

CIUDAD SALUDABLE



Project	Pro Reciclador
Organization	Ciudad Saludable
Geography	Peru and Latin America
Areas	Urban and semi-urban
Solution	Household garbage collection
Date started	2002
Stage	Replication
Scale	38 toilets, ~190 users



A professional recycler in Lima

Project description

History of organization

Founded in 2002 by Albina Ruiz, Ciudad Saludable is a Peruvian non-profit organization that aims to improve waste management (sorting, collection and recycling) in developing countries. It operates in Bolivia, Brazil, Colombia, Mexico, Peru, Venezuela, Ecuador, Chile and India, and plans to expand to Guatemala and Costa Rica. Ciudad Saludable is part of the "Ciudad Saludable Group", along with Perú Waste Innovation SAC (the for-profit consulting arm founded in 2009, specialized in solid waste management) and Healthy Cities International Foundation (a non-profit entity created in 2010, in charge of replicating the model and strengthening partnerships, especially with the US).

Ciudad Saludable has built a community-based approach involving all of the value chain actors through various programs:

- Pro Reciclador, that promotes the professionalization and socio-economic inclusion of informal waste pickers by building a productive value chain creating better employment opportunities in waste management
- Basura Cero, that helps local governments and civil society to implement efficient tools, programs and a legal framework allowing proper management and reuse of solid waste
- Ciudadanía Ambiental, that promotes environmental best practices in schools, firms, communities and organizations through trainings, awareness workshops, social marketing, and communication.

In this case study, we will focus on the Pro Reciclador program, which has increased the quantity of recyclable waste collected and has been turning waste collection into a profitable source of income for waste pickers, who in turn became more professional and empowered.

Value proposition and profile of customers

In Peru - as in most developing countries, urban solid waste is improperly and inefficiently managed by municipalities. According to the World Bank,²⁰ 30-60% of urban waste in developing countries remains uncollected and less than 50% of the population is served. In some cases, as much as 80 percent of the collection and transport equipment is out of service, in need of repair or maintenance. In most developing countries, open dumping with open burning is the norm. Informal waste pickers illegally sell waste collected on the streets and this impacts the neighborhoods in terms of safety and hygiene. Furthermore, waste-pickers only obtain limited revenue from this informal activity, as the buying companies impose below-market purchase prices on them.

Ciudad Saludable created an innovative recyclable waste management system that is attractive for municipalities and their citizens, as well as the existing informal waste pickers. The Pro Reciclador program supports existing waste pickers by enabling them to become micro-entrepreneurs and set-up or join local recycling associations. Through this organization, they can provide a free door-to-door recyclable waste collection service to households, and centralize the waste in a local collection center owned collectively.

²⁰ www.go.worldbank.org/A5TFX56L50

The recycling agents (“recicladores”) who work for the associations usually work full-time, with collection activities in the morning and sorting activities in the afternoon. The association as a whole can then sell the recyclable waste in bulk to manufacturing companies or buyers specialized in different streams. The associations are initially not-for-profit, but are encouraged to progressively turn into for-profit micro-enterprises to further scale-up and invest in processing equipment. By 2011, nearly 30% of the 102 associations created had switched to a for-profit micro-enterprise set-up.

The families who benefit from the waste collection service are composed of 4 to 5 members in average and live most often in formal settlements. When they decide to participate to the program, they commit to sort their recyclable waste, store it in a large plastic bag (provided to them) and deliver it to the reciclador during his weekly visit. Participating households put a sticker on their front door to help the recicladores identify them. Families can place the bags full of recyclable waste in front of their front door on the day of collection, and do not necessarily need to be present at the moment of collection.

Value chain



Marketing & sales strategy and organization

- **Convincing municipalities:** Ciudad Saludable engages directly with municipalities to promote health education and the importance of waste management, in order to convince them to collaborate with recycling micro-enterprises (by passing laws and regulations that guarantee the rights and inclusion of waste pickers in municipal waste plans). In addition, Ciudad Saludable works closely with local municipality officials and technicians to ensure that the collection work is linked to the removal services of other municipalities and government agencies.
- **Raising awareness among households:** Ciudad Saludable convinces households to subscribe to the free service, mostly through mass media campaigns combined with door-to-door visits. When starting to work in a new area, Ciudad Saludable starts with a 4 day promotion campaign, involving about 8 Ciudad Saludable staff and 8 volunteers, visiting all households once in order to get them to “participate”. Promotion efforts are critical to

raise the awareness among family households and lead them to participate in the program. To further incentivize the families, Ciudad Saludable rewards the “good contributors” by planting trees close to their houses and developed a system of penalties for non-participation in some cities where the participation rate is high.

