

Partnership for Sustainable Communities

through waste management

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The Philippines Is Shutting Down This Resort Island Because of Water Pollution

President Duterte has likened Boracay, once famous for its pristine waters, to a "cesspool."

Over the past few decades, Boracay has become a major tourist hotspot, leading to the rapid and unregulated development of the island's tourism industry. With that development come a massive environmental problem.



One survey found that around 85% of residential and business properties on Boracay did not have proper, authorized sewage facilities and were pumping waste into the sea, CNN reported. And though the island produces 90 to 115 tonnes of trash daily, its infrastructure can only handle and remove 30 tonnes a day.



With more than 2 million visitors to Boracay last year, the island is generating 90 to 115 tonnes of trash per day.



CARRYING CAPACITY OF BORACAY ISLAND USING WASTE MASS FLOW ANALYSIS

INTRODUCTION

- 336%** Increase in tourist arrivals 2007 vs 2017 (Dept. of Tourism, PH)
- 45%** Land allocated Commercial and Tourism Areas (Municipality of Malay, 2014)
- 10 Tons of wastes in 2 days** Waste generated in "Laboratory" 2017 by 40,000 tourists (Cause for a New Coast, 2017)

OBJECTIVES

- Identify waste parameters in Boracay Island.
- Determine limiting waste factors in Boracay Island.
- Determine suitable life of waste facilities, estimate recommendations for...

METHODS

- Assessment of waste management practices (Dec 2016)
- Waste Analysis and Characterization Study (Jan to May 2017)
- Waste Mass Flow Analysis (June 2017)

RESULTS AND DISCUSSION

IWWG - ARB 2019 BEST POSTER AWARD

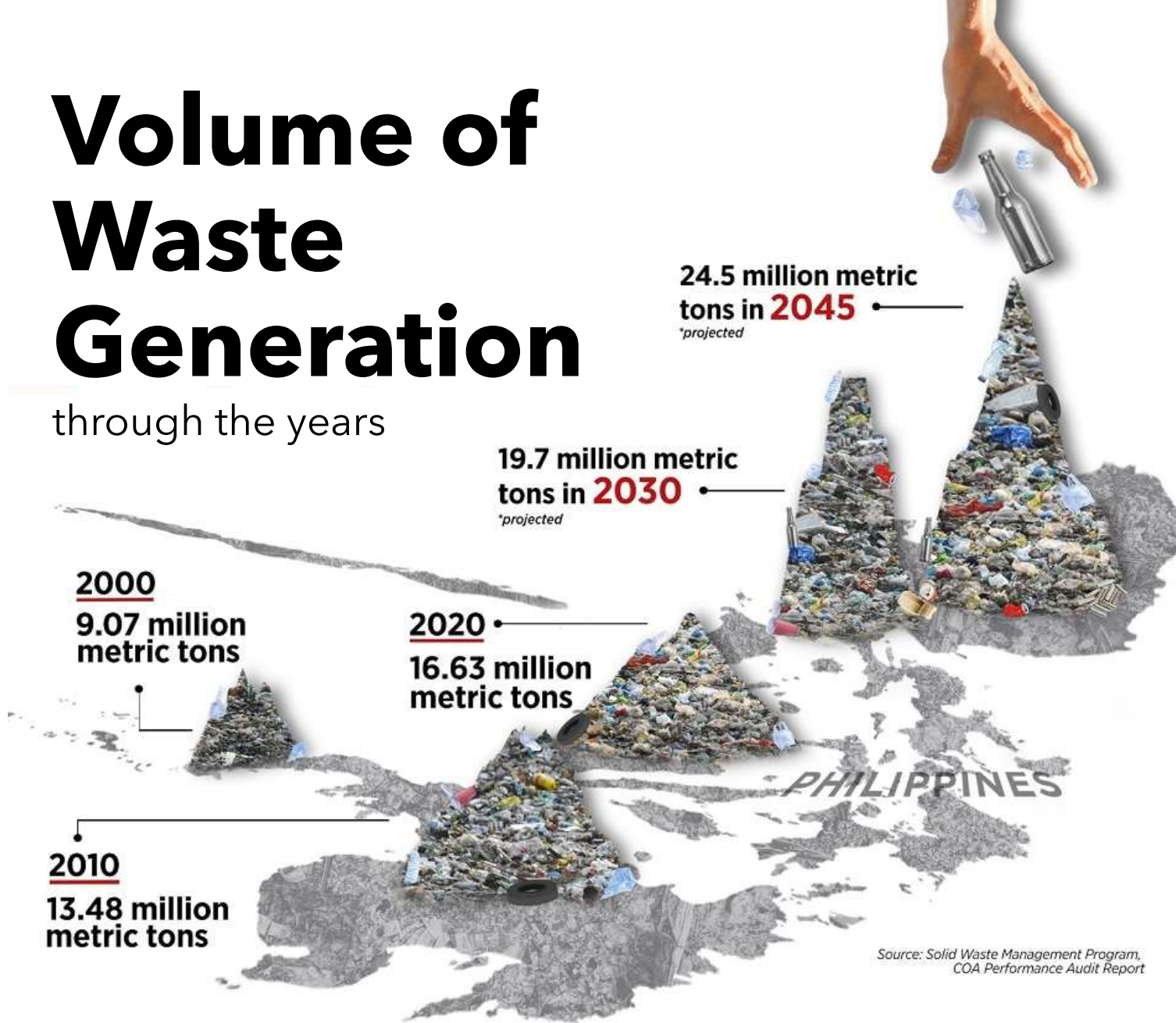
Presented to: **Dr. Arjun and Maria Antonia N. Tanchuling**

