COMPREHENSIVE SOLID WASTE MANAGEMENT

CASE STUDY

THE CIUDAD SALUDABLE MODEL IN PERU
EXECUTIVE SUMMARY

Ciudad Saludable is a non-profit association that has developed a model to facilitate solid waste management at municipal level. It was founded on November 6th 2002, by a group of professionals from different backgrounds, including Albina Ruiz, a well-known Peruvian social entrepreneur and activist.

Ciudad Saludable’s mission is to contribute to the sustainable environmental management of cities by implementing integrated systems of solid waste management with the socio-economic integration of recyclers, and enhancement of the recycling value chain. The specific objectives of the model are to: i) Promote continuous improvement in the environmental management of solid waste, ii) Promote socio-economic integration through recycling initiatives that add value to the various actors in the value chain and iii) Provide “Environmental Education for Sustainable Development”, with a focus on the public and private sectors. Each of these targets is associated with different program components.

Methodology

This report uses information from a series of interviews, site visits, focus groups and meetings in Lima (Peru). A literature review of the model was also carried out.

The actors interviewed belong to the Ciudad Saludable Group (the management team and those responsible for specific projects), public authorities (those responsible for waste management at municipal level), recyclers (recycling associations and individuals), community members, teachers at the Pontifical Catholic University of Peru and members of the media.

Abbreviations

IDB
Inter-American Development Bank

LGRS
General Law on Solid Waste (Ley General de Residuos Sólidos)

MIF
Multilateral Investment Fund (IDB Group Member)

MINAM
Ministry of Environment (Ministerio del Ambiente)

OBS
Grassroots Organizations (Organizaciones de Base Social)

PWI
Peru Waste Innovation

WB
World Bank
GENERAL CONTEXT

According to World Bank data, during the period 2008-2012, Peru made great economic advances. With a population of over 30 million people its achievements include: high growth rates, low inflation, reduction of external debt, macroeconomic stability and reduction in poverty indexes. Since the early 1990s, the country has embarked upon a series of reforms, key among which are fiscal consolidation, trade liberalization, exchange rate flexibility, financial liberalization, and a prudent monetary policy. From 2002-12, Peru had an average growth rate of 6.4\%\textsuperscript{1}. In 2009, due to the global financial crisis, growth was reduced to 0.9\% but this was followed by rapid expansion with a growth rate of 8.8\% in 2010, 6.9\% in 2011 and 6.6\% in 2012\textsuperscript{1}.

\textsuperscript{1}World Bank: http://www.worldbank.org/en/country/peru/overview. The Human Development Index (HDI) was 0.741 average in 2012 and the inequality-adjusted HDI (IHDI) of 0.561, 77 in the world ranking from UNDP. http://hdrstats.undp.org/es/paises/perfiles/PER.html

\textsuperscript{2}http://www.inei.gob.pe/web/poblacion/
This economic expansion has enabled the country to better address its development challenges. Among these, one of the most important is more equitable distribution of the benefits created by rapid growth. The impact of strong growth has resulted in a significant reduction in poverty with the national rate falling from 48.5% in 2004 to 27.8% in 2011. However, wide inequalities remain throughout the country, with the poverty rate in urban areas standing at 18% compared to 53% in rural areas.

Reports from the Ministry of Environment (MINAM) relating to waste generation in Peru indicate that population growth, poor consumption habits, disorderly migration processes and unsustainable trade flows create the generation of more solid waste. This increase is compounded by inadequate investment in waste collection and treatment services which frequently put people’s health at risk and reduces their development opportunities. In this context, the areas with most resources receive a better service while in districts with fewer resources, usually the most populated, the quality of service (if it exists) is very poor.

The situation of solid waste management in Peru, as in other developing countries, is closely linked to poverty, disease and environmental pollution. In 2011, the average quantity of municipal solid waste generation per capita across the country was 0.61 kg per day with the generation of 5,042,228 tons of household waste. At national level, most waste generation in 2011 occurred in the region of Lima and amounted to 42.1% of the total.

According to the National Registry of Municipalities (RENAMU in Spanish) and the National Institute of Statistics and Informatics (INEI), of the solid waste collected (by 1,739 municipalities in 2012), only 20.1% went to controlled landfills which have basic collection systems for leachates (the liquids that come from the mixture of rainwater and waste degradation). Given the large amount of waste generated, the number of landfills is insufficient; there are only eight in the country and almost all of them are concentrated in Lima. Of the remaining waste generated, 48.3% ends up in open spaces (‘dumps’ where solid waste is abandoned without separation or treatment), 14.9% is burned, 2.6% is discharged into rivers, lakes or the sea, and 14.1% is recycled.

