

# GA Circular



Research & Data Analytics



Strategy & Policy Advisory



Technical Assistance



Stakeholder Engagement





# SCALING THE CURVE

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Global, regional and  
local studies and on-  
ground efforts

# THE ROAD THUS FAR

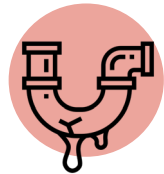
- Building Baselines
- Marine Debris and Plastics-Focused Policy
- Technology
- Informal Sector Inclusion
- Behaviour Change

# Building Baselines

## Material Flow Analysis Overview



Value Chain Studies



Leakage Audits



Landfill Audits



## Key Insights

# 01

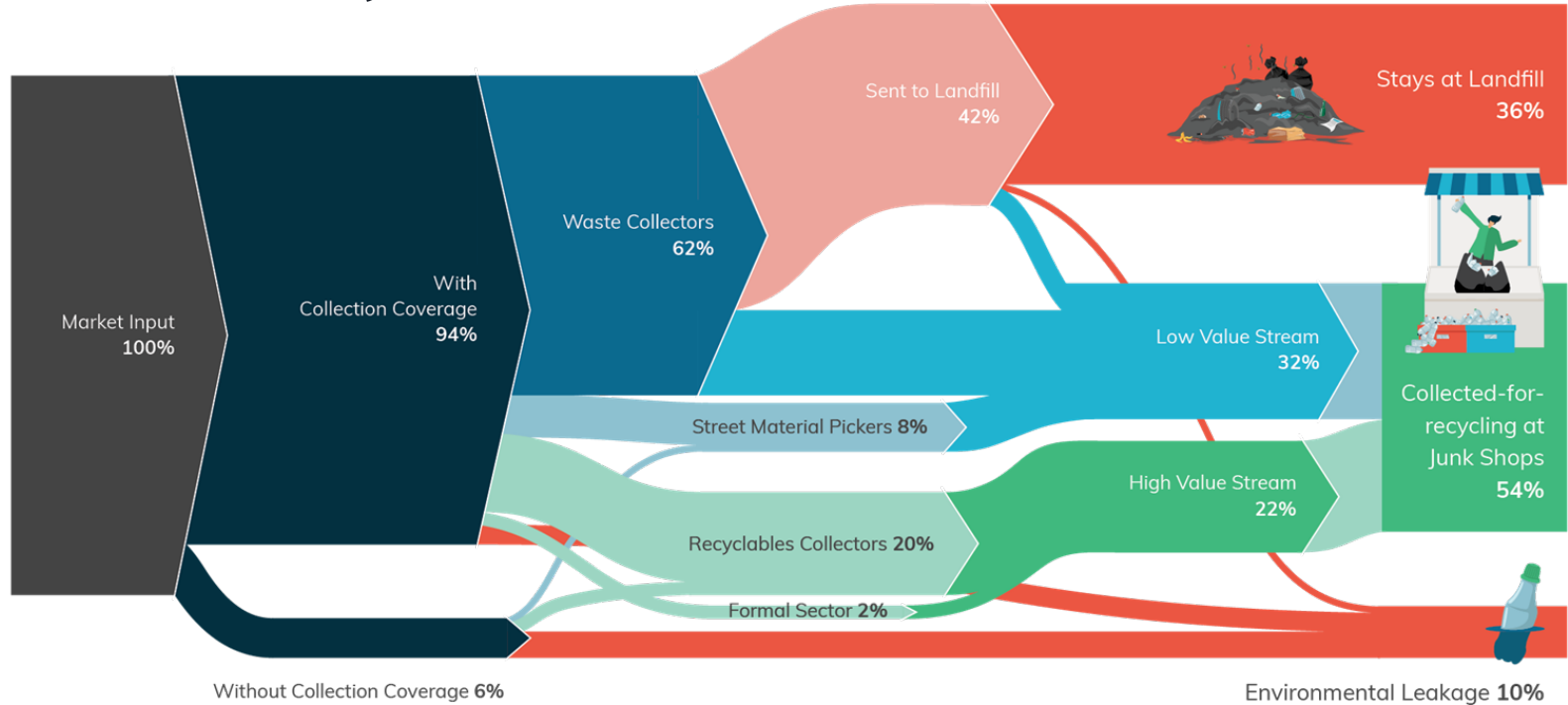
Different materials ->  
Different value  
chains -> Different  
Approaches

