Informal sector participation in solid waste management – study case: Cluj-Napoca, Romania

Ioana N. Pop, Călin Baciu, Cosmin Briciu, Valentin Tofana, Nicoleta Bican-Brişan

Abstract. Waste management is one of the most challenging issues that local authorities in developing countries are facing. An additional challenge in this domain is given by the presence of the informal recycling sector represented by the so called “waste pickers” or informal recyclers. Although there are various studies referring to the implication of the informal sector in solid waste management, there is no official data to confirm its magnitude. This is also the case of Cluj-Napoca, Romania where public authorities tend to ignore the existence of the informal recycling sector when it comes to planning waste management system, especially because there is no quantitative information and an analysis of the actual role of this sector. Therefore this paper focuses on presenting the implications of the informal sector in the solid waste management systems by bringing into attention the results of an international study performed in 2006 and updated in 2010 on the economic aspects of the informal sector in solid waste management, which was developed in 6 cities around the world, one of these being Cluj-Napoca. Related aspects to the influence of the informal recyclers need to be carefully taken into account in the near future in order to properly plan an effective waste management system, involve all relevant stakeholders and achieve a sustainable and efficient system.

Key Words: informal recycling sector, scavenging, solid waste management, waste management planning

Aims and background. Briassoulis (1999) characterised the informal sector as being: “universal, flexible, created by problems in formal sector, composed by players that are invisible most of the time, not regulated by formal institutions and difficult to assess its size and control”. Moreover, Scheinberg et al (2010) defined the informal waste sector as “individuals or enterprises who are involved in private sector recycling and waste management activities which are not sponsored, financed, recognised, supported, organised or acknowledged by the formal solid waste authorities, or which operate in violation of or in competition with formal authorities”.

According to international agencies like the Global Alliance of Waste Pickers it is believed that millions of people worldwide earn their living from recycling waste (ISWA 2012; www.globalrec.org; www.wiego.org). It is difficult to estimate a total number as waste pickers are mobile and their population may fluctuate according to fluctuating prices of the materials (www.giz.de) and waste streams that become interesting to them due to development of Extended Producer Responsibility (EPR) schemes or market demands. Furthermore, they usually avoid researchers, fearing information will be passed on to public officials or that others will try to benefit from their activities.

There are many studies reporting informal recycling sector involvement in waste management, especially in developing countries but not only; unanimously, it all show that activities in this sector are performed by poor and marginalized social (Chi et al 2011; Gomez et al 2009; Sharholy et al 2007; Wilson et al 2006).

In Romania, as in many developing countries, waste with economic value is largely recycled also by the informal sector. There is a certain degree of awareness among Cluj-Napoca local authorities regarding the existence of the informal recycling sector but this aspect is not taken into consideration in the planning process.

For example, the Strategy for Sanitation Services including waste management implemented by the Local Council Decision no. 52/22.12.2014 does not refer to any measures regarding the integration of informal recycling sector and does not acknowledge its implications. From this point of view the local strategy is limited at seeing the existence of informal waste recycling sector as one of the disadvantages of the actual waste collection system that is not properly secured. It states that the actual
waste collection system facilitates vandalising of the collection bins, waste pilfering and scavenging causing nuisance and other disadvantages.

However, it would be difficult to consider the informal recycling sector into the waste management planning process since there is no quantitative information and an analysis of the actual role of this sector at local level.

Therefore, this paper aims at presenting the role and implications of the informal recycling sector, analysing in detail its activities in Cluj-Napoca by bringing into attention the results of an international study performed in 2006 and updated in 2010 on the economic aspects of the informal sector in solid waste management, in Cluj-Napoca. Finally, the paper proposes to raise awareness on the importance and benefits of integrating the waste recycling sector within the formal waste management system.

