

REACHING NEW HEIGHTS THROUGH ZERO WASTE



ZERO WASTE CITIES ASIA SERIES
Batangas City, Philippines



A *barangay kagawad* (elected officer) at the Sitio MRF of San Andres, Isla Verde. Every *kagawad* in the *barangay* has a *purok* (or community) assignment to spearhead the operation and monitoring of MRFs. PHOTO COURTESY OF MEF

Batangas City's proximity to the Philippine capital, Manila, makes it a perfect spot to visit for short-staying tourists. As the capital of a highly urbanized province with 14 coastal communities, the city is a major recreational, commercial, industrial, and educational center.

The coastal city has a total land area of approximately 28,540 hectares and 105 *barangays*, six of which are located on Verde Island, one of the country's marine reserves, situated south of the mainland. Getting there takes 1 hour and 30 minutes by boat or 25 minutes by ferry boat from the Batangas City Port. As of 2020, Batangas City has a population of 351,437. The figures easily inflate on weekends when visitors flock to the city's tourist destinations for a quick respite from the daily grind.

LOCAL EFFORTS

Faced with the environmental pressures from the growing economic activities, the city had been implementing the provisions of the Ecological Solid Waste Management Act of 2000 or Republic Act (RA) 9003 and had developed its own *barangay* environmental code even before entering into a partnership with Mother Earth Foundation (MEF) for Zero Waste program implementation. It is one of the first cities in the country to have progressive policies on, and good implementation of, waste management. However, it was concerned about the growing garbage in its landfill.

In 2010, the city crafted its 10-Year Solid Waste Management Plan in compliance with RA 9003. The crafting and implementation of the plan is overseen by the City Solid Waste Management Board (CSWMB), which

is in charge of planning and designing interventions, and conducting public information campaigns.

To help the city reduce or manage the waste generated by tourism, the local government passed the Batangas City Environment Code (E-Code) or Ordinance No. 16 Series of 2010. The E-Code covers the regulation of single-use plastics and styrofoam and mandates the construction of materials recovery facilities (MRFs) in each *barangay*, creation of the *Barangay* Ecological and Solid Waste Management Council (BESWMC), and training of village officials and residents on at-source waste segregation. Every village was mandated to adopt the Batangas City E-Code and each of the *barangays* also has its own BESWMC.



A caretaker at Poblacion 1 MRF planting vegetables. PHOTO COURTESY OF MEF.

IMPLEMENTATION CHALLENGES

Although the whole city was implementing the city's solid waste management plan, the implementation was strictest in four *barangays* on the mainland — those in the city center, or the poblacion, which is the city's commercial center. Implementation was more lax in the other *barangays*, including those on the island. Even in *barangays* with more lax implementations, many of the residents were adhering to the segregation policies. However, there were residents who were disillusioned because they thought their segregated waste was being mixed together during hauling, causing many of them to backslide.

Moreover, tourists posed challenges to program implementation. Unaware of the city's plastic-free and waste segregation regulations, they brought plastic packaging to the city and were not as mindful in disposing of their waste. They also produced more waste than the locals.

The problem with program implementation was more pronounced in Verde Island, being a tourist destination and an island. Besides guests being less mindful of their waste and not following regulations, the island faced unique challenges. Verde Island is far from the landfill, thus the dry waste (residuals) had to be brought to the mainland for disposal. Transportation, however, was very costly, hence, transporting the waste to the mainland was irregular and infrequent, burdening the island's waste management system.

While the *barangays* both on the mainland and the island had their own MRFs in compliance with the provisions of the law, a good number of these facilities did not function as intended by the law, but rather merely served as a containment area for dry waste. Wet or biodegradable waste did not reach the MRF — they were being disposed of in open spaces.



MRFs in Zero Waste sites such as this are made more beautiful by lush gardens. PHOTO COURTESY OF MEF

ZERO WASTE PROGRAM IMPLEMENTATION WITH MEF

The partnership with MEF for the provision of technical support in program implementation in 10 *barangays* including the six in Verde Island, enabled the city government to establish a structure that would help them maximize the benefits of the E-Code and enhance and fully implement its solid waste management plan. The goal was to reduce waste to lessen the city's dependence on the landfill.

The city followed the 10-Steps to Community Zero Waste Program Implementation developed by MEF. As part of the program, they conducted house-to-house surveys and interviewed the local officials and community leaders to have baseline information on the 10 *barangays* covered by the partnership. They likewise rolled out awareness campaigns. In March 2020, they were piloting door-to-door segregated waste collection when the COVID-19 pandemic challenged its implementation. Because of the lockdowns imposed by the national government, regular waste collection was disrupted on the project sites both on the mainland and the island.