For their research paper: **CARRYING CAPACITY OF BORACAY ISLAND USING WASTE MASS FLOW ANALYSIS**

Presented by: **Dr. Arjun and Maria Antonia N. Tanchuling**

Volume of Waste Generation

through the years



Highest Ocean Plastic Waste Polluters

(annual estimation in metric ton)



It is estimated that 1 million metric tons of plastic waste enters the ocean every year, out of a total of 87.5 million metric tons.

This is particularly prevalent in tropical archipelago regions, which have a higher waste emission due to their relatively small land surface compared to the length of their coastline and high precipitation rates, which increase the likelihood of plastic waste being washed into the ocean.

LGU Waste Challenges



- Increasing waste generation - Urbanization, Population & consumption
- At source segregation
- Backyard burning / Littering

- Need to increase collection rate
- Increasing costs (Hauling costs)
- Status of roads

- Sustainability of operations / closing of smaller brgy-run MRFs
- Working environment of sorters

- Logistical challenges (O&M, coding, etc.)
- Distance to SLFs
- Increasing costs (Hauling costs)

- Environmental compliance
- Site conditions
- Sustainability of facilities
- Increasing costs (Tipping Fee)

**100
(Generated)**

**60 (Collected)
40 (Open Envi)**

**-10 MRF
-20 Informal**

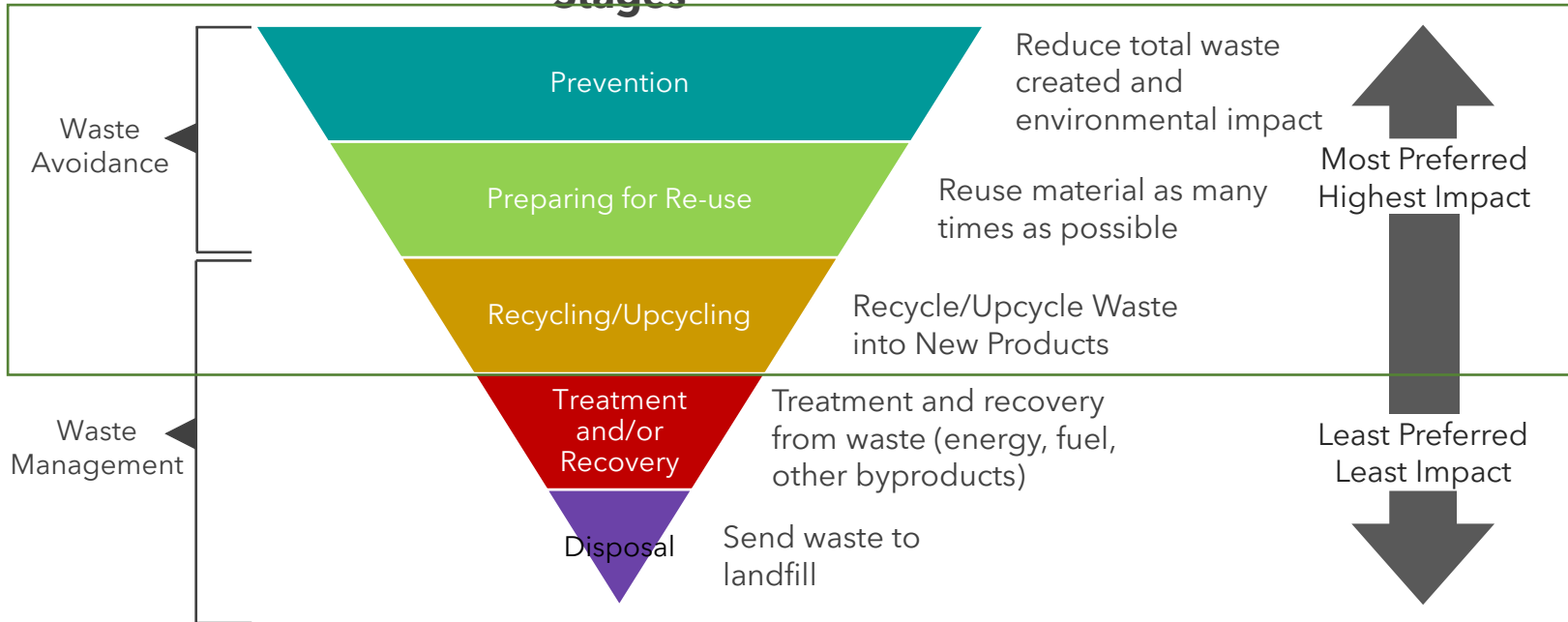
**50 (Transport)
20 (Open Envi)**

**50 (Disposed)
30 (Diverted)
20 (Open Envi)**

Waste Management Hierarchy



Stages



Encompasses the systematic administration of activities which provide for segregation at source, segregated transportation, storage, transfer, processing, treatment, and disposal

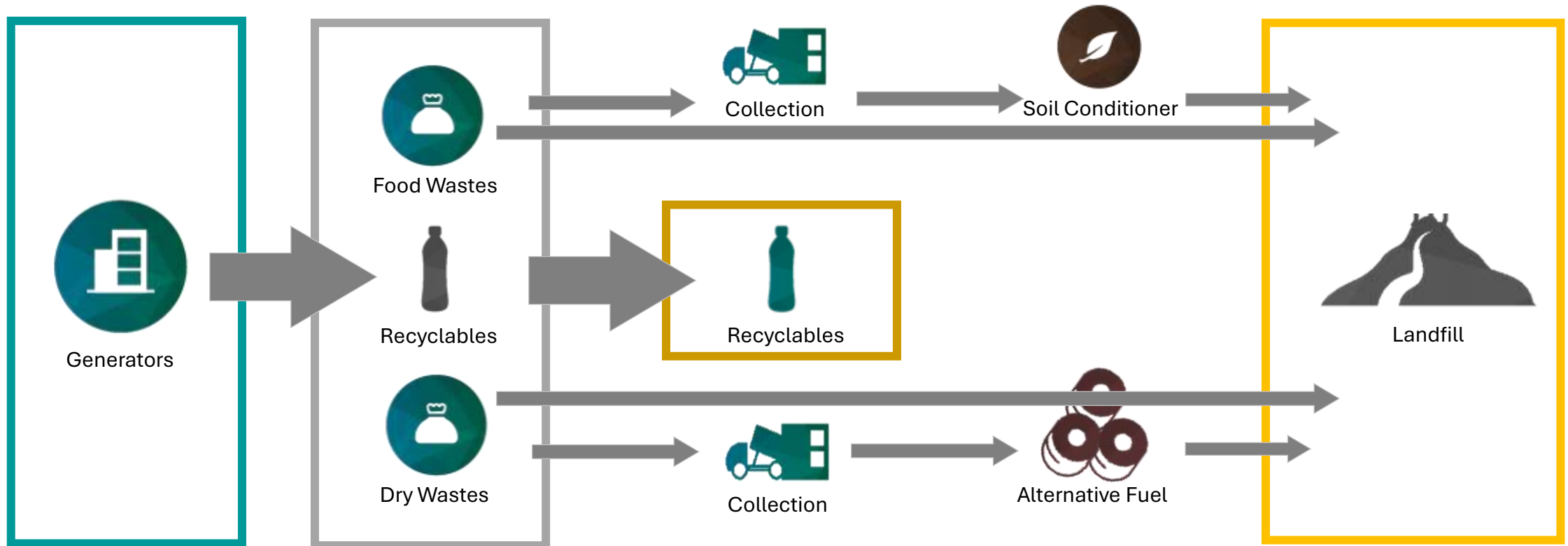
ECOLOGICAL SOLID WASTE MANAGEMENT ACT OF 2000 (REPUBLIC ACT NO. 9003)

