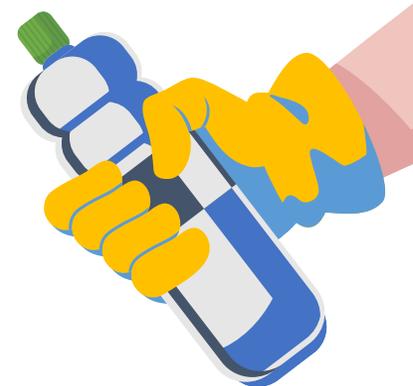




# MARIKINA CITY

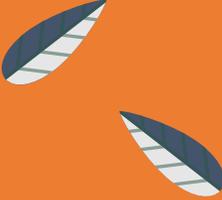
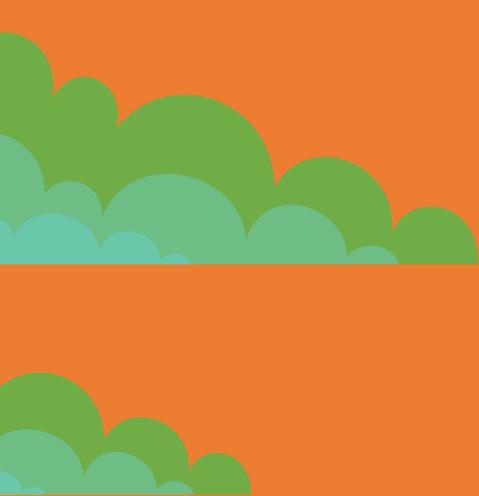
## Ecological Solid Waste Management



# OVERVIEW

- 1 INTRODUCTION
- 2 MARIKINA ECOLOGICAL SOLID WASTE MANAGEMENT
  - A. SEGREGATION
  - B. STORAGE AND RECOVERY
  - C. PROCESSING, TREATMENT, AND DISPOSAL
- 3 CIRCULAR ECONOMY & EPR LAW
- 4 CONCLUSION