---

3 INEI Encuesta Nacional de Hogares, 2007 - 2012
6 According to an article Perú21, in 2010 Peru needed at least 100 landfills to accommodate all the waste produced. http://peru21.pe/noticia/675977/peru-solo-tiene-rellenos-sanitarios
8 Fourth National Report on Municipal and non-Municipal Solid Waste: Period 2010-2011
9 National Institute of Statistics and Informatics (INEI) - National Registry of Municipalities (RENAMU), 2011-2012.
In 2011, the amount of reusable non-hazardous waste was as high as 87.78%. 48.9% of this amount was domestic organic waste and the rest was paper, cardboard, plastic, metal, glass, etc. According to Ciudad Saludable, in 2010 108,594 recyclers were collecting this recyclable waste, mainly through informal recovery in dumps, landfills, streets, etc. The living conditions of the recyclers are extremely poor. In 2010, for example, 86% of recyclers were living on less than US$1.25 a day, 30% were women and 36% were concentrated in Lima.

INSTITUTIONAL AND REGULATORY FRAMEWORK

Solid waste management is regulated by the General Law on Solid Waste No. 27314 (LGRS in Spanish) and its Regulations, the Supreme Decree No. 057-2004-PCM. This institutional framework adopts a comprehensive approach that links health, environment and development, and includes a state reform process for public policies and private sector participation.

According to the LGRS and its Regulations, municipalities are responsible for waste management through municipal associations; public or mixed investment programs; private investment in infrastructure and waste services; and other private and public-private initiatives. The municipalities also set and collect fees related to the provision of services and give licenses to service providers. Waste management facilities are managed by the provincial municipality.

In 2010, Peru became one of the first countries in the world to pass a law regulating the activity of recyclers thus fostering their socio-economic integration in a comprehensive management system for solid waste. Ciudad Saludable played an important role as a catalyst in promoting the Act and its regulations.

The most important challenge of the current legislation is to ensure coverage and quality of service, with municipalities incorporating and integrating informal recyclers into the system in their areas. In this respect, the municipalities need support to define their own strategies for integrating waste recyclers (as stipulated in the Act) and to help them achieve better living conditions, access to health, education, etc.

10 In 2009, from the 292,636 tons of solid waste recycled, 33% was recovered formally in the generation source (selective recollection), while 67% was recovered informally (in dumps, landfills, public roads, etc.)

Ciudad Saludable has played an important role in enabling Peru to become a pioneer in the regulation of the activities of recyclers.
Ciudad Saludable\(^\text{12}\) began to design its intervention model in 2002. This was based upon analysis of four interrelated problems:

- Government waste collection systems in Peru were ineffective due primarily to high service costs and a high default payment rate, lack of credibility in municipal institutions, institutional weakness, and the indifference of the population.
- The illegal dumping of waste was causing significant environmental degradation, especially in the most vulnerable communities.
- Waste was left where the poorest people lived.
- Some members of the population living in poverty were making a living through informal waste collection from landfills and its subsequent sale.

To address these problems, Ciudad Saludable has developed an intervention model structured around three key elements:

- Training and advocacy work with public authorities so that recyclable material does not reach landfills.
- Integration of waste recyclers in the recycling chain and the integrated solid waste management system.

\(^{12}\) Health City (in English)

“To contribute to sustainable environmental management of cities through the implementation of systems for management of solid waste with economic, social and environmental inclusion of recyclers, promoting the recycling value chain”

Ciudad Saludable’s Mission
Public awareness of the importance of properly managing solid waste and the promotion of “Environmental Citizenship”.

These goals are articulated in the following three programs which make up the main areas of Ciudad Saludable’s work:

The **Zero Trash Program**: assists in the gradual change of policies and practices at regional and provincial level by promoting an integrated system of solid waste management that covers the generation, handling, reuse and disposal of waste. Working with local and regional governments, citizens, businesses and institutions, the ultimate goal is to send zero tons of reusable materials (inorganic and organic waste) to controlled landfills, and zero tons of unusable waste to uncontrolled landfill sites. Program activities include:

- The development and implementation of municipal regulations to encourage recycling within municipal boundaries.
- The training of municipal officials through workshops on solid waste management.
- Technical assistance and advice to improve municipal waste management systems.