- protection of public health and environment
- maximize the utilization, conserve and recover valuable resources.

EXTENDED PRODUCER RESPONSIBILITY ACT OF 2022 (REPUBLIC ACT NO. 11898)

- Environmental responsibility of producers to the life-cycle of products
- Focuses on post-consumer or end-of life stage

Key Success Factors



- **WACS (at source)**
- Policies on waste reduction
- Strengthen IEC Campaigns

- Ensure at source segregation
- **Minimize cross contamination of resources**

- **Waste to Value/ Waste to Worth Infrastructure**
- Policy implementation on dedicated collection for wet and dry wastes
- **Maximize EPR programs**

- **Recovery of alternative fuel and soil conditioner**
- **Potential recovery of other recyclables**
- **Prefer recycled/ upcycled products**

- **WACS (end of pipe)**
- DENR accredited sanitary landfill



1. SEGREGATE



2. EXCHANGE

BEST TRASH TO CASHBACK



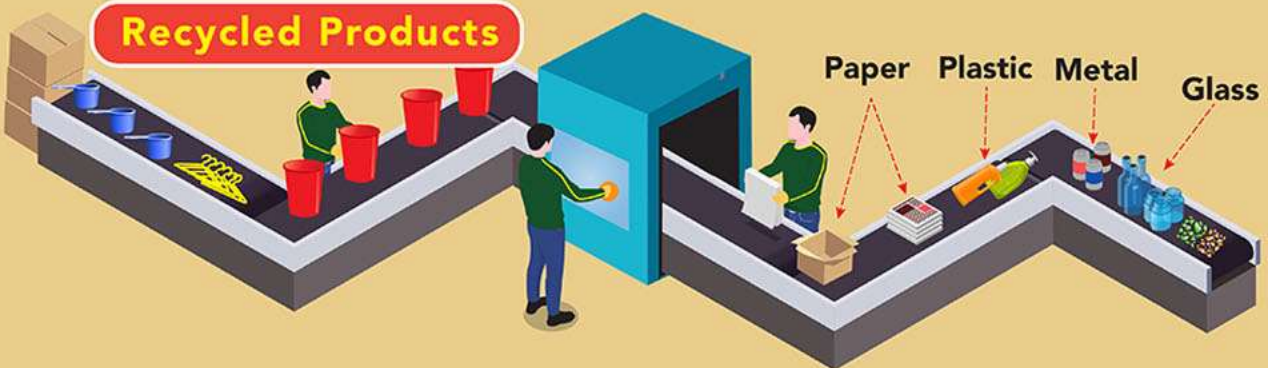
SAVING THE ENVIRONMENT WHILE HELPING THE COMMUNITY, — ONE RECYCLABLE AT A TIME

5. RECYCLE



4. COLLECT

3. REDEEM



TRASH TO CASHBACK COMPONENTS

WHO ARE INVOLVED?