Waste collection

- **Support of recycling associations:** Ciudad Saludable helps existing informal waste pickers create and manage local recycling associations that will centralize and collectively sell the recyclable waste. Once organized in associations, the recicladores are able to collect larger amounts of recyclable waste in a centralized collection center, and sell each category of waste (cardboard, plastic, PET, metal, etc.) to companies at better selling prices. The waste is sold on-site, which also ensures that the quantities sold are accurate, thanks to a weighing scale owned by the associations themselves.

Each association is composed of an executive committee with a president, secretary and treasurer (who deals with the remuneration of recyclers and the revenues generated by the recyclable waste sales to buyer companies) chosen among the recicladores; general meetings are organized on a regular basis.

Based on information obtained during a field visit in Lima, one collection center can be shared by about 50 recicladores grouped in 4 recycling associations, whereby each reciclador covers 250 households.

- Support of recicladores within the associations: Ciudad Saludable helps recicladores in allocating households amongst themselves, and provides them with training (e.g. safety equipment, garbage separation, processing preparation and machinery usage) and logistic support (e.g. collection route optimization). It ensures that the association provides them with the appropriate equipment, such as a helmet, gloves and working pants allowing them to collect waste in safe and hygienic conditions, as well as greater dignity.
- Ciudad Saludable also supports recicladores by enabling them to access attractive micro-financing options to buy a small collection vehicle (typically motorized tricycles which cost about \$300) in partnership with local banks. For instance, it created a specific fund at Scotia Bank – guaranteed by Ciudad Saludable with a deposit of \$30k – that offers credit at a 12% annual interest rate.

Waste disposal and recycling

The recycling associations enable recicladores to centralize and sell specific categories of recyclable waste in bulk to companies, without any intermediary.

The recycling associations that turned into micro-enterprises have future plans to enhance their downstream business of recyclable waste, such as by:

- » investing in waste recycling machines (e.g. presses to compact plastic or cardboard, and shredders for plastic) to improve the commercial offer to buyers by going a step further in the recycling process
- » in the longer run, exporting certain categories of waste that are not used nationally, thereby further expanding their commercial activity at an international scale.

To ensure demand for the recyclers, Ciudad Saludable works with local actors to promote the recycling of new/ different types of waste. For instance, Ciudad Saludable established organic farms to train farmers in using compost and other materials from recycled organic waste.

Social impact

- Reach and penetration
 - » The proportion of Peruvian households that initially agree to participate appears to vary significantly across neighborhoods, with on average 13% and up to 95% in Miraflores (a wealthy neighborhood which benefitted from strong promotion efforts driven by the local mayor). Possibly only 60% of these families respect their commitment and are actively participating. Hence, continued promotional efforts are critical.
 - » Over 200 municipalities are working with Ciudad Saludable; usually large municipalities of over 100k inhabitants in Peru.
 - » 11.5k organized waste-pickers including 6.5k formalized recyclers in Peru
 - » 67 recycling associations in Peru created through Ciudad Saludable's technical assistance
 - » 35 environmental waste management micro-enterprises (that originate from recycling associations before turning into for-profit)
 - » 300k tons of recyclable material collected by recicladores per year in Peru
 - » \$18.5M of sales value of recyclables per year in Peru
 - » 9 million users who benefit directly or indirectly from Ciudad Saludable's programs in Peru (through the coordination of recycling services and general waste collection by municipalities).
- Evidence of impact on health

Ciudad Saludable contributed to reducing the prevalence of waste-related diseases (e.g. diarrhea, hepatitis) for both citizens and ill-equipped waste collectors.
- Environmental impact

It is estimated that Ciudad Saludable enables to save about 2 million trees per year through the collection of paper and cardboard in Peru.