The **Pro-Recycler Program**: promotes the regularization of recyclers and their socio-economic integration through comprehensive models for the reuse of solid waste and the creation of jobs in productive value chains in the different regions of Peru. The program also works to export the model to other countries with similar problems. Program activities include:

- Training courses in occupational health and professional development in solid waste separation, as well as integrated management of usable solid waste, technical operational training and business management. In addition to classroom courses and workshops, the training of recyclers uses learning systems such as virtual teaching platforms and expressive arts therapies. In the training of entrepreneurial leaders\(^\text{13}\), special emphasis is placed upon ensuring that women are adequately represented.

---

\(^{13}\) Pait (2012:10).
Formalization through the creation of recycler associations and the provision of support for existing associations to strengthen their organization and management.

The provision of equipment such as *motofurrones* (engine-powered motorbikes) to transport waste.

Access to information and social services for the families of recyclers.

The creation of microenterprises with assessments of the different possibilities for adding value to waste, facilitation of access to market information, provision of marketing mechanisms, contacts with companies and microcredit for entrepreneurship. The microenterprises provide services such as waste collection, processing of recyclable materials, management of manual landfills, as well as the creation of greenhouses, organic fertilizer production plants, paper recycling or properly managed landfills.

The **Environmental Citizens Program**: encourages the development of an environmentally engaged citizenship by promoting good environmental practices in the home, in school, in businesses, communities and universities, while prioritizing the proper management of solid waste for sustainable development in the public and private sectors. Program activities include:

- Encouragement of the active participation of residents’ groups and grassroots organizations. The initiative has established solid waste management committees (Local Environmental Management Committees) to manage waste collection services. Residents participate in the implementation and development of all the model's activities through focus groups, environmental awareness and cleaning campaigns, payment for services, and the separation of organic and inorganic waste in the home.

- A community-based monitoring system which supervises the work of microenterprises dedicated to waste collection.

- Agreements with companies to ascertain what amount of solid waste generated by them is recyclable, to design and implement waste separation systems, and to encourage awareness-raising and training of staff.

- Projects with educational institutions such as schools where children are taught how to properly separate waste, and with universities which collaborate by developing training and research projects for integrated solid waste management.

---

The work of Ciudad Saludable goes far beyond that of a basic service provider in a particular area of Peru. It has become a catalyst for change in national solid waste management by providing a comprehensive model that develops cross-cutting partnerships with key stakeholders such as private companies, central and local government, educational institutions, media and the communities where Ciudad Saludable program activities are promoted (see Figure 1). In this respect, the Recycling Work Group is noteworthy as the mechanism where the main actors in the collection of waste (recyclers, businesses and public sector) work together to facilitate waste management and promote inclusive businesses related to recycling.

It is also important to mention that Ciudad Saludable has adopted a clear focus on measurable results with a results-based management system based on a strategic plan in which each program has an annual operating plan. In this management system, the Zero Waste Program works with municipalities, the Pro-Recycler Program with recyclers, and the Environmental Citizens Program with the wider community, including institutions such as schools and businesses.

Ciudad Saludable’s working model began with support from donor agencies such as the Open Society Institute, Avina Foundation, Skoll Foundation, PepsiCo, Atocongo Association and the Multilateral Investment Fund (MIF). Over the last ten years the work of the organization has been supported by individual donations and grants, and the role of the private sector has become increasingly important for its work.

The Recycling Work Group is the place where recyclers, businesses and the public sector work together to facilitate waste management and promote inclusive businesses.
KEY ACTORS