*Salus populi suprema lex esto*

the welfare of the people shall be the supreme law



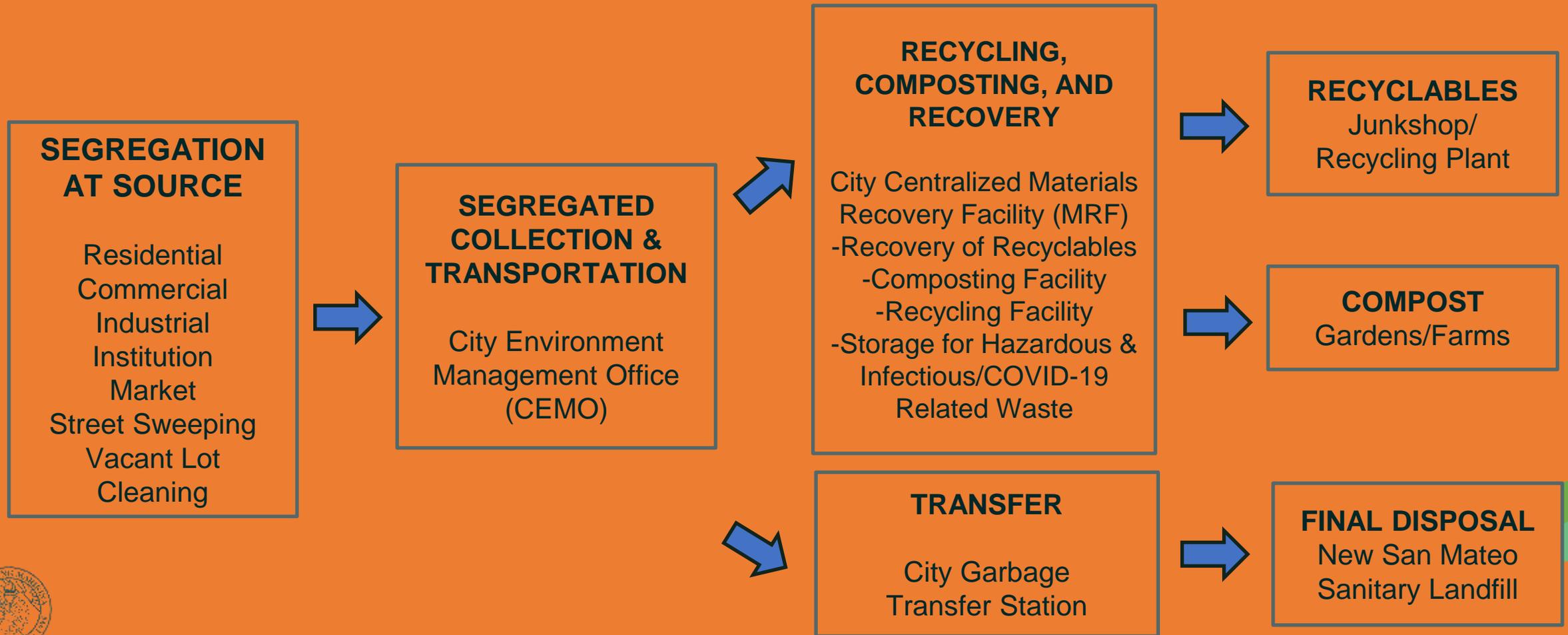


# ECOLOGICAL SOLID WASTE MANAGEMENT SYSTEM

*waste reduction, resource conservation, and  
overall waste management*



# MARIKINA CITY SOLID WASTE MANAGEMENT SYSTEM



# SEGREGATION



## SEGREGATION AT SOURCE

- enforced segregation at the source for all household, institutional, industrial, and commercial garbage through City Ordinance 46 Series of 2002, pursuant to RA 9003 (Ecological Solid Waste Management Act of 2000)



# SEGREGATED COLLECTION AND TRANSPORTATION: DOOR-TO-DOOR GARBAGE COLLECTION



# SEGREGATED COLLECTION AND TRANSPORTATION: SCHEDULED BY TYPE OF WASTE

TYPE OF WASTE	DESCRIPTION	FREQUENCY
Recyclables	Paper, plastics, glass, metals	once a week
Biodegradables	Kitchen waste, garden waste, agri waste, livestock waste	twice a week
Residuals	Cigarette butts, soiled tissue paper, diapers, sanitary napkins, coated paper, food contaminated paper, heavily soiled plastics, doypacks, sachets, wrappers, tarpaulins, grocery & food bags, rags, slippers and rubber mats	twice a week
Special Waste "Kuyagot"	Bulky waste (bulky yard waste, rubber tires, construction debris except demolition debris); hazardous waste (paint cans, white goods – refrigerator/washing machines, consumer electronics – TVs/radios)	once a week
Used Cooking Oil	Household used cooking oil	once a month
Food Waste	Left-over foods and kitchen waste	daily
Healthcare Waste	Household healthcare waste (masks, gloves & other PPEs)	thrice a week
Household Hazardous Waste	Busted lights, dry cell batteries, cleaning chemicals, laptop & gadget batteries & power banks, vehicle batteries, pesticide & herbicide containers, household healthcare waste (syringes)	once a week



## SEPARATE WASTE COLLECTION: FOOD WASTE

- daily collection of wastes from households/eateries/restaurants
- transportation of wastes to city composting facility



*Food Waste Collection Truck*



## SEPARATE WASTE COLLECTION: USED COOKING OIL

- monthly collection
- transport of used oil to city recycling facility



*Used Cooking Oil*

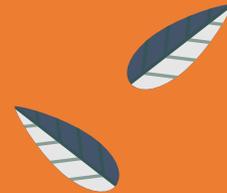


*Used Cooking Oil Collection Vehicle*



## SEPARATE WASTE COLLECTION: HAKOT KUYAGOT

- special waste: worn-out furniture, appliances, rubber tires, yard waste, electronics, paint cans, etc.
- weekly collection
- Garbage Transfer System:
  - recyclable and biodegradable wastes to the city MRF
  - residuals to the sanitary landfill



