



IMPROVEMENT OF URBAN SOLID WASTE MANAGEMENT THROUGH RECYCLING INCENTIVES: A METHODOLOGY FOR MORE SUSTAINABLE CITIES

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INCLUSIVE AND SOLIDARY RECYCLING OBSERVATORY

Inclusive and Solidary Recycling Observatory



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Network of reflections and actions to build solutions to waste recycling as a social and environmental alternative to urban waste treatment, from theoretical and practical knowledge.

Brazil does not have a good historic in urban waste treatment.

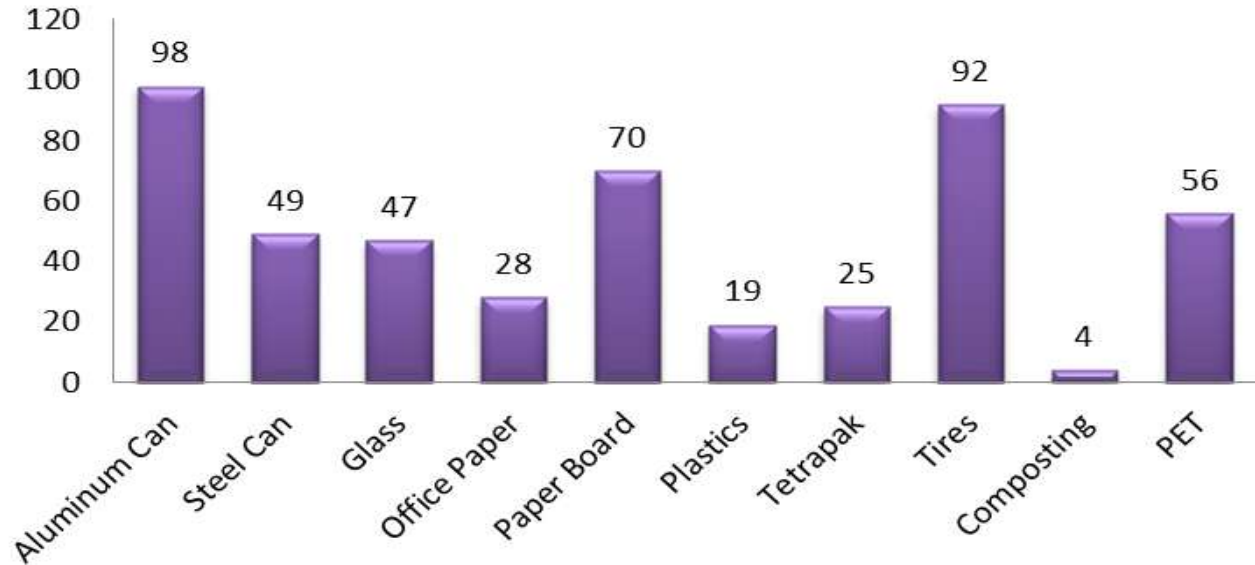
Selective collection is not common in most of the Brazilian cities (only 14% of total).

But the country recycles some kinds of urban waste much more than the majority of countries in the world!

Why?



Brazilian Recycling Index (2012)



Municipal waste recycling programs are responsible for 3% of the total recycled (0,7% for metals, 7,5% for papers e 17% for plastics).

Waste pickers are responsible for 90% of the recycled material that reaches factories.

They are accountable to increase for 12% the amount of Brazilian urban waste recycled.

Recycling Index of Aluminum Cans in Brazil, Japan, Argentina, Europe and USA



Solidary Selective Waste Collection: one Social Technology

A person with short blonde hair, wearing a red shirt and a dark apron, is shown from the side, sorting through a large pile of colorful plastic waste. The waste includes various items like bottles and containers in shades of blue, green, pink, and yellow. The background is a plain, light-colored wall.

Waste pickers organize themselves as collective enterprises - cooperatives and associations - and so they can be contracted by municipalities as part of the urban waste management systems.

There are specific Brazilian laws to define this relationship and there are governmental funds to support waste pickers organizations.

Solidary Selective Waste Collection: one Social Technology

Waste pickers ask people to separate recyclables from waste and pick them up on a specific day of week, taking them to their sheds.