Figure 1. Relationships between the actors in the model
<table>
<thead>
<tr>
<th>Key Actors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ciudad Saludable</td>
<td>NGO responsible for promoting solid waste management projects in different municipalities. Its income is derived from billing, donations and its own resources. It has a results-based management system and is part of the Ciudad Saludable Group, along with Peru Waste Innovation and Healthy Cities International.</td>
</tr>
<tr>
<td>Peru Waste Innovation (PWI)</td>
<td>Consultant for the Ciudad Saludable Group on organizational and technological projects. Works as a service company generating profits that provide additional funding for Ciudad Saludable.</td>
</tr>
<tr>
<td>Healthy Cities International</td>
<td>Foundation responsible for dissemination of the Ciudad Saludable model and international fundraising. Part of the Ciudad Saludable Group.</td>
</tr>
<tr>
<td>Central Government</td>
<td>Responsible for state policy on solid waste management, including its regulation.</td>
</tr>
<tr>
<td>Municipal Government Bodies</td>
<td>Responsible for the implementation of the LGRS.</td>
</tr>
<tr>
<td>Recyclers</td>
<td>Individuals responsible for the collection of recyclable waste. Their regularization is encouraged through the creation of associations or small businesses.</td>
</tr>
<tr>
<td>Funders</td>
<td>Organizations that fund the Ciudad Saludable Group such as MIF/IDB, part of the Inter-American Development Bank, associations such as the Unión Andina de Cementos (UNACEM) or companies like PepsiCo, Siemens or Cementos Lima.</td>
</tr>
<tr>
<td>Local Communities</td>
<td>Residents of the municipalities who provide recyclers with recyclable waste and pay the municipal solid waste management tax.</td>
</tr>
<tr>
<td>Companies</td>
<td>Companies with whom partnerships are developed to promote businesses with recyclers in areas such as marketing, recycling and export of waste, as well as the creation of company waste collection routes such as those involving Scotiabank, L’Oréal or ADEX. Ciudad Saludable also works with Corporate Social Responsibility (CSR) programs that have provided equipment such as the motorfurgones.</td>
</tr>
<tr>
<td>Educational Institutions</td>
<td>Schools where children are made aware of the importance of careful waste separation, and universities which collaborate in teaching and research, such as the Pontifical Catholic University of Peru (Lima) where a degree has been developed in project formulation for public investment in the integrated management of municipal solid waste. The involvement of educational institutions plays an important role in improving the service.</td>
</tr>
<tr>
<td>Media</td>
<td>Media that promote Ciudad Saludable’s activities. In the past year, for example, these have included: Peru TV, Plus TV, National Radio, the newspaper El Trome or the journal Stakeholders.</td>
</tr>
<tr>
<td>Grassroots Organizations (OBS)</td>
<td>Local church organizations, health centers, educational institutions, specific programs, and Local Environmental Management Committees that perform waste collection services and carry out service fee collection which ensures the payment of operators and maintenance of technology.</td>
</tr>
</tbody>
</table>

Table 1. Ciudad Saludable Key actors
STRUCTURE AND GOVERNANCE

The general structure of the Ciudad Saludable Group is shown in Figure 2.

![Figure 2. General Structure of the Ciudad Saludable Group](image)

The organization of the group and its operational and decision-making mechanisms is based on the organizational structure shown in Figure 3.

![Figure 3. Ciudad Saludable Group](image)

19 Elaboration by the author.
20 Ciudad Saludable, 2013
The founder and president of the Group is accountable to an assembly of members composed of six people which has the support of a two-person International Advisory Council. The Ciudad Saludable Group provides services through PWI, Healthy Cities International and Ciudad Saludable. In Ciudad Saludable, the management of Developments and Projects, Education and Environmental Communication, and Finance and Administration all report to the Executive Director.

In recent years Ciudad Saludable has undergone a profound reorganization in order to focus more concretely on service provision. To this end, it has developed the Balanced Scorecard outlined in Figure 4.

Our aim is for all developing countries to promote healthy cities with the sustainable management of solid waste and the economic and social inclusion of recyclers.

---

**Figure 4. Ciudad Saludable Balanced Scorecard**

21 Ciudad Saludable, 2013
Economic management is carried out through a management software tool developed for organizational revenue and expenditure. The tool is used for both general accounting and individual projects.

In the past two years management has become much more professionalized with clearer and more demanding working methodologies. Operations are focused on managing for results with each person assigned time bound objectives and tasks linked to associated indicators that are checked regularly.

The strengths of this model are related to the flexibility in the structure and operation of the organization which are aimed at the achievement of a strategic plan through specific goals that link all activities to associated budgets, line managers and monitoring indicators.

Each Ciudad Saludable program includes three phases with the following support activities:

- **Participatory design**: Ciudad Saludable analyses and promotes the responsibilities of each actor.

- **Implementation**: Ciudad Saludable supports the development of public policy, trains and supports recyclers, etc.