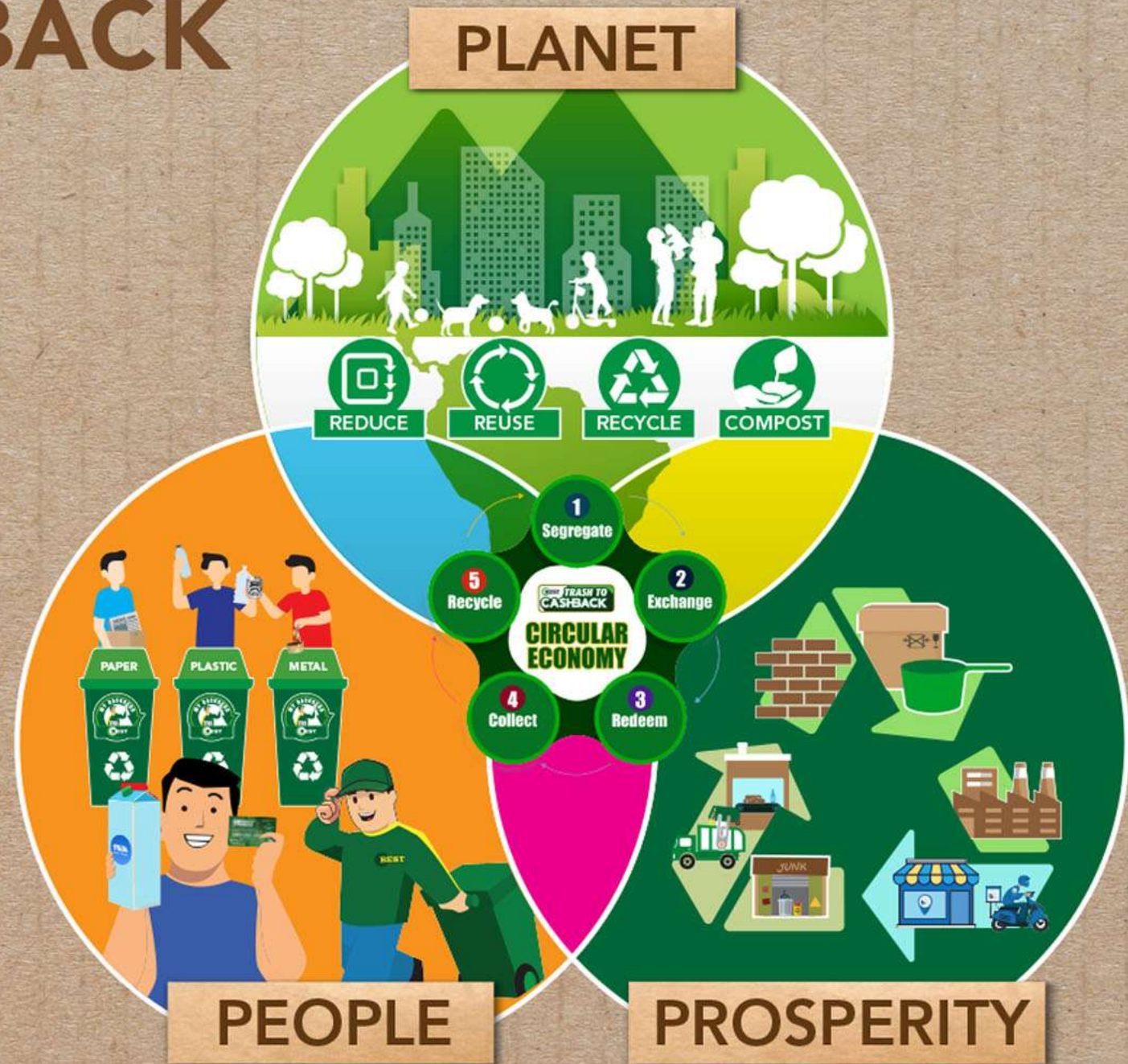
The Trash to Cashback Program connects Eco-Warriors (e.g., individuals, companies, LGUs, etc.) and waste management providers (e.g., recycling and upcycling partners, sanitary landfill operators, etc.) towards a closed loop system that enables the former to help the environment by exchanging their recyclables for incentives, while the latter is able to prolong the lifespan of these resources.