In this contact, they teach citizens about what is or is not recyclable, and sensitize them to select, once the waste will become an income to a waste pickers family.



Solidary Selective Waste Collection: one Social Technology

In their sheds, the waste pickers sort manually the recyclables (plastics, metals, glass and papers) and prepare pressed bales, selling them to middlemen, that finally sell the material to the industry.

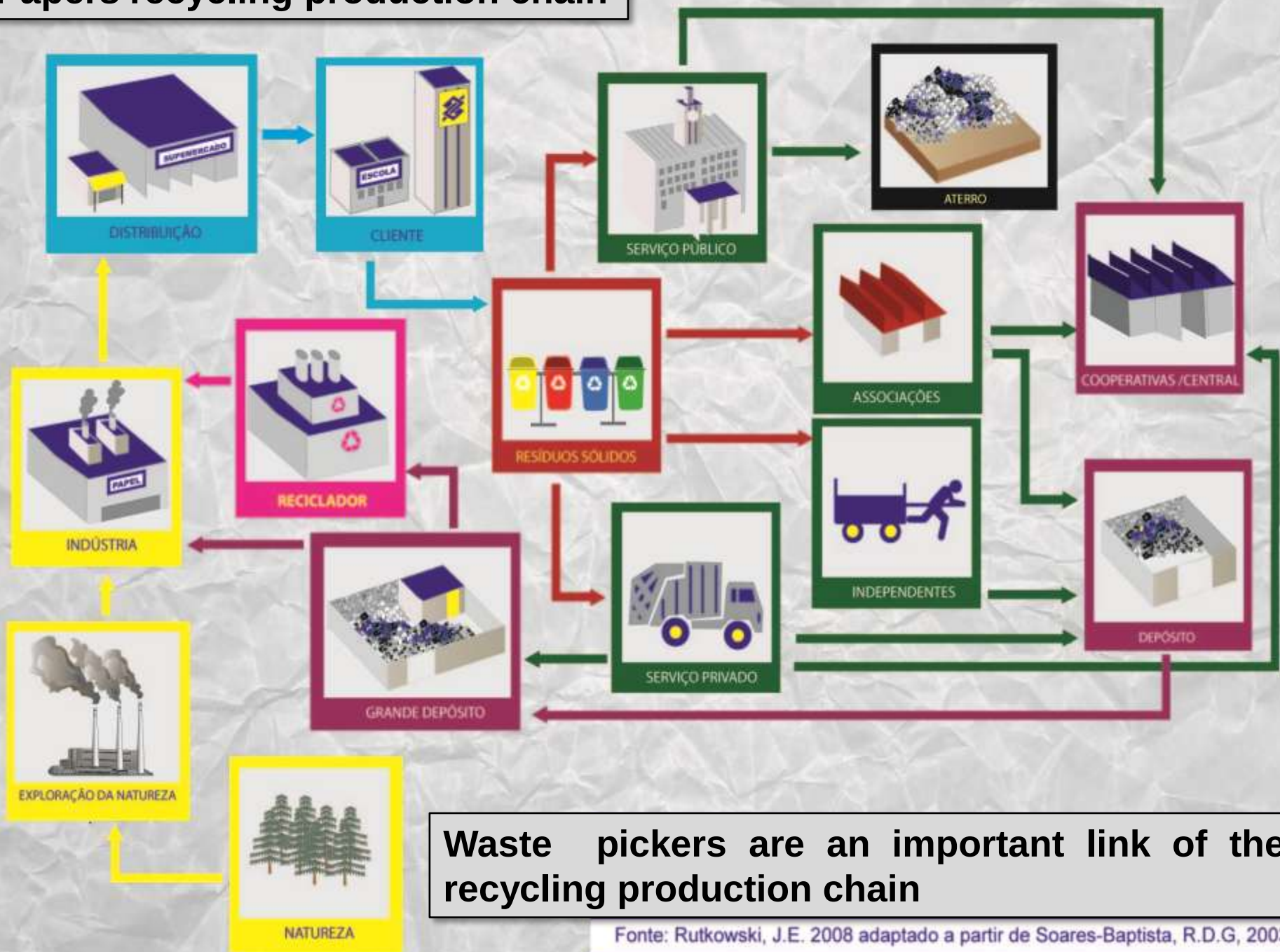




Examples of waste pickers sheds



Papers recycling production chain



Solidary Selective Waste Collection: one Social Technology - Results

Waste pickers do the service with more effectiveness: they reach a greater area in the cities; they arrive where traditional waste collection does not and they sensibelize people to select recyclables.