- **Follow up**: Ciudad Saludable supports follow-up via regular meetings with all stakeholders. These include: weekly meetings between the cross-management committee (managers and coordinators) and the management committee (managers and executive director); specific meetings every two weeks on relevant topics (president, executive director and managers) and workshops (management team and field staff); an institutional breakfast each month (all Ciudad Saludable staff); and annual evaluation of the strategic plan and development of the yearly plan (all Ciudad Saludable staff).

Ciudad Saludable has also implemented a **monitoring and evaluation system** that enables analysis of the impact of each project undertaken. Special attention is paid to systematic evaluation in order to extract the lessons learned from each intervention. These lessons are published in specific reports via the website and disseminated through events, videos, reports or press releases.
INNOVATIVE ASPECTS

Ciudad Saludable’s most important innovation is the development of an integrated model of solid waste management that promotes the recycling value chain with the integration of recyclers. This integration of recyclers as a new agent in the waste management system facilitates the management of recyclable waste whilst also promoting social integration and increasing the payment of fees for solid waste management. This inclusion is carried out through a process that starts with training and is complemented with support for regularization, the provision of equipment, and assistance to access microcredit. Work is also undertaken to ensure support at policy level in order to create favorable working conditions and better access to services such as health, education and sources of funding, etc.

Ciudad Saludable’s systemic vision of the waste management system goes beyond the collection and transportation of waste. It encompasses the value chain (from generation to final disposal, processing and exportation) in projects involving all its members (communities, recyclers, municipalities and commercial companies, recycling companies and exporters).

In the organizational sphere, Ciudad Saludable has worked to adapt management systems normally applied in companies to a social organization. As a result it has achieved high standards of professionalism in its work (this includes individualized results management and the development of multiple partnerships focused on solid waste management). In the near future, Ciudad Saludable anticipates being able to measure competitiveness, effectiveness and commitment. Meanwhile, the formation of the Ciudad Saludable Group with the participation of the NGO Ciudad Saludable, PWI and the Healthy Cities International Foundation (with an office in New York) has enabled the three organizations to expand the range of services offered and operate under a common umbrella.

“We had no idea what it was to form an association but thanks to Ciudad Saludable we have found a way to look at common problems and learn how to solve them. This has changed our lives and has benefited our families, our association and our economy. Now we want to share what we know”

Milia Castro, Manager of the microenterprise, Los Amancaes de Villa María del Triunfo
Ciudad Saludable’s **technical innovations** are mainly related to the promotion of technologies for waste collection and transportation. These include the use of *motofurgones* that reduce transport times and make work easier for recyclers.

**Economic innovations** are linked to changes in the economic management of Ciudad Saludable (including program and activity analyses), and the incorporation, in each project, of a percentage of money that contributes towards the structure and development of additional outreach activities, strategic consulting, etc. Ciudad Saludable is also adding value to materials that were previously unappreciated by the community and which were only recycled through informal separation at landfills.

With regard to methodologies, Ciudad Saludable has applied new **learning systems** for different levels of training. These include virtual teaching platforms for the training of municipal workers and the use of creative methods for strengthening the personal skills of the recyclers (expressive arts therapies), and wider public participation through parades, sporting events, etc.

A final important initiative is the creation of the **Recycling Work Group** in which a relationship is established between the main waste collection players (recyclers, businesses and the public sector). This connection facilitates appropriate waste management and promotes inclusive businesses related to recycling at district and national levels, as well as outside Peru. Through this Group recyclers and exporters of products made from recycled material have joined together to push for tax exemptions on purchases related to the sale of small-scale solid waste.

**RESULTS**

Ciudad Saludable has worked for over ten years to build its model as a **catalyst for basic services** in different parts of Peru. In 2009, 292,636.94 tons of recyclable solid waste were marketed so that they became part of the recycling chain, representing an average 51 million Soles\(^2\) in benefits for the country’s 108,000 recyclers and their families. As a result, municipalities were relieved of the responsibility of having to dispose of more than two million cubic meters of solid waste, the amount of waste dumped in landfills was reduced and there was less pollution.\(^2\)\(^3\) With regard to the generation of business opportunities, in 2010 Ciudad Saludable established 35 microenterprises, including greenhouses, production plants for organic fertilizers, paper recycling companies and sanitary landfills, creating jobs for 320 people in 20 cities and benefiting three million people in Lima.\(^2\)^\(^4\)

---

\(^{22}\) $1 USD = 2.8 New Soles (October, 2013).