WHAT IS THE END GOAL?

To reduce the amount of generated recyclable wastes that are leaked in bodies of water and landfills through sustainable and efficient means.

HOW CAN IT BE ACHIEVED?

By rewarding individuals who continuously exchange their segregated recyclables, we are able to develop behavioral change within the individuals and communities involved. By recycling, repurposing, and reusing our resources, we are able to bring them back to the supply chain as new products with a new purpose.

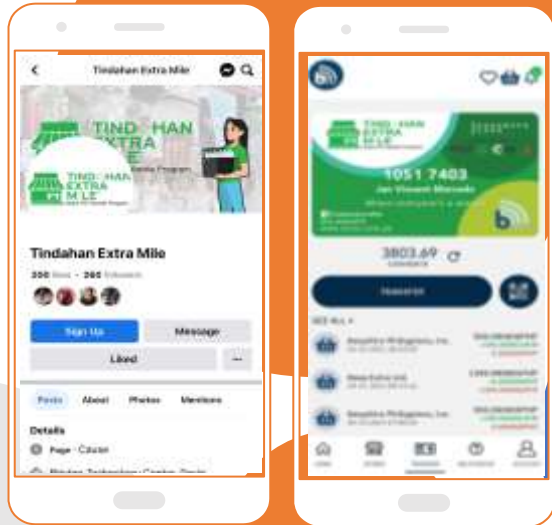




Collection for Recycling in Every Street and Corner

TEM is a World Without Waste program partnership paving the way for households to collect and recycle PET bottles and other recyclables through micro-retail stores empowerment.

3 Easy Steps!



1. Enroll and Activate



2. Collect and Segregate



3. Earn Rewards, Redeem, and Learn

Our bottles can have many lives



Coca-Cola PH strengthens recycling presence in Bacolod, 500 stores to join Tindahan Extra Mile

BY MANILA BULLETIN
Mar 13, 2024 10:36 PM



Coca-Cola Philippines, in partnership with Basic Environmental Systems and Technologies, Inc. (BEST) and the Philippine Association of Stores and Carinderia Owners (PASCO), has launched the Tindahan Extra Mile (TEM): Balik PET Bottle Program in Bacolod City.

