



CASE STUDY

Waste Management in Fortaleza

Healthy City

Climate Ready City

Climate Issue: Waste Management

- Solid waste management represents a global challenge due to its public health and environmental impacts.
- Improper disposal of waste contributes significantly to climate change, from its transportation to final destination.
- Fortaleza, Brazil, generates more than 131,000 tons of waste every month. However, the municipal recycling rate is around 6%.
- In Brazil, waste pickers are responsible for collecting over 90% of recyclable waste. Their essential role in recycling and environmental sustainability is largely overlooked.

Political, Social and Institutional Triggers

- Historically, waste pickers in Fortaleza have faced social exclusion, dangerous working conditions, and lack of representation in local policymaking.
- Waste picker associations had limited access to recycling companies. They were forced to sell materials to low-paying intermediaries.
- Industrial production sites were also far from recycling centers, making it difficult for waste pickers to transport waste across the city.
- Recognizing the need for change, city hall enlisted the help of the Fortaleza Innovation Laboratory (LABIFOR), which tackles urban challenges from a systems approach.
- Since 2019, the Re-Ciclo project has restructured the city's waste management system, targeting higher recycling rates and the socioeconomic inclusion of waste pickers.

Re-Ciclo is a holistic recycling program that combines door-to-door recycling collection via e-tricycle with better wages and working conditions for waste pickers.

Re-Ciclo shows that education, strategic investment and formalized working conditions can transform public perceptions around recycling.

The project has achieved a 500% improvement in income for waste pickers. It has also secured the recycling of 950 tons of materials.

Including the Excluded

The LABIFOR team conducted extensive engagement efforts with Fortaleza's waste pickers and residents to understand the existing landscape of waste management. Waste pickers continue to shape the growth of the program and are the main agents of the program's operation.

- LABIFOR led focus groups with the local waste pickers' association to understand their working routines and challenges. This provided the foundation for co-produced solutions to address dangerous working conditions and mobility constraints.
- From their conversations with waste pickers, LABIFOR launched new waste collection hubs. These "Eco-Points" equip waste pickers with protective gear and workplace protections, improving their image among residents.
- LABIFOR has also co-developed a pilot project for door-to-door waste collection via e-tricycles. This has enabled waste pickers to increase their productivity and earnings.

Enabling Factors

Re-Ciclo has been incorporated into landmark legislation that sets recycling targets and recognizes the contributions of waste pickers. This approach has facilitated public-private partnerships, generating citywide improvements.

- In 2019, Fortaleza's government introduced the E-Catador program, which formalized waste pickers as city employees with access to higher salaries, benefits, and uniforms.
- Waste picker associations continue to manage their own labor and operations. Data sharing and strategic support from the municipality enable associations to increase their collection capacity and offer dignified working conditions.
- To evaluate the feasibility of Re-Ciclo's pilot program for door-to-door collection via e-tricycles, a startup was engaged to manage its first year of operations.
- The municipality aims to achieve a 50% recycling rate by 2031 and has introduced a tax to fund Re-Ciclo's efforts.
- Educational campaigns and the establishment of Eco-Points have raised awareness of recycling practices. This has increased community support for Re-Ciclo and promoted respect for waste pickers.

The Re-Ciclo project was a 2023-2024 finalist for the WRI Ross Center Prize for Cities, a global award celebrating and spotlighting transformative urban change. Information was self-reported by finalists. Learn more at reciclofortaleza.com.br/, prizeforcities.org and wri.org/cities.



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Ongoing Barriers to Success

Funding Gaps

- Initial grants and sponsorships do not provide long-term support to maintain and expand the project.
- The project relies on municipal resources, increasing insecurity during administrative turnover.
- More financial support is needed to ensure better wages and working conditions for all waste pickers in Fortaleza.
- Current funding levels are not sufficient to scale the project to more neighborhoods and to involve more waste pickers.

Cultural and behavioral norms

- Waste picking is often seen as a “dirty” and “undesirable” work. Despite improvement since project implementation, prejudices against waste pickers remain.
- 85% of waste pickers in the Re-Ciclo program are women, who face compounding dimensions of discrimination.
- Waste pickers still face financial insecurity due to fluctuating income and limited additional employment opportunities.
- Although awareness around best waste management practices has increased, consistent and widespread participation in recycling programs is still lacking.
- Many residents do not fully understand the benefits of recycling or lack convenient access to recycling facilities.
- Fortaleza’s municipality aims to leverage partnerships and technological innovation to expand Re-Ciclo and further promote the social inclusion of waste pickers.

Sustaining & Scaling Up:

Re-Ciclo has expanded across the city of Fortaleza and shaped waste collection efforts across Brazil. The project scope has been sustained and scaled up by:

Gaining public buy-in

- Conducting educational campaigns and public events to raise awareness about recycling and proper waste disposal.
- Maintaining transparent communication with the public about the goals, progress, and benefits of Re-Ciclo.
- Offering incentives for residents to participate in recycling programs and citywide waste management.

Withstanding administrative turnover

- Embedding key initiatives into the city’s legal framework.
- Involving multiple stakeholders across the public and private sectors to maintain project momentum amidst changes in municipal leadership.
- Ensuring that project responsibilities are clearly delineated across city agencies.

Scaling up, out and across

- Recognizing waste pickers as essential contributors to the city’s waste management and recycling efforts.
- Establishing private-public partnerships for long-term financial viability.
- Inspiring similar programs in cities and regions across Brazil for a new approach to waste management nationwide.

IN A NUTSHELL

- Proper waste management can improve local recycling rates and climate resiliency.
- Recognizing the work of waste pickers by formalizing the occupation and providing fair compensation is essential.
- Public education campaigns not only reduce the stigmatization of waste pickers, but also make high recycling targets achievable.

WHAT CAN YOUR CITY DO?

CONDUCT focus groups to understand the needs and difficulties of waste pickers.

INVEST in electric vehicles for improved waste collection.

FORMALIZE waste pickers as city employees to enable access to higher salaries and benefits.

PRIORITIZE education to raise awareness around recycling practices and to combat the stigmatization of waste pickers.

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