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CLEAN CITIES, BLUE OCEAN



Photo: Clean Cities, Blue Ocean



Strengthening Routing and Collection for Improved Waste Management

The Challenge

Reliable waste collection is a core component of a functioning and efficient solid waste management system—a municipal service that prevents waste from leaking into the environment and reaching our oceans.

The World Bank estimates that low-income countries collect only about 48 percent of waste in cities.

Uncollected waste is often managed by households, openly dumped, burned, or, less commonly, composted. Consistent, dependable collection is essential for building sustainable and livable cities, and reducing the amount of waste entering our waterways, but it remains a challenge for cities that don't have the resources—technical skills, financial resources, or staffing levels—to devote to waste management.

Our Approach

USAID's Clean Cities, Blue Ocean program supports local governments with the technical assistance and resources needed to develop and implement locally-led solid waste management systems that effectively manage waste in their cities and prevent plastic from entering the ocean. More specifically, the program supports local governments to develop more reliable and effective waste collection and routing systems that address previously underserved areas, maximize city resources by reducing the costs associated with duplicative or ineffective routes, and decrease the extent of street litter entering the environment and our ocean.

At a Glance

Waste generation rates will **more than double** over the next 20 years in low-income countries.¹

According to the United Nations, **at least 2 billion people** worldwide lack access to solid waste collection.

¹ World Bank. 2012. What a Waste: A Global Review of Solid Waste Management. Accessed January 2, 2023. <https://openknowledge.worldbank.org/handle/10986/17388>

Case Study: Pisco, Peru

Prior to USAID engagement, the coastal city of Pisco had no formal waste collection routes with insufficient coverage across the city. As the city grew, routes developed organically over time with collection workers deciding schedules, frequency, and routes—many times at random, based on the driver's experience. Municipal trucks collected waste from the same streets in some neighborhoods as often as seven times per day, while other neighborhoods received no collection services at all.



Impact

To improve efficiencies, new routing plans were developed in all eight districts in Pisco, expanding waste services to 19 percent more of the population (nearly 12,800 additional residents) using the same collection vehicles—with the same workers, in less time—reaching 100 percent waste collection coverage for the first time. With the optimized routes, the city can collect an additional 12 metric tons of garbage per day. To ensure the success of the routes, USAID worked closely with multiple local government departments, neighborhood councils, and the community to communicate the details and benefits of the service changes to residents. The model that USAID used to optimize routing and collection in Pisco can be tailored to other cities' unique contexts, and the program has initiated similar efforts in Sri Lanka, the Philippines, and Vietnam.

As seen in Pisco, improving waste collection routes has several benefits:



Expanding coverage while improving efficiencies

The new routes are fully operational and have achieved 100 percent waste collection coverage, while also resulting in fewer municipal resources expended.



Reducing street litter

As more households and establishments are reached with collection services—especially in distant neighborhoods—less waste is in city streets that can leak into the environment.



Minimizing climate impacts

With the new routes in place, the distance garbage trucks need to travel decreased by almost 68 percent—and associated idling time; and the distance traveled from the end of the route to the dump decreased by almost 14 percent. More efficient routes also resulted in a reduction in greenhouse gas emissions equivalent to 93.5 metric tons of CO₂ per month or the equivalent of nearly 235,000 miles driven by an average gasoline-powered passenger vehicle.



Enabling broader system change

More efficient routing in Pisco has resulted in residents' trust and accountability in the local government's capacity. Reliable collection has also enabled the foundation for a more holistic solid waste management system, including the promotion of recyclable initiatives in households, businesses, markets, schools, and other large waste generators such as hotels.

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