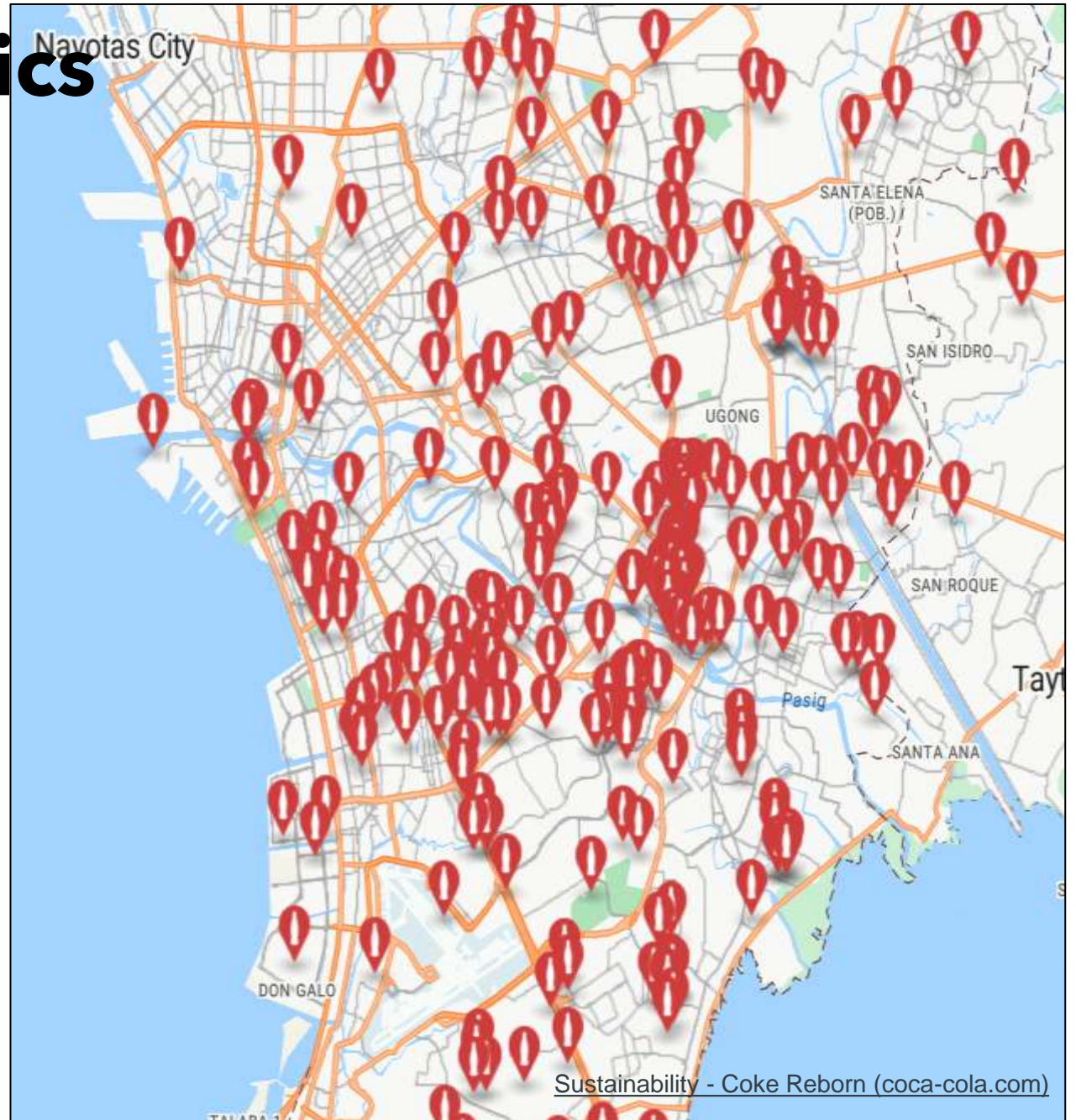
