

BELO HORIZONTE SELECTIVE WASTE COLLECTION PROGRAMME – SOCIAL INCLUSION FEATURES¹

By **Sônia M. Dias**², WIEGO Waste Sector Specialist

BACKGROUND

Belo Horizonte has a strong and extensive tradition in municipal planning. Waste management has been a municipal priority and concern since 1900. In the last few decades the City has been at the centre of solid waste management development in Brazil particularly regarding its approach to integration of the informal recycling sector.

The *Superintendência de Limpeza Urbana (SLU)* was created in 1993. This Public Cleansing Authority (SLU) has by municipal law the prime objective of the exclusive execution of all solid waste management services (sweeping, collection, disposition, treatment and transformation of garbage) for the entire City of Belo Horizonte, including the sale of its services, products and by-products.

SLU includes the following products as municipal urban solid waste:

- a) domestic solid waste;
- b) public solid waste (from public sweeping services, public gardens etc);
- c) solid waste from health care services;
- d) waste from construction and demolition activities;
- e) segregated collection.

Domestic waste is defined as waste generated by households, as well as waste with similar characteristics generated by commercial establishments, institutions, and industry. The percentage coverage of municipal collection of domestic waste is 95%.

Prevention, reuse and recycling goals form the basis for recovering nearly 150 000 tons of waste annually through a mixture of innovative approaches and activities. More importantly these approaches and activities have led to the development and consolidation of a well organized informal sector. Since the adoption of an integrated solid waste management model in 1993, the recovery of recyclables has formed a permanent pillar of the waste management system in Belo Horizonte.

Recycling activities have concentrated on two of the four main urban waste streams, namely domestic solid waste and construction waste. The main feature of these recycling programmes is the integration of two categories of informal workers: the waste pickers (*catadores*) of recyclables and the informal collectors of debris (*carroceiros*). Organizations of the informal workers (*catadores* and *carroceiros*) together with representatives of the municipality and other organizations of the civil society are convened in a stakeholder forum – the Municipal Waste and Citizenship Forum.

¹ Source: This case was drawn mainly from Sonia Dias' field notes and from "Belo Horizonte City Presentation" by Sonia Dias, Jereoen Igosse and Raphael T.Barros taken from WATSAN 2010, UN HABITAT. Special thanks to Demetria Tsoutouras for reviewing it.

² Sonia Dias is a sector specialist for WIEGO – Women in Informal Employment – Globalizing and Organizing.



Collected materials sorted by type. Source: Demetria Tsountouras

I. RECYCLING OF NON-ORGANIC MATERIALS FROM DOMESTIC WASTE

Non-organic recyclable materials are recovered by the municipality from the domestic solid waste stream through three main channels: a) drop-off system; b) curb-side segregated collection of recyclables in residential areas; c) door-to door collection to non-residential generators.

All collected materials (mainly plastic, glass, metals and plastics) are brought to warehouses of waste pickers' cooperatives where they are processed before moving up the recycling chain. All cooperatives have scales, personal protection equipment, and big bags. Some have shredders and fork lift trucks. The cooperatives are the final beneficiaries of sales. Materials are sold

to industry in Belo Horizonte or within the State of Minas Gerais. Revenues from sales are split amongst associates.

This *official integrated recycling system* involves a combination of formal and semi-formal sector (coops) through the three main channels described above and **FURTHER** described below:

a) Drop-off system

This system consists of 150 delivery sites distributed throughout the city – locally known as *Local de Entrega Voluntaria* (LEV) – where the population can deposit



Drop-off receptacles. Source: SLU files

recyclables on a voluntary basis in dedicated containers for plastic, paper, metals and glass. A total of 450 containers are emptied weekly by the *SLU* staff and the materials are transported to the same warehouses for further handling. Since the introduction of the system in 1993, 60-140 tons are collected in this way per month. The 1,300 tons collected through this system in 2008 represented 13% of all collected recyclables. One down-side of the system has been the high incidence of damage to recycling containers mainly by non-organised waste pickers searching for recyclables.

b) Curbside collection system of recyclables by SLU

The *SLU* started this system in 2003. The system has increased its target population from 80,000 persons in 2003 to 148,000 persons in 2008, when 3,900 tons of recyclables were collected either directly by *SLU* or third parties contracted by *SLU*. Initial focus was on Central and South sectors of the city where presence of recyclables was higher, according to the *SLU* "Waste Characterization and Generation Studies" carried out in 1985, 1991, 1995 and 2003. The collected materials are taken to warehouses run by cooperatives of semi-formal waste pickers where the materials are further processed, after which they are sold to industry.