To address the problem, *barangay* officials designated collection points where households could bring their segregated waste following a predetermined schedule to avoid human-to-human interaction and prevent the spread of COVID-19. The waste at the collection points were then picked up by waste collection trucks, likewise following a predetermined schedule.

Meanwhile, households on Verde Island were required to adhere to the waste segregation rules and advised to bring their waste to the MRF.

While waste collection was disrupted, the government-imposed lockdowns did not stop Batangas City from pushing through with their Zero Waste education campaign. Together with MEF, the city government held online education training for village officials about waste segregation, composting of organic waste, and the benefits of having their own MRFs. They also used social media to share information to the communities.

"We had to resort to online and mobile communication instead," said Prax Rivera, Project Officer of MEF. "But it was not as effective as the in-person activities we usually do."

POST-LOCKDOWN PROGRAM IMPLEMENTATION

When the national government eased mobility restrictions in 2022, Batangas City immediately started intensifying their information campaign by distributing flyers house-to-house. Representatives from the city government noted that the house-to-house interaction allowed them to readily answer questions and provide information. The flyers also provided more substantial information than those shared on social media.

The local government also resumed the training of village officials and reactivated the BESWMC to monitor the segregation and collection of waste. Moreover, the *barangays* worked on transforming their MRFs to become fully-operational. Besides the containment area for segregated dry waste, a fully operational MRF also has a composting area for biodegradable waste. In places where space is not a problem, MRFs also has a garden. The compost produced is used as garden soil enhancer.



Top and bottom: In-person information campaign. PHOTOS COURTESY OF MEF



Realizing the importance and benefits of composting, the city encouraged the households to compost their own waste following the training provided by MEF.

The City Environment and Natural Resources Officer (CENRO) likewise held meetings with the *barangays* in Verde Island to resolve the transportation of dry waste from the island to the mainland for disposal in the landfill. Because the *barangays* find the cost of transportation prohibitive, the CENRO has agreed to foot the bill. *Barangays* with enough waste to fill a boat just need to coordinate with the city for hauling. A system was likewise put in place: the *barangays* bring the waste to a designated area (where the boat could dock) and the waste will then be transported to the mainland, where a truck awaits for immediate dispatch to the landfill.

MONITORING

Monitoring is a strong component of Batangas City's Zero Waste program implementation. Since the lockdowns were eased, the *barangay* and the CENRO started conducting regular daily monitoring of project implementation to ensure that the households are segregating their waste and door-to-door waste collection is properly implemented.