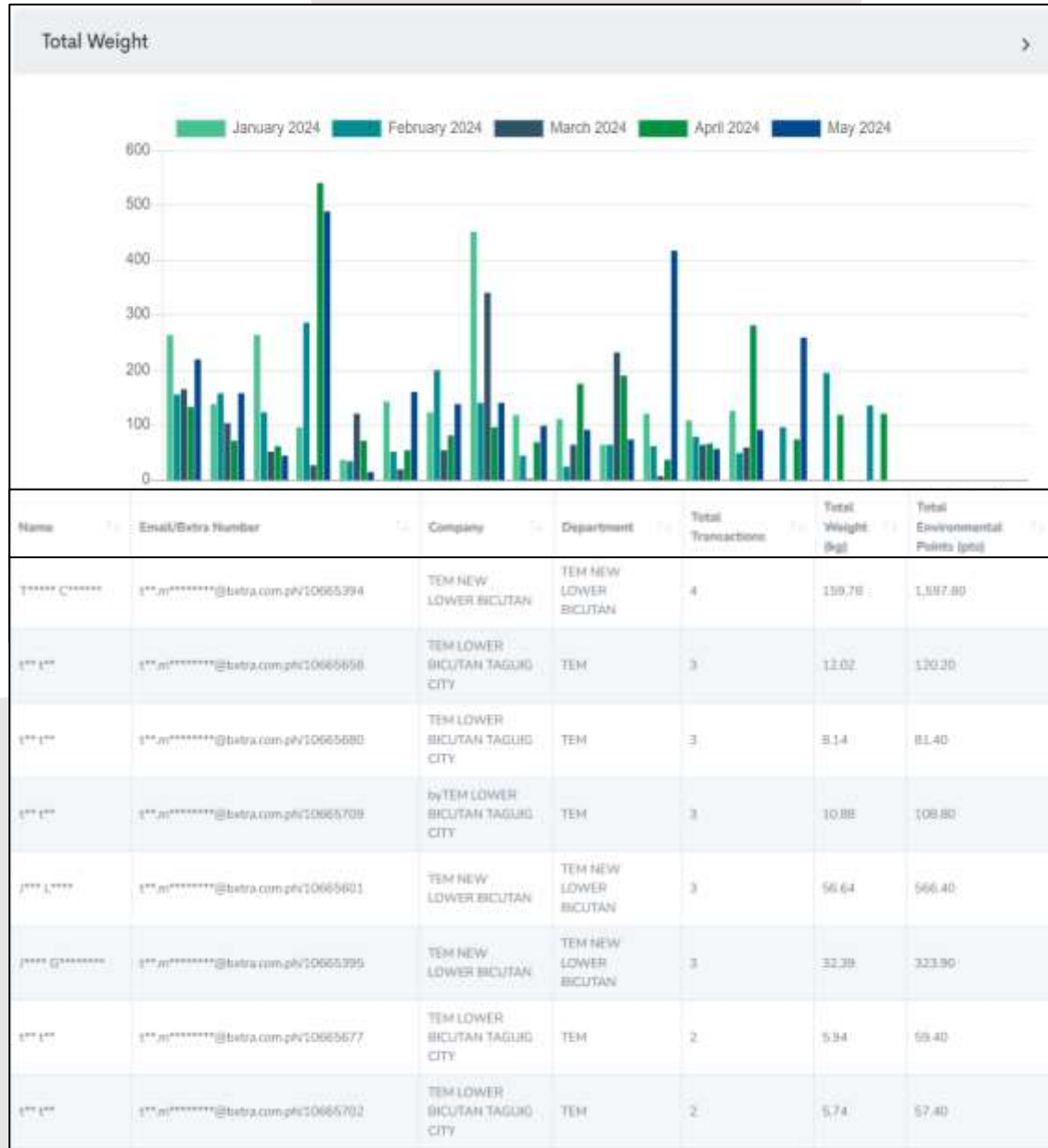