\(^{23}\) Healthy City (2010).

Due to the complexities of this initiative, quantitative data that provides meaningful indicators of Ciudad Saludable’s work has been compiled from a study of the results of a project entitled “Development of the Market for Integrated Management of Recyclable Waste” which began in 2009. This project aimed to improve economic opportunities and the quality of working conditions for recyclers in the municipalities of San Juan de Miraflores, Villa María del Triunfo, Villa El Salvador and Lima Cercado in Lima. The total cost of this project was US$1,172,259.00, US$645,000.00 of which was provided by the MIF/IDB and US$527,259 by Ciudad Saludable25.

The social impacts of the project are related to the economic benefits obtained by recyclers, the most important of which include:

- A 19.4% baseline increase in the average income of recyclers (2010).
- A 57% decrease in the number of recyclers with an income of less than US$2 per day.
- 148 recyclers obtained microcredit.
- An increase in the number of recyclers that received training through the project with a corresponding 9% increase in their income compared to recyclers who did not receive training.

The following Health and Welfare impacts were all also observed:

- The number of recyclers with acute diarrheal diseases was reduced by 74%.
- The number of recyclers with acute respiratory diseases was reduced by 83%.

Furthermore, as the strategy adopted is a transversal one across all project components with partnerships that create joint spaces and reinforce the institutional importance of each actor, it is important to highlight the following results:

---

25 Paity (2012: 8)
Four municipalities have implemented selective waste collection.

637 recyclers have been formalized (530 of whom have been trained and equipped).

33% of the 555 recyclers trained in “Best practices and business management in recycling”, were women.

24 recycler associations have been created.

54 companies and 5,000 homes donate recyclable material. Three trade and export companies new purchase directly from the recyclers associations that have been created.

Some of the weaknesses identified are associated with the independence given to the recyclers and the associations that they form. Although they are given space to organize their operations and take responsibility for their own decisions, recyclers are not offered the support required to ensure quality of service. A solid waste quality assurance system for recyclers that operate under the umbrella of Ciudad Saludable has still not been established and there is a perception among some of poor response to service failures. According to the organization, work is being carried out to develop a quality service procedure.

Weak leadership skills have also been identified as limiting the performance of recycler associations. To overcome this, Ciudad Saludable is organizing capacity-building courses and offering legal advice and support to obtain credit facilities (through a guarantee fund).

Some sector-specific threats also exist. Recyclers belong to the informal sector, which represents 70% of productive activity in Peru, and which is dominated by groups that are socially excluded and have low levels of education. The inefficiency and vast bureaucracy that exists in a number of municipalities is also an issue. To address this, Ciudad Saludable is working to try and obtain exemption on the first band of municipal tax payments for recyclers.
SUSTAINABILITY

In the last two years Ciudad Saludable has managed to achieve **financial and institutional sustainability** by maintaining its level of income and expenses. This has ensured structural stability and the possibility of being able to grow in the future. In order to link this growth to the application of new projects, the organization has also focused on increasing technical rather than managerial staff.

The organization receives funding from different sources; in 2012, most of its funds came from grants and subsidies, with the remaining amount from public funds and consultancy activities related to waste management that were offered to businesses and government institutions. Of the money obtained from subsidies and services, 32% is used to cover core costs and the rest is used to develop activities.

Currently the three most important **sources of funding** are: donations from international cooperation funds such as the IDB, Codespa Foundation, Skoll Foundation and the Open Society Institute; funds from regional and local governments, and resources from billing for services and projects offered to different private and state corporations (including mining and oil companies).

In 2012, 89% of Ciudad Saludable’s funds came from grants, 8% from public funds and 3% from its own invoices and other income. The initiative is currently looking at ways to improve operational efficiency in order to reduce dependence and institutionalize the model. To help reinforce this consolidation, and expand its strategic partnerships, the Ciudad Saludable Group was established in 2009 by Ciudad Saludable, the company Peru Waste Innovation and Healthy Cities International.

**Operational sustainability** is a key strength and is based on Ciudad Saludable’s ability to adapt to the particular context in which it works. In order to bring recyclers into the formal system and increase the recycling tax, different funding, training and implementation models are being established in response to contextual circumstances. In this respect, there is a growing trend towards the establishment of inclusive businesses that export waste via recycling microenterprises set up by recycling associations, and partnerships (through the Recycling Work Group dialogues) between recycling associations and trading companies.