Curbside collection by the Municipality. Source: SLU

c) Door-to-door collection of recyclables by cooperatives from non-residential generators



ASMARE member using a push cart for transport of sorted materials. *Source: Sonia Dias*

Two of the eight cooperatives of waste pickers integrated in the municipal recycling scheme collect recyclable materials from commercial establishments and offices, especially in downtown Belo Horizonte, using push-carts. One of these – ASMARE – has its own carpentry workshop where carts are made and or repaired.

In addition, recyclables are collected from larger generators such as industries and public offices using vehicles owned by the cooperatives. In both cases, the collected material is taken to warehouses for further handling. In 2008, 5,100 tons were collected through the cooperatives, 52% of all collected recyclables.

Sorting of Recyclable Waste

Collected recyclable waste materials are brought to the recycling warehouses of one of the eight waste pickers' cooperatives, where the materials are sorted, baled, shredded, packaged, and stored. Most recycling



Coopersoli Barreiro recycling warehouse – ramp leading to discharge area for recyclables. *Source: SLU*

warehouses function in areas that were adapted to the activity and therefore are not always suitable for this type of activity. New warehouses are being built properly designed for recycling activities with mechanical discharge and sorting systems, better suited for waste pickers' requirements.



Coopersoli Barreiro recycling warehouse – sorting devise. *Source: SLU*

2. RECYCLING OF CONSTRUCTION AND DEMOLITION WASTE

By law management of construction and demolition waste in the City of Belo Horizonte is the generator's responsibility. However, due to environmental problems caused by the illegal dumping of debris the municipality of Belo Horizonte through its Public Cleansing Agency (SLU) decided to implement, in 1997, the *Environmental Recovery and Recycling of Civil Construction Wastes Programme* in an effort to combine promoting income generation and preservation of urban environment. A special feature of the Programme is the integration of informal collectors of construction and demolition waste called *carroceiros*.

Collection and Transport

Carroceiros use horse-drawn carts to transport collected construction debris. Formerly, most of the construction waste collected would be disposed off in illegal dump sites, attracting additional illegal dumping



Unloading debris. Source: Leslie Tuttle

of ordinary domestic waste and causing negative environmental impacts. In 1994, a municipal survey identified 134 of these illegal dump sites. From the outset of the program, the Municipality has provided awareness-raising training to these 400 *carroceiros* on the negative impact of their activities, has organized and registered them. Now citizens have access to this municipal registry and can call upon their services for the removal of construction waste, tree pruning remains or even old furniture. Households pay directly to the *carroceiros* a fee per trip (8-12 US\$) to transport this special waste to the designated reception units.

This Programme has three main components:

- a) The **Social component**: - involving support and/or organization of cooperatives of informal debris collectors; legal allocation and authorized provision of 29 *URPV* decentralized reception units³ for small quantities of debris (and tree pruning waste and others). No domestic waste is accepted by the *carroceiros* or at the *URPV*'s.
- b) The **Technical component** – implementation of three civil construction recycling units that receive construction waste from the decentralized reception units, from the public sector construction activities, as well as large private constructors that have “separation at the source” programs at the construction and demolition sites. In 2008, the three units together received and processed 132.934 tons of construction debris attributing to 15% processed of this waste stream and 6.5% of all processed waste. The remaining construction waste goes to the sanitary landfill operated by the municipality of Belo Horizonte. Tree pruning waste is transported to a small composting facility (capacity of 20 tons/day) at the municipal waste treatment centre where it is co-processed using a window composting technology with organic waste collected from supermarkets and open vegetable markets. The entire process is closely monitored and quality control allows for a final product suitable for agricultural use. In 2008, 2300 tons were processed, 1400 tons from markets etc, and 900 tons from tree trimmings. The nearly 900 tons of compost produced last year were used in the landscaping project of the landfill; and absorbed by the municipal nursery and public gardens.

³ These units *URPV*, *Unidades de Recepção de Pequenos Volumes*, or Depots for receiving small volumes of bulky waste receive up to 2m³ daily.

- c) The **Veterinary component** – Through the partnership with the Veterinary School of the Federal University of Minas Gerais, the *carroceiros* receive animal health care assistance for their horses (vaccination and medical care). In addition, the horses are registered and brand marked. In order to improve the traction and drawing qualities of the horses, the University has also developed genetic improvements of the different horse breeds.