Over 3,500 TEMilers from Metro Manila and Bacolod

70 Collection Hubs in Metro Manila and Bacolod

46 tonnes of PET bottles delivered to PETValue Philippines

Info Systems and Analytics



Sustainability - Coke Reborn (coca-cola.com)



“ Hindi hadlang ang mainit na panahon sa tamang segregasyon. ”

CONGRATS
Jeziel Recierdo
TEMiler, Hagonoy

Total Amount Sent **₱6,000.00**

TINDAHAN EXTRA MILE
Beli PET Bottle Program

2023 Top Temilers

TOP 1
Ida Asiman
Taguig City

840.1 kg

444.85 kg

TINDAHAN EXTRA MILE
Beli PET Bottle Program

Panaad Festival 2024
Bacolod



Payment Success

Payment Amount **₱800.00**

WOW!

item	Maynilad Water
Account Number	₱800.00
Amount	Processing
Ref / Token No.	

Surprise! You've earned some rewards!

Congrats!

“ Ako ay lubos na nagpapasalamat sa Coca-Cola Philippines, PASCO National at Mandaluyong Chapter, BEST, at sa buong Tindahan Extra Mile team. Malaking tulong po ang aking nakuhang cash prize para sa aking negosyo. Muli po akong nagpapasalamat sa lahat mula sa kaibuturan ng aking puso. ”

GILBERT LOBRIDO
PASCO Member, Mandaluyong Chapter



End of pipe WACS (CDO), 2023



TransHub WACS for UBC, 2023



TEM Program



BEST TTCB Collection Hub



PETValue Philippines Corp, 2023



WE NOW HAVE
3500
TEMilers!

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