**Informal sector review in Cluj-Napoca.** Although local authorities are responsible for the solid waste management in Cluj-Napoca, and officially, the collection, transport, treatment and deposition of waste are, for the moment, delegated to two private sanitation companies, there is an active informal recycling sector represented by: (1) street pickers (Figure 1) that sort waste from waste bins or pilfer waste that is already sorted in special waste containers for packaging waste located on public domain, (2) door to door collectors or itinerant waste buyers that go to households or even economic agents and ask for waste materials as donation or for a low price and (3) landfill pickers that collect waste from Pata Rât Municipal Landfill (Scheinberg et al 2010).

![Figure 1. Street pickers in Cluj-Napoca (Photos: Nicoleta Pop).](image)

This situation is about to change, as many of the landfill pickers will tend to move their activity into the town and become street pickers and door to door collectors since the old Pata Rat Landfill will has to be closed and a new Sanitary Landfill with restricted access to be opened from 2016. This could lead to health and security problems as reported in Turkey, in similar cases (Mete 2014).

Economic implications of waste recycling sector in solid waste management in Cluj-Napoca were analysed in 2006 and updated in 2010 through an international study performed by several national and international experts within a project financed by GIZ (Scheinberg et al 2010). According to this study, in 2010 there were an estimated number of 2,366 street pickers that collect approximately 4,600 tons of recyclable materials per year, 400 itinerant waste collectors that mostly collect metals, and an estimated number of 793 permanent dump pickers that recover around 12,230 tons annually.

According to the study estimation, the quantity of waste recovered annually or diverted from landfilling through the informal sector represented 8% of the total waste
produced in Cluj-Napoca, meanwhile through formal sector there are recovered 8,900 tons annually, equivalent to 5% of the total quantity of generated waste. Furthermore, this situation is similar in all studied cities: Cairo, Lima, Lusaka, Pune and Quezon City. Table 1 presents an overall comparative situation in terms of recovered quantities in informal and formal sector activities in the studied cities including Cluj-Napoca.

<table>
<thead>
<tr>
<th>City</th>
<th>Formal sector</th>
<th>Informal sector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tonnes</td>
<td>Percent of total</td>
</tr>
<tr>
<td>Cairo</td>
<td>433,200</td>
<td>13%</td>
</tr>
<tr>
<td>Cluj-Napoca</td>
<td>8,900</td>
<td>5%</td>
</tr>
<tr>
<td>Lima</td>
<td>9,400</td>
<td>0.3%</td>
</tr>
<tr>
<td>Lusaka</td>
<td>12,000</td>
<td>4%</td>
</tr>
<tr>
<td>Pune</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>Quezon</td>
<td>15,600</td>
<td>2%</td>
</tr>
</tbody>
</table>

The study performed in 2010 also highlights the fact that while the formal sector puts the accent on collection, transport and landfilling with high operating costs; the informal sector only focuses on recycling and recovering with low operating costs and high efficiency. Furthermore, this fact is highlighted by the fact that in informal recycling sector activated 10 times more persons than in formal sector. However, this is not a singular case. In Cairo, for example, there are 5% more persons working in informal waste sector than in the formal sector (Scheinberg et al 2010; Gunsilius et al 2011).

Thus, in terms of waste recycling and recovery but also in terms of costs, the informal sector is much more effective than the formal sector (Scheinberg et al 2010; www.expra.eu). Despite this situation, activities regarding the integration of informal recycling sector in solid waste management, no activities were performed by Cluj-Napoca authorities.

Results and Discussion. Although not taken into consideration by local authorities, different stakeholders involved in waste management are interested, and start to pay attention to the informal recycling sector. Aspects related to the IRS, challenges, implications, possible approaches and solutions that can be adopted were taken into discussion starting from 2009, when the international workshop “Planning in the Real World, Challenges of Sustainable and Affordable Modernization in the Solid Waste Sector” was held in Cluj-Napoca, and recently in 2014 within the Symposium on “Challenges to separate collection systems for different waste streams - barriers and opportunities” organised in Bucharest (www.expra.eu).

