



CEBU CITY PHILIPPINES

MITIGATING METHANE AND BLACK CARBON FROM THE MUNICIPAL SOLID WASTE SECTOR

Cebu City is the fifth most populous city in the Philippines and the most urbanized centre in the Central Philippines region. The city is subdivided into 80 barangays, each with its own government council. Cebu City is experiencing rapid economic and urban growth and, thus, a rapid growth in solid waste generation. The city joined the Climate and Clean Air Coalition (the Coalition) Municipal Solid Waste Initiative (Waste Initiative) in 2014, partnering with the Institute for Global Environmental Strategies (IGES) to address major waste management challenges and reduce emissions of short-lived climate pollutants (SLCPs) such as methane and black carbon. The city's largest waste challenges include diverting organic waste and constructing a new final disposal site. In early 2017, Cebu City submitted its final work plan identifying how it plans to address these challenges through the Waste Initiative.

CHALLENGES AND OBJECTIVES

The city's landfill, Inayawan Sanitary Landfill, has had a tumultuous existence. After reaching its design capacity in 2010, it became an open dumpsite until Cebu City's mayor ordered a partial closure in 2011. At that point, Inayawan became a waste transfer station and sorted waste was transported to a private landfill 30 km north of the city. Further, the incinerator at the site was shut down shortly after opening; the biogas reactor, designed to treat sewage and leachate, closed due to technical problems; and the leachate pond leaked untreated leachate into the surrounding areas, causing land and water contamination. The current mayor ordered Inayawan reopened in June 2016 due to expensive tipping fees at the private landfill site and the lack of a formal contract between the landfill and the Cebu City administration, but six months later the Court of Appeals ordered Inayawan's permanent closure until the site is fully rehabilitated.

The city generates large amounts of organic waste (approximately 67% of its waste stream). This high organic waste fraction contributes to increased leachate and methane emissions. Although 58 of the 80 barangays have composting plants and material recovery facilities, most of these facilities do not function effectively primarily because the waste is not separated at the source. Further, the city reports that it has a nearly 100% waste collection rate, yet it is common to see waste piling up on streets and in waterways, suggesting an imperfect waste collection structure.

CITY FACTS

Population:
≈ 923,000
Waste Generation Rate:
≈ 0.5 kg/person/day
Waste Collection Rate:
≈ 100%

The **Climate and Clean Air Coalition Municipal Solid Waste Initiative** unites national and local governments, international organizations, and other partners to reduce emissions of short-lived climate pollutants, such as methane and black carbon, from the municipal solid waste sector.



Since 1997, Cebu City has participated in a city exchange with Kitakyushu, Japan under the Environmental Cooperation Network of Asian Cities, through which it has gained support from the Kitakyushu International Techno-Cooperative Association, IGES, and the JPOWER Group/Jpec of Kitakyushu City, to begin addressing these waste-related concerns. Through the Waste Initiative, the city developed a work plan in January 2017 that identifies four main objectives to improve its waste management: (1) implement source separation of waste; (2) promote material recovery facilities and composting facilities; (3) remediate the final disposal site, construct a new sanitary landfill, and prepare a long-term plan for becoming a zero-landfill city; and (4) build a partnership among the barangays to implement an integrated solid waste management plan.

ACHIEVEMENTS TO DATE

To flesh out the planned action items under each objective of the work plan, Cebu City conducted field visits; collected sample data; and held trainings, workshops, and meetings with stakeholders at various government levels. Specifically, the city held workshops in two pilot barangays to understand the challenges and opportunities to effectively implement waste separation and collection at the barangay level.

To promote source segregation, the city recently began a segregated waste collection system, where biodegradables and non-biodegradables are picked up on separate days of the week, and also began enforcing waste management rules. Finally, with help from the Kitakyushu city exchange, Cebu City set up an education program to teach residents about source segregation.

Cebu City has additionally set up model composting projects in partnership with stakeholders in selected barangays. To further incentivize these projects, the city government created a budget to purchase compost fertilizers to be used in green spaces across the city. In addition, two private ventures were established near Inayawan to treat organic and plastic wastes. These city-led compost programs have helped reduce SLCPs by diverting organics from landfills while simultaneously reducing the distance this waste must travel, thereby decreasing transportation-related emissions and costs.

Cebu City also works to engage community members by hosting a series of annual competitions, including an award for the “best environmental barangay.”

In addition to reducing SLCP emissions, these programs have had additional economic and social benefits. Since the city began enforcing penalties for improper waste segregation, it has



Cebu City has been promoting composting at the community level

collected at least \$300,000 USD, with 50% of the fines going to the municipal treasury, 30% to the barangay, and the remaining 20% going to the individual responsible for apprehending the guilty party. The programs also create job opportunities and generate income within local communities, as well as improve working conditions for waste pickers. In one barangay, the compost and recycling activities created approximately 350 jobs in 2011 and provided an additional collective income of approximately \$8,000 USD per month.

ONGOING ACTIVITIES

With its finalized work plan in place, Cebu City is continuing to work with the Waste Initiative on the activities described above.

In addition, the city is continuing its work with the Kitakyushu city exchange and is implementing a pilot program in six barangays to separate special wastes, such as consumer electronics and other household hazardous items.

ABOUT THE COALITION

The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (Coalition) is a voluntary global partnership of governments, intergovernmental organizations, business, scientific institutions and civil society committed to catalysing concrete, substantial action to reduce SLCPs (including methane, black carbon and many hydrofluorocarbons). The Coalition works through collaborative initiatives to raise awareness, mobilise resources, and lead transformative actions in key emitting sectors.

MORE INFORMATION

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