Waste pickers increase the technical efficiency: a greater volume of recyclables are subtracted from urban waste.

- ✓ Natal/RN – 42 t/month to 298 t/month, after 12 months of waste pickers work;
- ✓ Itaúna*/MG – 140 t/month to 208 t/month, on the first month of waste pickers work; discarded material decrease from 70 % to 30 %.

More sustainability: waste pickers income grow up (+46%)* and productivity grow up (+48%)*, easier to maintain pickers groups and all the system.

Solidary Selective Waste Collection: better environmental results, more material recycled, less waste onto landfill

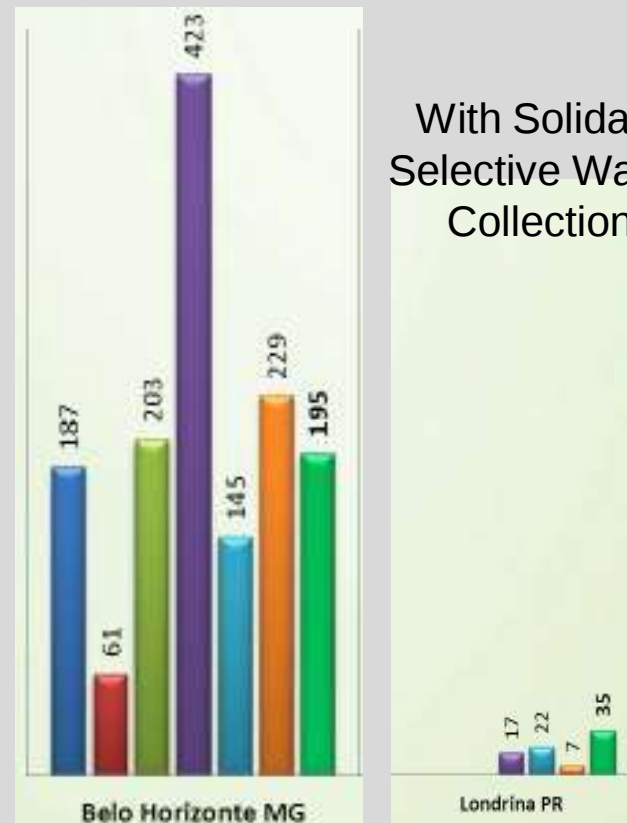
Selective collection (ton/month)

Cost (U\$/ton)

With Solidary Selective Waste Collection



With Solidary Selective Waste Collection



■ 1999 ■ 2002 ■ 2004 ■ 2006 ■ 2008 ■ 2010 ■ 2012

Cost reductions: use of multiple modes of transport allows optimization of resources

Government gains with support for waste pickers cooperatives

Collecting with waste pickers has cost between 10 and 20 percent of the cost of the companies.

Door to door collection solution	Average cost (U\$/ton)	Vehicle needed
Big-bag cars and trucks 	14.00	33 big-bag cars and 2 trucks
Electric cars and trucks 	20.00	33 electric cars and 2 trucks
Motocycles and utility trailers 	30.00	30 motorcycles and utility trailers
Waste pickers and Kombis 	100.00	30 Kombis
Waste pickers and trucks 	120.00	17 trucks

SSWC: prospects for development and expansion

- Recognize the model as a Social Technology to be widespread to academics, politics and waste technicians;
- A work intensive technology, appropriated for countries with unskilled workers and useful to reduces poverty;
- Guarantee priority for recycling, avoiding technologies that could compete for recyclable materials as incineration;

SSWC: prospects for development and expansion

- Necessity of using participatory methodologies to advising, consulting, planning and management of the waste system: join theoretical and practical knowledge to construct community-based refuse collection and recycling programs;
- Define sustainable means of financing the waste pickers cooperatives, based on principles of social and solidary economy and on payment for environmental services.

Thank you!



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