 - » *Systemic change:* Ciudad Saludable has been very active in lobbying all stakeholders involved in waste-related issues.
 - » *Recicladores:* Previously informal waste pickers benefit from a more stable and better paid job (the remuneration is up to 2 times the minimum wage, and 3 to 5 times what they earned from their previous informal work, which used to be about \$2 per day). Additional benefits also include improved health working conditions (e.g. the plastic bag that they now provide to the families), and the credit to buy a tricycle. A virtuous cycle is created by giving these micro-entrepreneurs the potential to further develop

their businesses by reaching more households. Their grouping in recycling associations opens new opportunities to further develop market-based activities (future investments in recycling machines and exporting). Furthermore, Ciudad Saludable provides a path for the best recicladores to go after business accounts (e.g. collecting paper from banks) and increase their income to \$300/ month or more.

- » *Local authorities/ municipality:* The city's waste collection costs are significantly reduced by the waste sorting upfront; city streets are cleaner; municipalities can obtain financial support from the government based on their performance in waste management and environmental sustainability.
- » *In the political space:* Ciudad Saludable played an active role in the creation of various legislations regulating solid waste management and the activities of recyclers, including the first General Law on solid waste in Peru in 2000. It also launched roundtables and networks of municipalities.
- » *In the academic space:* Albina Ruiz created at "La Universidad Católica del Perú" a post-graduate program in integrated waste management and a Master's degree in environmental management, training more than 5k master students.

Economic sustainability

- End consumers: The solution is free for end-consumers.
- Main organization: As of 2011, Ciudad Saludable team was composed of 23 staff, 10 consultants, over 100 sub-contracted specialists and student volunteers, supporting the recycling micro-enterprises. The yearly operating budget was of \$1.2 million. The organization is grant funded by Peruvian ministries, municipalities and universities, international organizations and foundations. Moreover, the Ciudad Saludable programs benefit from the profits of its for-profit arm Peru Waste Innovation.
- Recycling associations: Each of the recycling associations supported by Ciudad Saludable is managed independently and brings together 10-20 recicladores on average.
- Revenues: come from sales of recyclable waste to companies and amount to \$50k yearly per association (16 tons of waste per month, sold at \$300 per ton). The associations also collect \$350 of yearly membership fees from recicladores (\$15-30 per reciclador to join a recycling micro-enterprise supported by Ciudad Saludable).
- Costs: Recicladores are paid \$180-260 per month; Collection vehicles are financed individually by the recicladores. The collection center is rented or owned by the association. Other equipment costs comprise of weighing scales.
- Profits: In this configuration, associations can more than cover their costs and outstanding profits at the end of the year are distributed across the recicladores.
- Municipalities: 20% of municipal waste management budgets are saved thanks to the Ciudad Saludable program. Moreover, the government allocates subsidies to the municipalities that implement the Ciudad Saludable program (at the condition that at least 11% of the households participate in the municipality). The household participation rate in municipalities is measured and monitored by government agents, based on the evaluation of the volume of recyclable waste collected.

Innovations

- Community-based approach that benefits to all stakeholders: it provides a free service to end-consumers, cost reductions to municipalities, formal jobs to waste pickers and more supply to waste purchasing companies
- Integrated approach that links and incentivizes all stakeholders in the supply chain.

Remaining hurdles and bottlenecks

- It is challenging to increase penetration rates in targeted areas from the current 13% as it requires continued promotional efforts. To achieve this, the following could be helpful:
 - » a stronger field force to go door-to-door and who support community leaders in convincing families of the need to participate. Promotion agents could be hired from the community or from outside.
 - » a stronger push or more regulation from the municipalities to enforce or encourage participation to the program
 - » continued support from local municipality officials over time to continue promotion efforts in their municipalities, beyond the initial push given by Ciudad Saludable.
- Ciudad Saludable recognizes that the initial model of (not-for-profit) association of self-employed entrepreneurs can only be seen as an intermediary step towards the creation of micro-enterprises, with the ability to make investments in processing equipment. Only for-profit micro-enterprises would be able to go after business accounts, add value through processing and possibly directly export recycled material.

Contact information

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Appendix

Sources: “Case for Support” document by Ciudad Saludable (2011)

www.fairstreet.org/?tag=recyclage&lang=en;
www.ciudadsaludable.org; www.proyectoprorreciclador.wordpress.com;
www.skollworldforum.org/2009/10/22/ciudad-saludable-solutions-in-the-waste

Field visit on the week January 6th, 2014

Exchange rate: 1 USD = 2.5 PEN