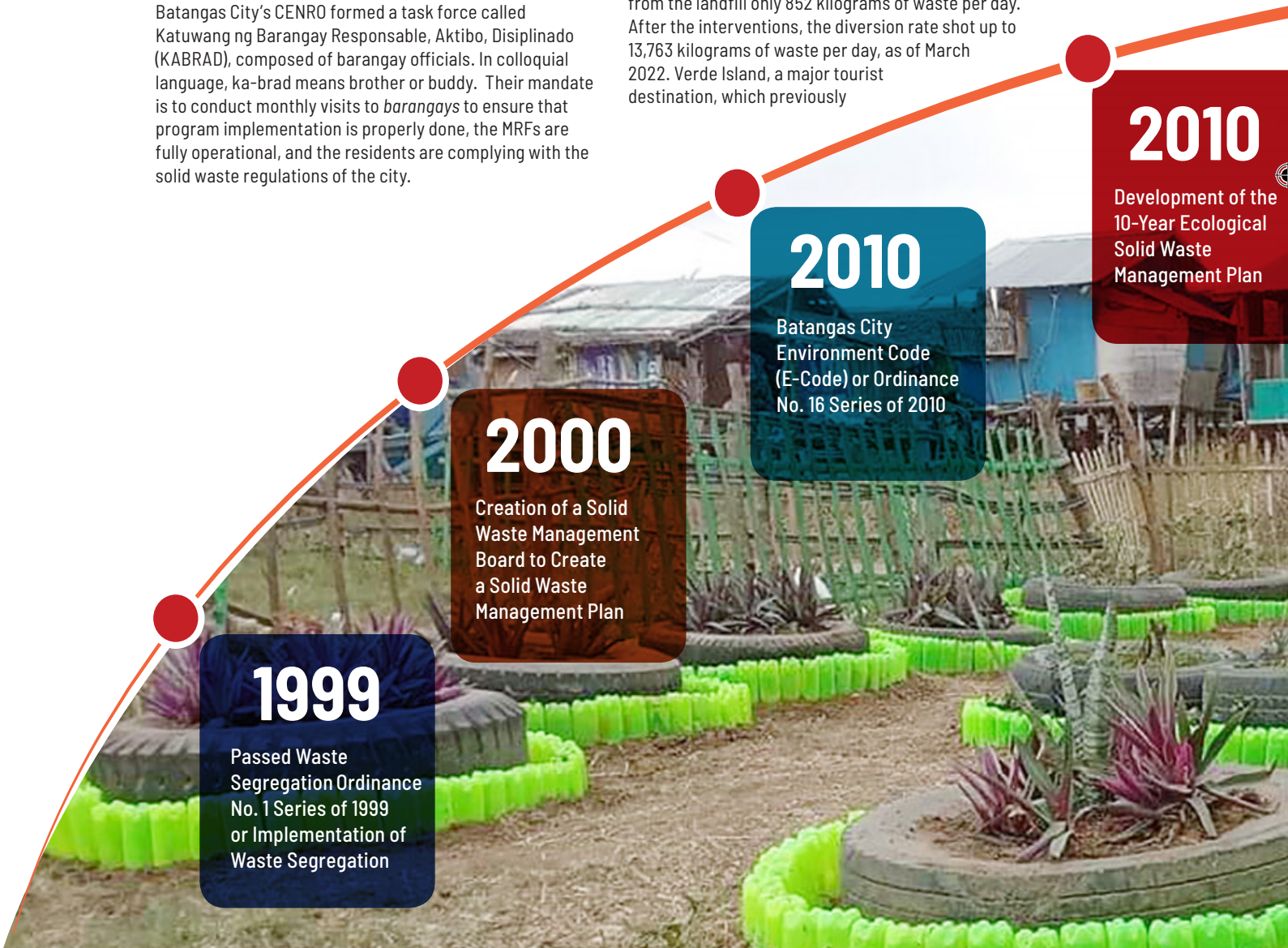
Moreover, recognizing that village officials play a vital role in increasing the compliance rate on waste management, Batangas City's CENRO formed a task force called *Katuwang ng Barangay Responsable, Aktibo, Disiplinado (KABRAD)*, composed of *barangay* officials. In colloquial language, *ka-brad* means brother or buddy. Their mandate is to conduct monthly visits to *barangays* to ensure that program implementation is properly done, the MRFs are fully operational, and the residents are complying with the solid waste regulations of the city.



Coastal cleanup.
PHOTO COURTESY OF MEF.

IMPRESSIVE RESULTS

Before the partnership, participating villages diverted from the landfill only 852 kilograms of waste per day. After the interventions, the diversion rate shot up to 13,763 kilograms of waste per day, as of March 2022. Verde Island, a major tourist destination, which previously



had a waste segregation compliance rate of only 30%, recorded a 70% compliance rate by 2022. The mainland *barangays* which already had a high compliance rate of 80-90% even before the project started, went back to having high compliance rates, after backsliding during the pandemic.

“Compliance rates in the four mainland *barangays* included in the program were already high when the program started. The program really just deepened the residents’ understanding of the intentions of the law, their roles as residents, and the importance of waste management,” said Rivera.

What the program did, besides helping solve the issues in Verde Island, was institutionalize composting. “After the program, more and more households in the mainland practiced home composting, while nearly every household in Verde Island has their own composting system and even eco-sheds to keep their dry waste,” Rap Villavicencio, MEF Project Manager, said. “Those without space are being catered to by the community MRFs.”

Oliver Gonzales, City ENRO, noted the significant improvement in recycling, especially in small villages,

because of the intensified awareness campaign and training of village officials. “It (information campaign) allowed the residents to understand the importance of waste segregation and recycling,” he said. “They learned that you don’t always have to dispose of something that is no longer of use to them because it may benefit others.”

Gonzales also emphasized that single-use plastics prevent the city from fully implementing Zero Waste. He added that the government is looking at addressing this challenge and reducing the city’s dependence on these problematic materials. Also in the pipeline is the establishment of an MRF with a biodigester, which is a good unit for processing cooked food and other organic waste, for the other 24 *barangays* not included in the partnership with MEF.

“Solid waste management is a continuous learning process,” Gonzales said. “It is a multisectoral process and we need the cooperation of everyone, especially the residents and establishments. We need the help of the people. More importantly, we need to sustain the IEC campaigns to inculcate the importance of Zero Waste in our city and for us to better appreciate the importance of NGOs (non-governmental organizations) in realizing our vision.”

2019

Start of Zero Waste Program with Mother Earth Foundation

2020

Start of the COVID-19 Pandemic

2021

Resumption of halted components of Zero Waste implementation



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