# SEPARATE WASTE COLLECTION: HAKOT KUYAGOT



# STORAGE AND RECOVERY

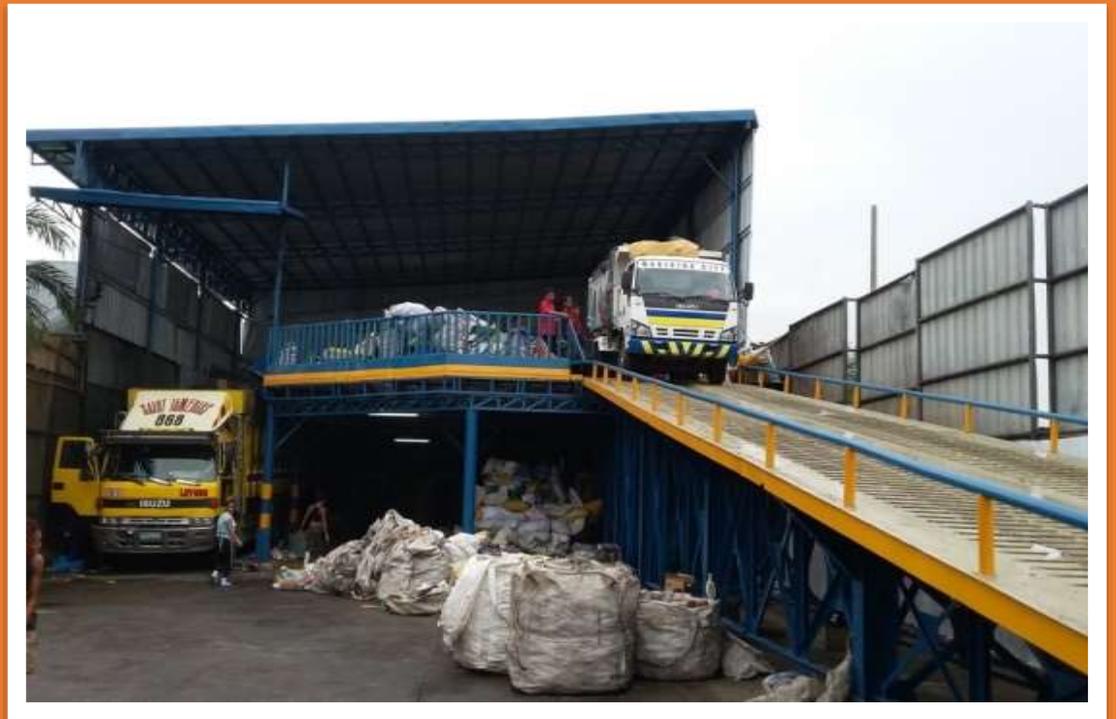


## MATERIALS RECOVERY FACILITY

- processing of solid wastes
- transfer, sorting, and drop-off of dry materials



*Centralized Materials Recovery Facility for Dry*



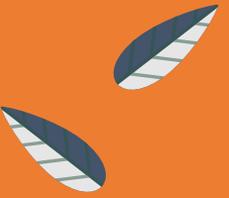
*Elevated Recovery Areas Cum Transfer Station*



# PROCESSING, TREATMENT, AND DISPOSAL



## RECYCLING: EXTERNAL RECYCLING PLANT



- processing of recovered materials such as:



# RECYCLING: INTERNAL RECYCLING METHODS POTS, BRICKS, SACKS THROUGH STYRO-PLASTIC DENSIFIER



*Schematic Diagram of Recycling of Used Cooking Oil*



# RECYCLING: INTERNAL RECYCLING METHODS

## POTS, BRICKS, SACKS THROUGH STYRO-PLASTIC DENSIFIER



*Recycling Process of Collaterals*



# RECYCLING: INTERNAL RECYCLING METHODS

## POTS, BRICKS, SACKS THROUGH STYRO-PLASTIC DENSIFIER

- styro or EPS (expanded polystyrene foam), plastic bags, and other collaterals are repurposed into pavers, plant pots, and sacks using a densifier



# RECYCLING: INTERNAL RECYCLING METHODS

## CHAIRS THROUGH PLASTIC FACTORY

- flexible plastics such as sachets, wrappers of biscuits, candies, chips, etc. are turned into school chairs using plastic factory



*Plastic Factory*



*School Chairs Made from Recyclable Waste*



## COMPOSTING: CHIPPER

- yard waste (mainly from tree pruning operation of the city) are shredded and used as organic materials for composting
- branches with more than 2" in diameter are distributed to business establishments for fuel wood



*Collection of Tree Trimmings*



# COMPOSTING: CHIPPER



*Cutting and Shredding of Tree Branches and Leaves*



# COMPOSTING: BIOREACTOR AND ROTARY COMPOSTER

- collected organic wastes are processed into organic fertilizers
- uses 1-tonner DOST accredited bioreactor machine and 1 rotary composter
- organic fertilizers are used by the city, community, and schools for its greening programs