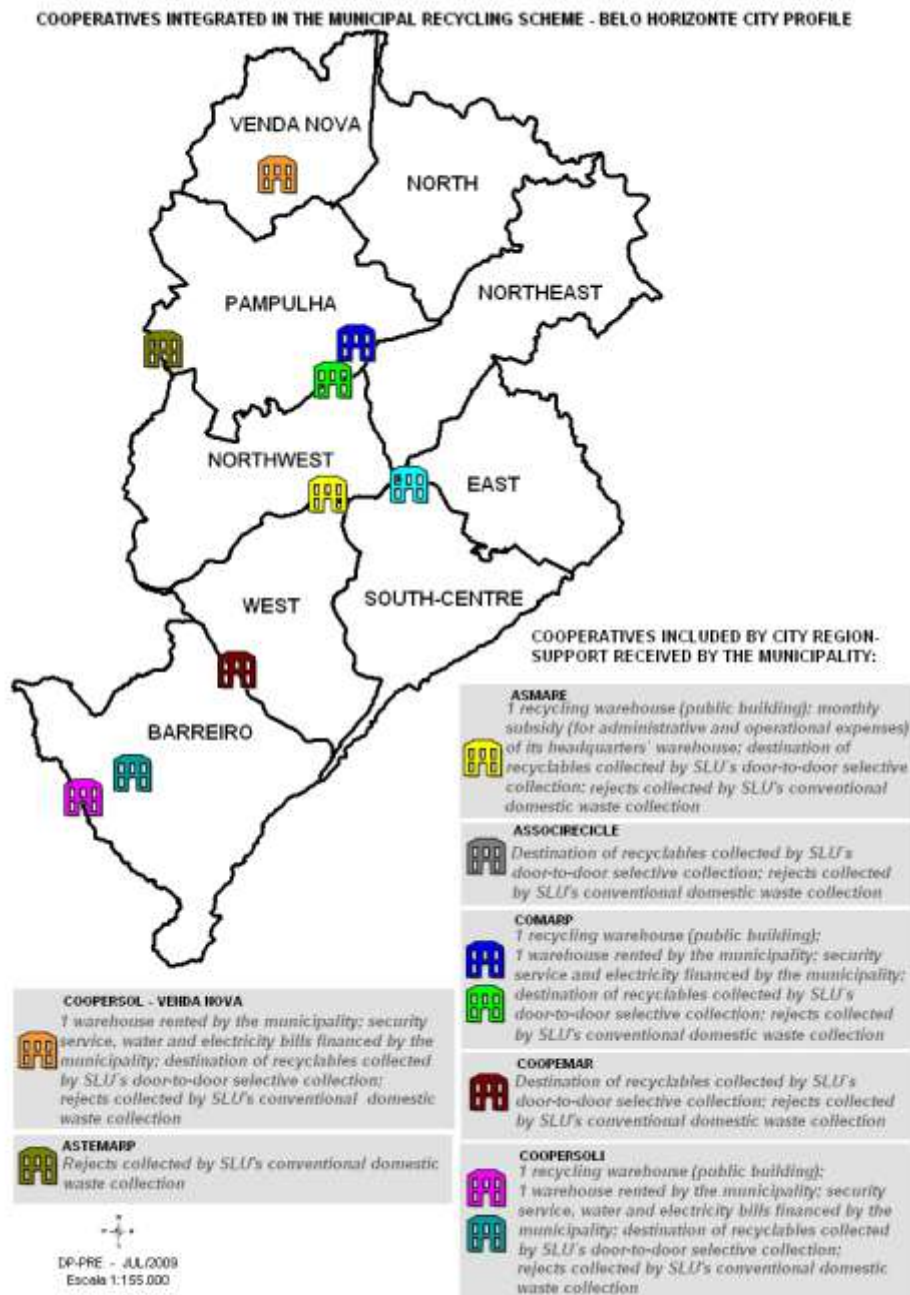
Licensing of horse carts

Municipal Decree 10.293 (12/08/2000) determines that horse carts should be registered and licensed on an annual basis without any charge to the informal workers. The informal collector of debris is provided an identity card and a vaccination card for the horse is also provided by the Municipal Secretariat for Health. The SLU is responsible for monitoring compliance of disposal of material collected and transported by the *carroceiros* according to the regulation.