To further ensure the sustainability of the model, a **system that guarantees a quality solid waste management service system** for recyclers that operate under the umbrella of Ciudad Saludable is
necessary. According to the organization, a procedure is being developed for this but is not yet in place.

Another of the strengths of the model is its high degree of institutionalization in the regulatory framework. Due to the enactment of the Recycler Law, municipalities have to work towards the achievement of previously mentioned objectives. Furthermore, institutionalization is also being ensured by the fact that transfer of money to municipalities is conditioned by their degree of compliance with recycling targets.

The Recycler Law has, however, encountered difficulties in practice. This Act is pivotal to the success of the Ciudad Saludable model but it requires the involvement of municipalities and the application of resources that can be very difficult to attain in some situations. Some municipalities are reluctant to accept that one of their tasks is the integration of recyclers into the formal system, especially as they are a group that is seen by many residents as associated with insecurity and crime. The high turnover rate among local government staff is also problematic. To resolve this issue, measures have been introduced for municipal modernization programs to link the granting of public funds to collection measures that separate waste. Furthermore, in some situations, incentive schemes in which tax is deducted for community members who contribute to the collection of recyclable material are being implemented.
EXTENSION OF THE MODEL

The Ciudad Saludable model has stimulated great interest in other countries and has recently been adapted in Brazil, Chile, Haiti, India and the Dominican Republic. In the Dominican Republic a project to transfer knowledge from Ciudad Saludable to the Network of Business Support for Environmental Protection (RENAEPA in Spanish) is financed by MIF/IDB and RENAEPA.

Looking to the future, Ciudad Saludable can exploit two strengths: the creation of a brand with an international presence and networking with other actors. With regard to the first, Ciudad Saludable is an internationally recognized model that is being exported to other countries. With respect to networking, the establishment of the Recycling Work Group is worth highlighting, as well as and the development and adaptation of the model in different contexts by means of open dialogue with all the stakeholders.

The implementation of the Recycler Law provides the Ciudad Saludable model with great opportunities because it opens the way for the replication of the model throughout Peru. Moreover, the success of the model is assisting its transfer to other countries with the possibility of adaptation in other socio-cultural contexts. The network of contacts established by Ciudad Saludable is also an opportunity for sustainability and the expansion of environmental awareness in the country.

Over the years, the effectiveness and efficiency of Ciudad Saludable’s work has been endorsed by the receipt of numerous awards. In Peru, for example, Ciudad Saludable has obtained the Annual Award for Responsible Management in the Management of Solid Waste from the National Environment Council (CONAM in Spanish). Outside Peru it has won the Energy Globe Award (2008) conferred by the European Parliament for comprehensive models of solid waste in the cities of Peru and Latin America, and the Global Development Network (GDN) Award (2007) at the Ninth Annual GDN Conference (sponsored by the Government of Japan and held in Australia).

The Ciudad Saludable model is highly suitable for adaptation and scale-up. Factors that favor this potential include:

http://www.ciudadsaludable.org/nosotros/reconocimientos.html
The model does not require a large economic investment by the promoter organization.

The model involves local actors from the start thus allowing the project to adapt to the place of implementation.

Several problems are addressed simultaneously: appropriate waste management, fee collection for the service, and the integration of informal recyclers.

Other countries in the region are adapting its framework for solid waste management.

Ciudad Saludable is prepared to support change processes in other regions.

The model also faces replication challenges, among which are:

