

RESULTS OF THE RECICLO PROJECT IMPLEMENTED BY THE FORTALEZA MUNICIPALITY WITH THE LOCAL WASTE PICKERS ASSOCIATIONS IN BRAZIL

October 2025

The innovative Re-ciclo project, implemented by the city of Fortaleza (Brazil), consists of a new citizen waste recycling system based on the work of waste pickers associations supported by solar-powered electric bicycles for the home collection of recyclable materials. Waste pickers transport these recyclable materials on electric tricycles, with a low carbon footprint, to eco-points collection centers, where they are delivered to the partner recycling associations. This initiative connects recyclers with people interested in recycling and generates social, gender, health and environmental impacts.



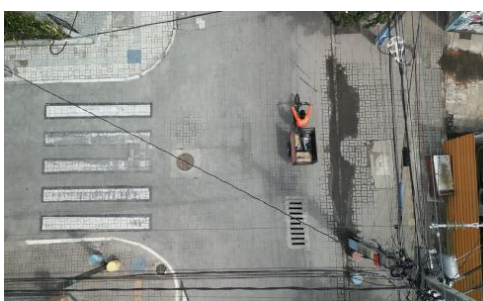
The Re-ciclo project received the grand prize for the 2023-2024 World Resources Institute WRI Ross Center Prize for Cities, which celebrates projects and initiatives building momentum for climate-ready communities.

Like many other Brazilian cities, Fortaleza had a low recycling rate and lacked a structured municipal recycling program. Fortaleza is far from the only city in Brazil lacking recycling infrastructure; over 90% of the country's waste ends up in landfills or dumps. This comes with a significant climate impact. Fortaleza's informal waste pickers (*catadores*) often collected recyclables on foot, using hand-drawn carts. Approximately 8,000 *catadores* operate informally, managing much of the city's waste collection and recycling by selling collected materials to third parties. Waste pickers faced social stigma and earned minimal, unreliable wages.

The WRI website has published an article describing the main features of this innovative project, which invested in improving the working conditions of informal waste pickers to design a new waste management system for the city.

Re-Ciclo has worked to both uplift Fortaleza's *catadores* and expand its recycling infrastructure by redefining how the city manages waste. The Fortaleza Innovation Laboratory (LABIFOR) and the city of Fortaleza developed Re-Ciclo to provide dignified working conditions for waste pickers, establish door-to-door recycling collection via electric tricycles, and increase recycling rates in the community. Focus groups were organized with all 16 waste picker associations across the city. These initial discussions informed the city's decisions to establish the Eco-points and provide *catadores* with e-tricycles.

The Re-Ciclo project was launched in 2021 on a pilot basis with the distribution of 18 tricycles. In September 2022, the project was expanded, with the delivery of four more vehicles. The e-tricycles can carry up to 150 kilograms (330 pounds) of recyclables, covering greater distances at twice the speed of traditional hand-



drawn carts. The Re-Ciclo project collects recyclables door-to-door through waste pickers associated with cooperatives registered with the City Hall.

These waste pickers are provided with electric tricycles equipped with buckets to help them collect more recyclables. Through the program, *catadores* now collect recyclables along specific routes through the city's neighborhoods, stopping by homes and apartments where residents have requested recycling pick-up. The recyclables are deposited at one of dozens of eco-points, a network of collection centers where they are sorted and cleaned by waste pickers and then sold to recycling intermediaries.

The city has already delivered 22 tricycles to waste pickers from 13 associations. Two of them have had an online collection scheduling system since September 2022. Fortaleza residents along Re-Ciclo's collection routes can use their mobile app to easily request door-to-door recycling pickup.

They collect:

Paper: Cardboard, Books, Magazines, and Newspapers;

Plastic: Hard plastic, PVC, Soft plastic, PET;

Glass: Pots, Bottles;

Metal: Iron, Stainless Steel, Lead, Bronze, Aluminum

Appliances: Refrigerator, Stove, Microwave, Washer;

Other materials such as Oil, Styrofoam.

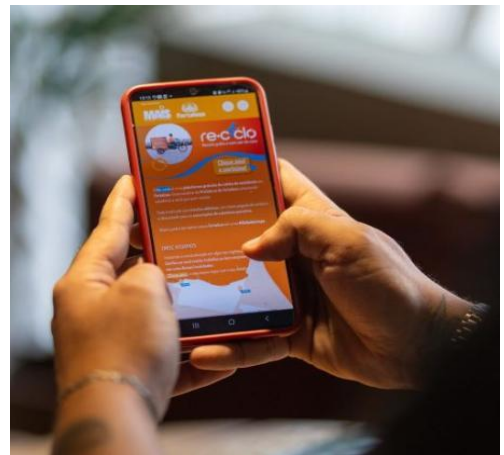
The electric tricycles have an assisted pedal, maximum power of 350 watts, autonomy of 30 km and reach a top speed of 25 km/h. Efficiency in collection results in greater amounts of recyclable material and places Fortaleza as a highlight in the progress of waste recycling. Currently, the index is almost 9%, above the country's average. There is a prospect of expanding the project to all neighborhoods in the city, which would make it possible to achieve a recycling rate of 50% in eight years.

The program also collects data along pick-up routes, enabling *catadores* to track the volume of their collected recyclables and drive better salary negotiations. Re-Ciclo encourages unaffiliated waste pickers to join associations to reach better results and strengthen collective bargaining power.

Thanks to a more stable income and reliable collection monitoring, most workers now receive significantly higher salaries, up to 500% above previous levels. Today, the waste collector who is part of Re-Ciclo earns a daily wage based on performance goals. The waste picker has transportation vouchers, has meal vouchers, and is now valued.

[The results of the Re-Ciclo project are presented by the WRI website with the following key figures:](#) 85% of waste pickers are women; 950 tons of recycling wastes are processed; 500% improvement in income for waste pickers; 541% growth in citywide cycling network; 90 drop-off points for residents.

Re-Ciclo is complemented by a suite of circular economy initiatives in the Mais Fortaleza program run by the city. Re-Ciclo has scaled up rapidly from being an innovative pilot project of the city government to being managed by the city's municipal agencies. Additional neighborhoods for recycling collection, more drop-off points, and more e-tricycles for waste pickers continue to be added. The tricycles, while circulating through the streets, capture public attention and serve as a communication tool to encourage more people to participate in selective collection.



Moving forward, LABIFOR plans to grow its fleet to 150 e-tricycles by December 2024, employing more than 200 *catadores* and serving all 12 of the city's districts. Ongoing work with the [Transformative Urban Mobility Initiative \(TUMI\)](#), which provided funding for the initial pilot program, aims to optimize routes through data mapping and spatial analysis. The team also hopes to equip future e-tricycles with solar panels that will charge them during collection. The city government has set its sights on achieving a 50% recycling rate of all waste over the coming eight years.

To know more

[Re-ciclo Project in WRI article](#)

[Re-ciclo Project in WRI website](#)

[Article in wri.org](#)

[Re-ciclo in ssc4c.org.br](#)

[Re-ciclo in transformative-mobility.org](#)

[Reciclo in leva-eu.com](#)

[Re-ciclo in instagram.com](#)

[Re-ciclo Project in globalhealth.jhu.edu](#)