The most important conclusions from these events were formulated as it follows:
- the informal sector should be integrated in the national legislation and directives at European Union level;
- since there is no uniform solution for solving this issues, more solutions should be tested according to local specific conditions;
- the contribution to the overall waste recycled quantities should be recognized and find solutions to be statistically visible;
- the formal waste sector and also the informal sector should be more flexible;
- stakeholders should continue gathering data on informal collection www.expra.eu.

There are positive aspects related to informal waste recycling system referring especially to landfill pickers, and door to door collectors, but also some aspects that could be perceived as negative referring to some activities performed by street pickers. All these need to be examined in order to understand the whole system and to be taken into consideration in waste management planning.
On the one hand, positive aspects are related to (1) high waste recycled quantities with little resource consumption by landfill pickers that work in hard and unhealthy conditions and also related to (2) mitigation of environmental pollution and all environmental effects that derive from it.

On the other hand the negative aspects are related to health and social problems associated with these activities but also the conflict with formal waste system such as: pilfering already selected waste from the bins destined to packaging waste collection, destroying waste collection infrastructure belonging to the formal sector and scavenging or cherry picking.

Furthermore, the informal recycling sector “accomplishments” are often not reported to authorities responsible of waste management, therefore they are not statistically visible, excepting cases in which recyclables are delivered to authorised companies that have to report their activity. Moreover, this activity also causes prejudices to economy since is a tax free activity. Thus, at a higher level, when informal sector is involved, and their implication is unknown by authorities, waste management system is less organized and characteristics that help planning the system, such as: waste composition, waste generation indicators, quantities of recycled waste, etc. can only be estimated.

In order to minimize the negative impact in relation to the formal waste management, the Romanian Government has developed new regulations that target to exclude the informal recycling sector, especially street pickers that sort waste from waste bins or pilfer waste that is already sorted. Therefore, according to Sanitation Law 99/2014, that currently regulates waste ownership, informal recycling sector is considered illegal since extraction of materials from waste containers is considered theft and can be prosecuted. According to this law, local authorities are owners of waste stored in bins that are located in public areas, and only economic agents contracted by local authorities are allowed to manage it (O.M. 505/2014). Hence, this regulation can represent a first step towards reducing the negative impact of street pickers and it only needs to be implemented. However, when discussed about informal recycling sector, stakeholders involved in waste management agree that the solution is the integration of the sector not exclusion through legal grounds.

Moreover, undertaking measures related to gathering data and quantitative information on informal waste sector needs to be carefully taken into account in the near future in order to properly plan an effective waste management system and involve all relevant stakeholders including the informal sector.

Hence, the conclusion is that the informal recycling sector should be involved/integrated within labour market from social reasons, but also from environmental reasons, to avoid parallel waste management systems and futile competition (Ecorom Ambalaje 2014). Therefore, with the active implication also of local authorities, the informal sector should become a partner in the separate collection system, develop their own businesses or become employees of the licensed companies as they already have experience and know-how but should work in decent conditions and their work should be legalised.

Conclusions. The informal recycling sector has to be taken into account when developing solid waste management strategies, programs and plans as it represents a positive aspect in social and environmental terms, for a proper waste management system. In many cases, the informal sector is more efficient and may collect more recyclable materials than the formal system. Therefore, increasing involvement of local public authorities and other stakeholders regarding this topic is required.

The study could represent a starting point for updating the quantitative parameters on the contribution of the informal recycling sector in waste management and clearly understand its implications, its benefits, and provide viable recommendations for the future, like integration or formalising this sector.

By engaging the informal sector in valorisation activities, public authorities can create social benefits and indirect economic benefits for the municipality and the city. Working with the IRS can be performed under a private sector participation (PSP) or
public-private partnership policy or strategy for Cluj-Napoca following proposed interventions or policy changes that need to be performed in order to avoid negative impacts.

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References

Local Council Decision no. 52/22.12.2014 regarding the approval of the development and functioning of the sanitation services and waste management in Cluj-Napoca.
Mete I., 2014 Challenges to separate collection: the case for Turkey. Oral presentation at the Symposium “Challenges to separate collection systems for different waste streams - barriers and opportunities”, October 9, 2014 Bucharest, Romania.
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