# 02

End markets AND  
Value chain activities  
influence collection of  
plastics

# Building Baselines

## Material Flow Analyses

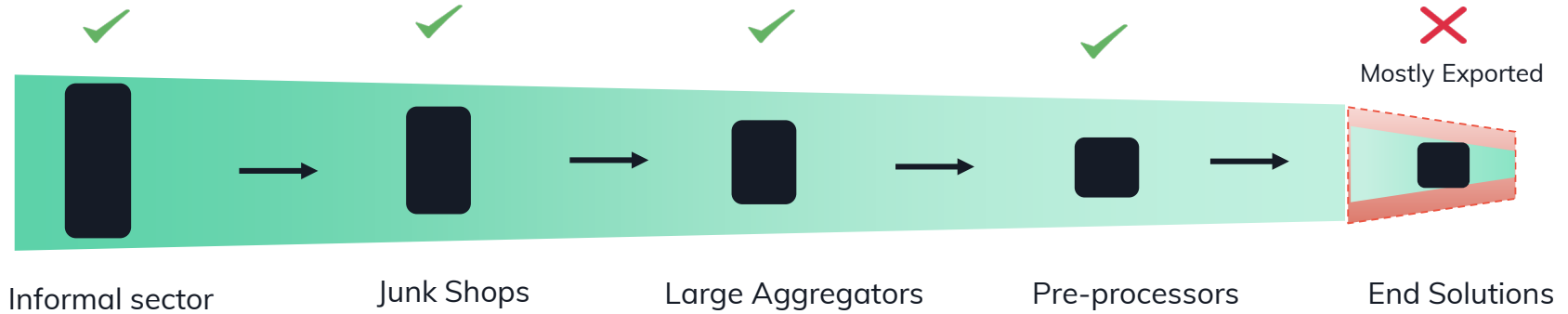


Source: GA Circular Analysis (2017-2019)

# Building Baselines

## Value Chain Studies - PET

1. Offtake opportunity
2. Existence of unbroken domestic value chain
3. Subject to market challenges and price volatility



# Building Baselines

## Landfill Audits

TPST Waste



Mixing 400kg of Waste



Quartering



100kg Final Sample



Separation Of Plastic Waste



Plastic Waste Categorisation



# Building Baselines

## Leakage Audits



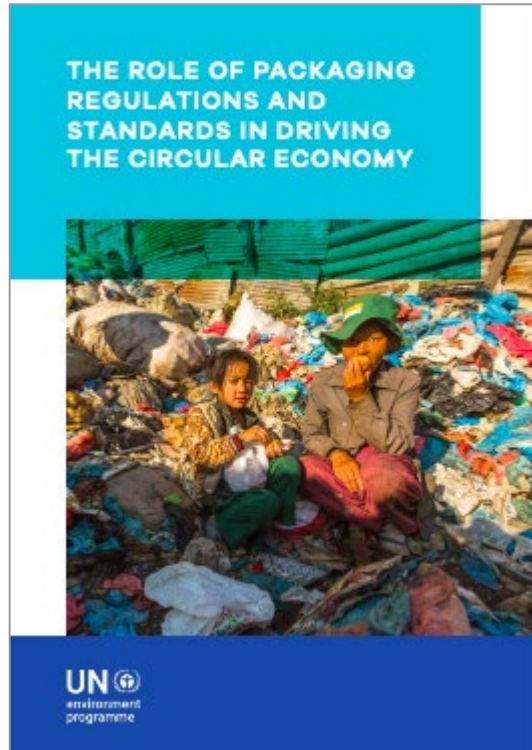
**POST-CONSUMER FLEXIBLES IN THE PHILIPPINES:**