*Bioreactor Machine*



*Rotary Composter*



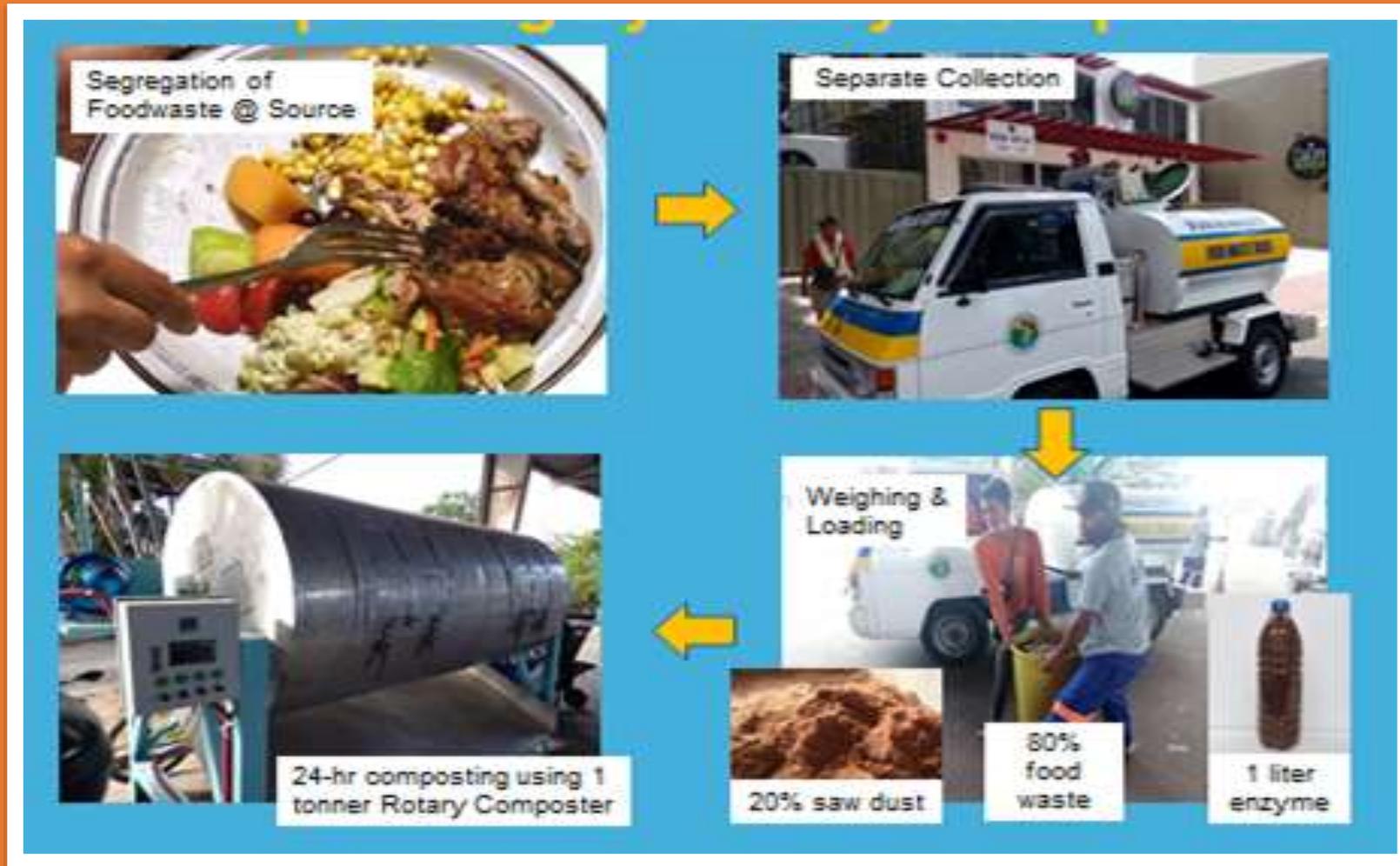
# COMPOSTING: BIOREACTOR



*Composting Using Bioreactor*



# COMPOSTING: ROTARY COMPOSTER



*Composting Using Rotary Composter*



## RESIDUAL WASTE DISPOSAL: TRANSFER STATION AND FINAL DISPOSAL

- transfer of residual waste to hauling trucks (in the city)
- transport of waste materials to New San Mateo Sanitary Landfill (outside the city)