Plate used for the horse carts of *carroceiros*. Source SLU

EXAMPLES OF COOPERATIVES PARTICIPATING IN BELO HORIZONTE'S MUNICIPAL WASTE MANAGEMENT SYSTEM.



Map illustrating the location of waste picker cooperatives in the municipality of Belo Horizonte.

Below are overviews of select MBOs.

ASMARE – Recycling Warehouse - Headquarters

Founded in 1990, ASMARE constitutes a managerial and administrative organisation consisting of associates that pursue a self-supporting business in the recycling field. The association is organised in committees as follows: Infrastructure, Health, Religion, Social Communication, Finances, Environment and Education/Culture/ Entertainment. The Steering Committee is formed by a representative of each one of the 7 committees. Though legally registered as an association ASMARE functions internally as a cooperative.



ASMARE catador. Source: Demetria Tsoutouras

ASMARE's headquarters, situated in downtown Belo Horizonte, receives waste material from individual collectors (*catadores*) who are members of the association. ASMARE associates have distinctive yellow carts for collection of recyclables and each associate has her/his own space for sorting at the recycling warehouse. The sorted materials are compressed and weighed. ASMARE has its own compressing machines

and bulk weighing scale in a compressing and weighing centre managed by *catadores* and former street-dwellers. The weight of materials per person is recorded and a receipt is issued, and ultimately each person is paid according to the recyclable materials produced from the waste collected by them.

ASMARE is involved in a great deal of projects and has other facilities such as cultural bars; a paper workshop etc.

COMARP Pampulha – Recycling Warehouse



COMARP member. Source: Julian Luckham

COMARP was formed by 10 people, mainly women, in 2003 following a capacity building activity developed by the municipality to boost social enterprises in the Pampulha region of Belo Horizonte. The group decided to form a cooperative and engage in the recycling business. Initially the group engaged in the collection of recyclables and in the assembly of brooms from PET bottles as a way to generate income but now they have concentrated activities on the sorting of recyclables. Since its beginning the group has received support from the municipality which has provided an area for the cooperative's first sorting facility.

COMARP currently has 35 associates and 29 of them are women. They belong to UNISOL a confederation of cooperatives linked to CUT (national confederation of workers). COMARP together with 3 other local cooperatives have formed REDESOL – a network of waste pickers' cooperatives for bulk commercialization of recyclables.

CATAUNIDOS - Plastic Recycling Plant

“Cataunidos” congregates ASMARE from Belo Horizonte and 8 waste pickers’ organizations from cities within the Metropolitan Region of Belo Horizonte: Betim, Brumadinho, Contagem, Ibirité, Igarapé, Itaúna, Nova Lima and Pará de Minas, involving around 500 waste pickers in total. The recycling plant produces pellets from recycled plastic.

The recycling plant started operation in 2007 and resources for its implementation came from different sources such as the *Fundação Banco do Brasil*, Petrobrás⁴ and the InterAmerican Foundation with the donation of an area for construction of the recycling plant. A law-abiding term was signed, in 2003, between the municipality and the ASMARE for the donation of an area for the construction of a plant for plastic recycling (production of pellets).

Although the municipality backed the recycling plant, its ownership is “Cataunidos”. Its implementation results from the vision and the leadership role of the MBOs involved and its social advisors – Pastoral de Rua⁵ and INSEA⁶.

Operators of the plant are hired in the local community by the Cataunidos. Three waste pickers are the managers of the plant. There is a committee with representatives of the 9 waste pickers’ groups which oversee the management of the plant. There are 15 workers at this site.



Catadores at Cataunidos. Source: Leslie Tuttle

For more information:

About the MBOs:

- CATAUNIDOS see: www.cataunidos.org.br or Madalena Duarte (waste picker leader) madaleneduarte47@gmail.com
- COMARP contact Iva Neide (waste picker leader) comarpampulha@yahoo.com.br
- ASMARE contact Luiz Henrique Luizasmare@yahoo.com.br (waste picker leader) or Flávia - flaviaasmare@gmail.com

About the Public Cleansing Agency contact SLU through Aurora Pederzoli auror@pbh.gov.br

Further information can also be obtained with Sonia Dias (sonia.dias@wiego.org)

⁴Brazilian petroleum company.

⁵ An NGO from the Catholic Church engaged in the organization process of waste pickers and street dwellers.

⁶ An NGO engaged in the organization of waste pickers and in giving support to municipalities involved in integration schemes of waste pickers.