the terms of co-operation, much like in any other area of economic activity. By building on the strengths of the existing formal as well as informal collection, materials recovery and recycling activities, such a joint effort could constitute a significant step up the hierarchy of waste management options, diverting waste away from disposal and developing in the direction of more recycling and other sustainable practices.

Encouraging waste segregation at source by the citizens and other waste generators would provide an opportunity to the informal sector to collect or buy valuable clean materials at this early stage in the system, rather than recovering them from the mixture at the dumpsite. This may attract at least some of the waste scavengers to work in the city rather than at the dumpsite. This would also improve the potential for recycling and other useful applications of the recovered materials, and thereby increase their economic value.
Although the complaints are common about the lack of interest of the citizens in waste segregation at source, experiences in many places actually suggest that there are considerable amounts of segregated waste materials. Furthermore, there is evidence that citizens are willing to segregate waste at source, provided that the activity is convenient, they are well informed, and activities of other stakeholders are visible to them.

Based on some very successful experiences in several countries, it is advisable to undertake pilot scale projects in selected neighbourhoods, where waste segregation into wet (organic) and dry (other) recyclable waste materials is introduced, with subsequent sorting of the dry fraction at transfer stations. Dry waste, containing valuable materials, can be readily sorted into various materials for recycling purposes. This may also be a more attractive option for some of the waste scavengers than working at the dumpsite.

Potential for improvements in economic position

Stakeholders such as NGOs may be in position, through their involvement with the informal sector, to accomplish that the economic position of waste scavengers at dumpsites and other informal stakeholders is protected. NGOs can do that through e.g. negotiation with other stakeholders in the system to secure some minimum prices for the materials recovered, or through close monitoring of the developments in the pertinent (e.g. environmental) legislation that could indirectly affect scavengers. In addition, NGOs may be instrumental in facilitating the linkages between the informal sector and stakeholders such as universities or manufacturers who could provide insight into potential markets for specific recycled products. Local authorities may support these efforts of the NGOs, regardless of whether the municipal department is directly involved in providing services or not. This is because the ultimate responsibility for solid waste management as part of environmental management in the city rests with the local authorities in most countries.

Regarding the scavenging at dumpsites, in some places site operators organise the trading activities between waste scavengers and buyers in such a way that different buyers come to the site at different, pre-arranged days of the week, so as to streamline the exchange and to avoid potential conflicts. At that, measures to secure alternative source of income in order to eliminate the need for child labour ought to be identified and applied.

Central governments or their agencies may opt to control the recycling market and protect the existing stakeholders by regulating the access of new one. (This would resemble control practices that governments deployed in a number of industrialised countries some twenty or thirty years ago, when involvement of private sector in recycling began to intensify.)

In the process of upgrading operations at the local dumpsites, site operators sometimes offer regular employment to site scavengers in waste sorting, in order to integrate them into the formal solid waste management system. However, the experiences have not universally been positive: in a number of cases (e.g., in some of the Balkan countries and in Turkey), scavengers have declined such offers, with the argument that they prefer to determine their working hours and be their own boss. Such a response has, in turn, precipitated frustration and disappointment on the side of the operators involved. This could have been avoided if an open, participatory approach had been taken - seeking common grounds for co-operation based on dialogue rather than prescribing solutions based on untested assumptions about what is best for the other.

Potential for improvements in occupational health and safety

---

4 As scrap metal is particularly popular for theft around the world, some municipal authorities have negotiated with metal industry to accept scrap metal only from waste pickers who are in possession of a special identification card.
Similarly, public or private site operators can considerably improve the situation of the waste scavengers at dumpsites in terms of their occupational health and safety. Provision of protective clothes and equipment, as well as some form of water supply at the site, constitute an obvious step forward in improving the working conditions of waste scavengers. In addition, a roofed facility for waste sorting could be considered, with conveyor belts or tables at waist height, where all the municipal solid waste is delivered for sorting and the residues then sent onto the dump. Prior to taking any concrete action, however, an open discussion with the waste scavengers ought to take place, in which they can communicate their needs as they perceive them. Otherwise, the newly constructed sorting hall may remain unused while waste scavenging continues at the waste mound as before.

Potential for improvements in social and institutional position

Identifying NGOs and other organisations that provide support to waste scavengers at the dumpsite or in the city, benefiting from their experience and teaming up with them, can provide a suitable channel of access and co-operation between the formal stakeholders in solid waste management and their informal counterparts. NGO representatives are also aware of the possible internal structure and hierarchy within the waste scavengers’ community, which need to be observed in one way or the other in all discussions and negotiations.

It is worth mentioning that the NGOs that take interest in waste scavengers pursue various approaches, varying from an oversimplified charity approach, trying to “help” them, to empowerment approaches trying to improve their social position and legal status, to the recent partnership approach. There is evidence that elements of empowerment approach may still be useful for the waste scavengers, if focused on providing relevant information that they otherwise may not be aware of nor have access to.

The process of establishing co-operation between formal and informal stakeholders for the benefit of the solid waste management system, has a potential to improve social position of waste scavengers as well. More information, interaction and communication could contribute to alleviate some of the prejudices and narrow the gap between waste scavengers and the rest of the society. (For example, common citizens are often genuinely surprised to learn that many waste scavengers support their children to pursue higher education.) To this end, local authorities may educate waste scavengers to contribute to the city cleanliness, rather than leaving the surroundings of street containers untidy. In addition, in educational campaigns to raise public awareness about waste segregation, local authorities may choose to portray individual (or groups of) waste scavengers and highlight their role and contribution to the city cleanliness, the environment and sustainability.

Conclusions

Waste scavenging activities at the dumpsites are best addressed within an integrated sustainable waste management system, rather than in isolation from other components such as waste segregation at source, collection and disposal services. Waste scavengers are skilled workers and legitimate economic stakeholders in the materials recovery and recycling process. If treated as a valuable business partner, whose activities complement the modern concern for preservation of natural resources, waste scavengers and informal sector as a whole can significantly increase their contribution to the protection of the (urban) environment and sustainable management of natural resources.

Communication and co-operation among responsible local authorities, private companies that provide solid waste collection and disposal services, relevant NGOs, the informal sector and the citizens can be very fruitful for all parties. Identifying common interests and complementarities of the services that various stakeholders provide and matching them to the
urban needs may result in benefits for all involved. The benefits are manifold: improved performance of solid waste management efforts, significant contribution to sustainable resources management, as well as better economic and social situation in the cities.

**Literature**