*City Garbage Transfer Station*



*New San Mateo Sanitary Landfill*



# CIRCULAR ECONOMY & EPR LAW



# CIRCULAR ECONOMY



- Marikina City's long-term goal
- *“what is waste to one is resource to another”*



# EXTENDED PRODUCER RESPONSIBILITY (EPR) LAW

- enforces producers' responsibility throughout the lifecycle of their products



# EXTENDED PRODUCER RESPONSIBILITY (EPR) LAW & THE LOCAL GOVERNMENT

- offers market opportunity for recovered waste
- eases LGU duties on waste management
- possible partnerships with  
Obliged Enterprises, Collectives, or Producer  
Responsibility Organizations

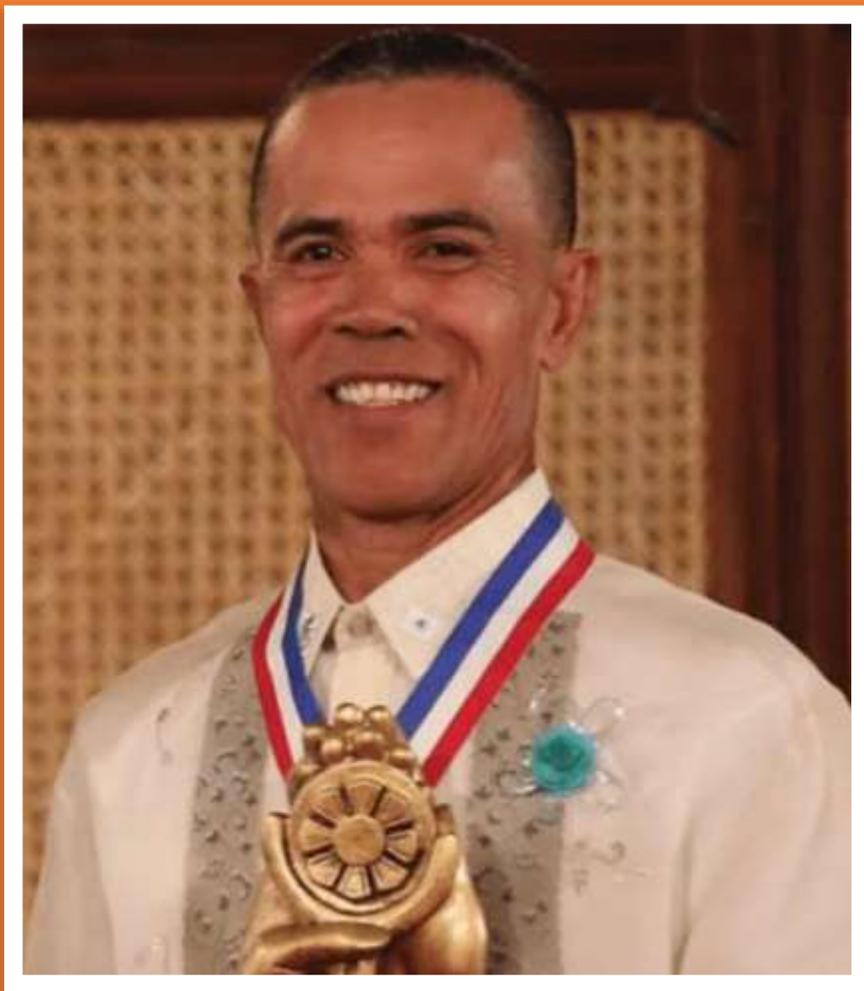


# EXTENDED PRODUCER RESPONSIBILITY (EPR) LAW & THE LOCAL GOVERNMENT

Partnerships may entail:

- sharing of waste management resources;
- motivating households, businesses, and institutions to segregate through incentives;
- or, assistance in accurate tracking and accounting of waste diversion accomplishments.





**GELSON A. RILI**

City Environment and Management Office

City Government of Marikina

*2018 Dangal ng Bayan Awardee*



*every member of the local government understands  
what their role is, how it impacts the institution,  
and why it is important to the community*



THANK YOU!