**COLLECTION STRATEGY BASED ON  
CURRENT WASTE FLOW ANALYSIS &  
STAKEHOLDER ANALYSIS**



# Marine Debris & Plastics-Focused Policy

Identifying Policy Frameworks that will Reduce Leakage and Improve Collection for Recycling



## Key Policy Focus Areas

01

Marine litter legislation

02

Plastic bans are being contemplated as SUPs are now at the forefront

03

Take-back/ EPR policies  
(Indonesia, Malaysia, recycling policies)

# Technology

## Evaluating Existing and Potential Technologies



MK Aromatics plant in Chennai

### SUMMARY OF PROCESSING TECHNOLOGIES FOR POST-CONSUMER FLEXIBLE PACKAGING IN INDIA, INDONESIA, AND THE PHILIPPINES

	CO-PROCESSING CEMENT KILNS	PYROLYSIS	PLASTIC ROADS	CONVERSION TO FURNITURE	SOLVOLYSIS
<b>REGULATORY SUPPORT</b>	Ind - yes Indo/Ph - neutral	Ind - govt subsidy Indo - neutral, Ph - banned	Ind / Indo - support Ph - neutral	In / Indo - neutral Ph - allowed	In / Indo - neutral Ph - allowed
<b>INFRASTRUCTURE SUPPORT</b>	Cement kilns exist in all markets	USD 4 mil for 40 TPD plant	USD 100k for wet mix process	USD 200k for 2 TPD plant	High capital investment
<b>END USE / FINANCIAL BENEFIT</b>	Reduces cement production costs	Challenge of fluctuating oil prices	Lower cost and stronger roads. High demand	Furniture sold at market price	Monomers in demand. Less fluctuation than oil
<b>PROCESSING CAPACITY / SCALABILITY</b>	20 TPD per plant. 65 TPD by 2019	40 TPD per plant	Small amount per km of road	2 TPD per plant	30 TPD per plant by 2018
<b>DEGREE OF CIRCULARITY</b>	Reduces virgin energy needs	Turns plastic into oil	Replaces virgin material input	Replaces virgin material input	Enables full circularity for some flexibles
<b>LOW ENVIRONMENTAL RISK / IMPACT</b>	Fully combusted	Minimal, if factory is of high quality	Potential for microplastics / fumes	Limited waste & emissions if high quality	Some waste to be managed
<b>LOW PRE-PROCESSING NEEDS</b>	All flexibles, must be dry & shredded	Requires cleaning, and must limit foils	Uses <25% flexibles	Needs source segregation & <30% foils	Can not process all flexibles, <30% metals
<b>OVERALL SCORE</b>					

## Key Insights

# 01

Must rely on boosting the existing technology even if it's basic

# 02

Capacity Building

# 03

Domestic Offtake is essential

# Informal Sector Inclusion

Discovering challenges that are unique to the informal sector



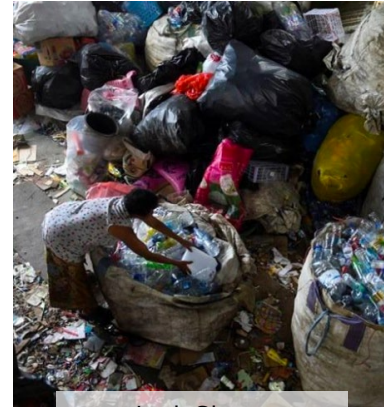
Waste Collectors



Recycling Pickers



Material Pickers



Junk Shops



## Key Insights

01

They are critical for recycling in ASEAN

02

Gaps in business knowledge and commodity potential

03

Declining participation with development

# Behaviour Change

There are three critical behaviours to address:



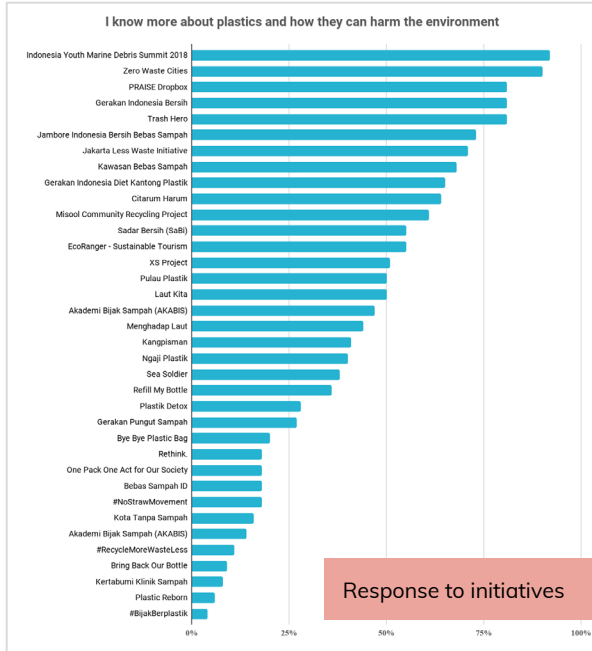
and behaviour change needs to happen throughout the value chain

- Producers/ Consumers/ Stakeholders
- Value-chain participants

# Behaviour Change

## Behaviour change is critical to all aspects

ASEAN Consumers and the Circular Economy - Understanding attitudes towards waste and Mapping of Existing Initiatives in Indonesia



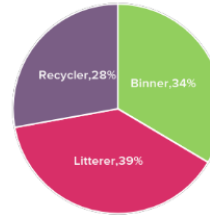
### CONSUMERS: OVERVIEW

Nearly 4 in 10 consumers are litterers in Indonesia.

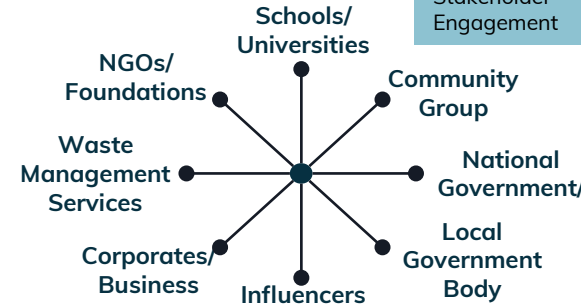
While most (60%) are ignorant about what happens to their waste, there is an opportunity to teach people about the journey of waste. Nearly 1 in 2 people wanted to know more about what happened to their waste after it gets collected.

Do you know what happens to your waste after it gets collected?

	M	F	Avg.
I don't know and I don't care	14%	10%	12%
I don't know but I would like to know more	43%	53%	48%
Yes, I do	43%	37%	40%