- The difficulty, in general terms, of finding a similar entrepreneurial and leadership profile in other regions.
- The need to influence national policies.
- Dependency on a cohesive and well-managed organization that offers recyclers training, support and dialogue with businesses and government.
STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robust organizational model.</td>
<td>Fragility/independence of recycler organizations.</td>
</tr>
<tr>
<td>Systematic vision for waste management and integration of recyclers</td>
<td>Quality assurance service system has yet to be developed.</td>
</tr>
<tr>
<td>across the value chain.</td>
<td>Dependency on the leadership of its founder.</td>
</tr>
<tr>
<td>Adaptability of the model to each location.</td>
<td>A model of financial sustainability linked to services and not dependent</td>
</tr>
<tr>
<td>Ability to reach recyclers.</td>
<td>on CSR or multilateral donors has still not been developed.</td>
</tr>
<tr>
<td>Networking with other actors.</td>
<td></td>
</tr>
<tr>
<td>Brand with international projection.</td>
<td></td>
</tr>
<tr>
<td>Ability to influence public policy.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>OPPORTUNITIES</td>
<td>THREATS</td>
</tr>
<tr>
<td>Personal contacts of the founder with government, business, international</td>
<td>Lack of sufficient resources to achieve the requirements of the LGRS.</td>
</tr>
<tr>
<td>audiences, etc.</td>
<td>Recyclers remain informal.</td>
</tr>
<tr>
<td>Recycler Law.</td>
<td>Lack of involvement and high turnover of staff in municipalities.</td>
</tr>
<tr>
<td>Extension to other countries.</td>
<td></td>
</tr>
<tr>
<td>Increased development of the recycling industry.</td>
<td></td>
</tr>
<tr>
<td>Economic growth and consumption in Peru.</td>
<td></td>
</tr>
<tr>
<td>Increased environmental awareness in Peru.</td>
<td></td>
</tr>
<tr>
<td>Existence of international funds such as ‘impact investing funds’</td>
<td></td>
</tr>
<tr>
<td>focused on generating both economic and social impacts and multilateral</td>
<td></td>
</tr>
<tr>
<td>programs interested in the area.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5: SWOT Analysis
This publication can be downloaded in PDF format on the following link: http://www.itd.upm.es/wp-content/uploads/2014/07/INFOGRAFIA_EN_PERU_CS.pdf
The model is **simple** and adapts easily to local circumstances. However, to work with a group as complex as the recyclers, specific knowledge and skills, such as those possessed by Ciudad Saludable, are essential.

The importance of a **value chain approach** and the integration of recyclers in markets for recyclable products.

The need for a **holistic approach** with recyclers that includes economic factors, as well as their health, safety at work, education, etc.

The importance of projects that are **flexible** and can be tailored to local needs while the core work focuses on catalyzing processes to promote waste recycling.

**Service quality** assurance is critical for the sustainability of the model and requires the development of effective procedures for the management of complaints and regular review of results.

Ciudad Saludable has always been aware of the importance of **regulation** for the generation of an inclusive market and has maintained a close relationship with the public administration. This has been a determining factor in regulating waste management in Peru.

**Networking** is a key element of Ciudad Saludable’s work as it draws upon the local knowledge and capacities of all actors involved in waste management. The development of municipal waste management systems is also a participatory process in which all relevant actors are involved from the start.

It is important to **systematize learning** and to devote resources to information-gathering, conducting evaluations and publishing lessons learned.

**Leadership** is critical in the early stages of the model’s implementation.
REFERENCES


The links included in this publication were all accessed in July 2014.
This report is part of the “Partnerships for Innovation in Access to Basic Services” consultancy project carried out by the Innovation and Technology for Human Development Centre at the Technical University of Madrid (itdUPM) for the Multilateral Investment Fund (MIF), a member of the Inter-American Development Bank Group (IDB).

The work on this study was conducted in collaboration with:

© Innovation and Technology for Human Development Centre/Technical University of Madrid (itdUPM) and the Multilateral Investment Fund/Inter-American Development Bank (MIF/IDB). The publications that make up the Partnerships for Innovation in Access to Basic Services study may be reproduced totally or in part, with permission from, and attribution to, the Innovation and Technology for Human Development Centre/Technical University of Madrid (itdUPM) and the Multilateral Investment Fund/Inter-American Development Bank (MIF/IDB).

July 2014

Technology for Human Development Centre - itdUPM
Avda. Complutense, s/n
28040 Madrid. Spain

Authors: Julio Lumbreras Martín
& Luz Fernández García

Support Team:
Leda Stott
Xosé Ramil Ferreiro
Carlos Mataix Aldeanueva

www.itd.upm.es
itd@upm.es
@itdupm

Multilateral Investment Fund - MIF
1300 New York Avenue, N.W.
Washington, D.C. 20577

Basic Services for the Poor Agenda Team

Directed by Carrie McKellogg

Concept: David Bloomgarden, Celia Bedoya del Olmo, Ignacio Fernandez Admetlla

Project Team: Carlos Sanchez, Christina Lengfelder, Claudia Saenz, Svante Persson

WWW.FOMIN.ORG

www.facebook.com/fominbid
www.twitter.com/fominbid