Attitudes towards waste



## Key Insights

# 01

Multi-stakeholder engagement for greater outreach and success

# 02

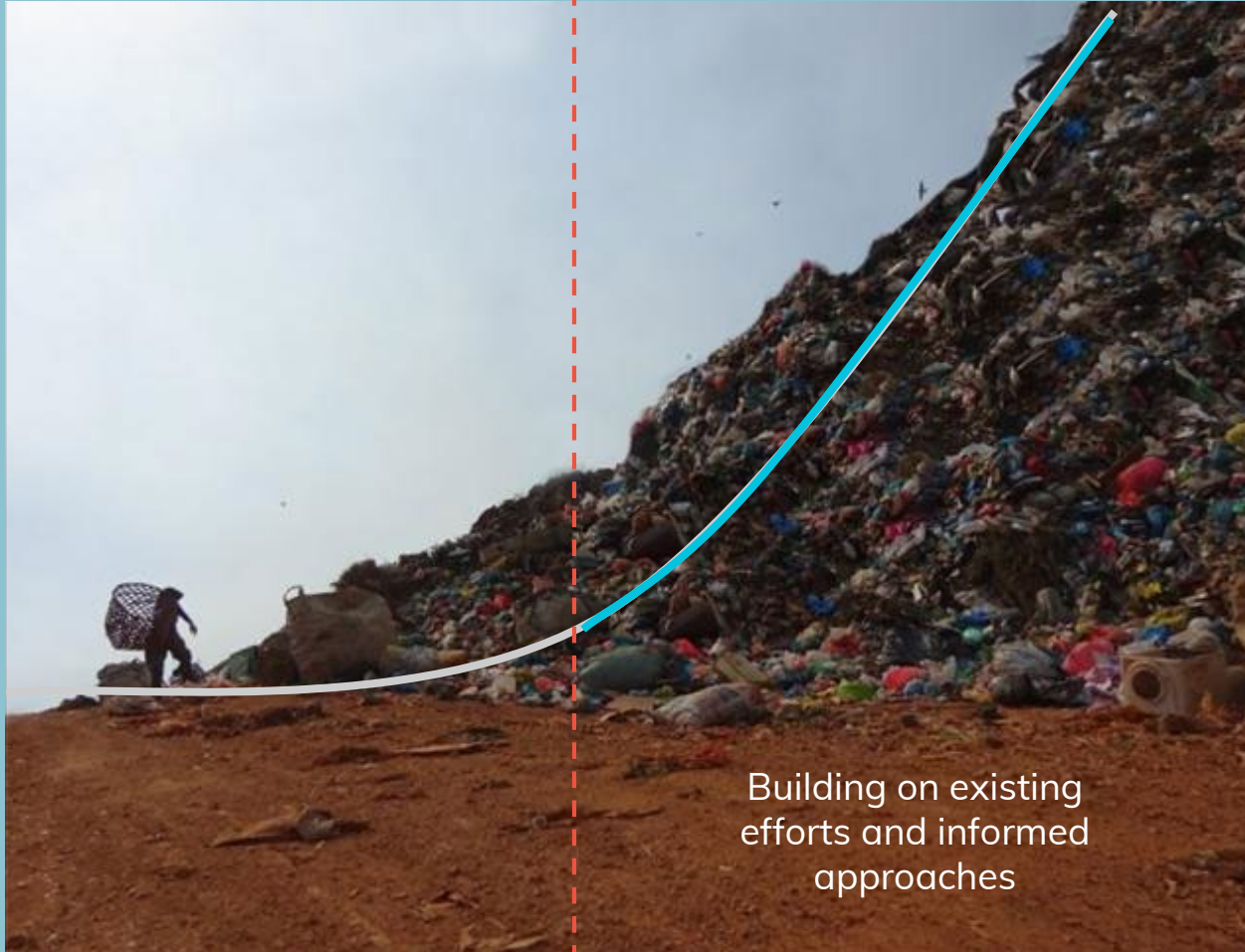
Consumer profiling is critical

# 03

Longer-term and sustained efforts are needed

# THE JOURNEY AHEAD

- Industry-led Efforts
- The Role of the Government



Building on existing  
efforts and informed  
approaches

# Packaging Recovery Organisations (PROs) in ASEAN

## Vision and Goals of a Collective Industry-led Effort



# Packaging Recovery Organisations (PROs) in ASEAN

Countries Committed to an Industry-led Collective Effort



## Vietnam

9 Companies  
PRO Launched



## Malaysia

10 Companies  
PRO Business Plan & Roadmap



## Indonesia

6 Companies  
PRO Business Plan & Roadmap



## Thailand

9 Companies  
PRO Development



## Myanmar

7 Companies  
PRO Development

# Packaging Design, Behaviour Change Efforts

## Industry-led Singular Efforts

### Redesigning Packaging



Finding alternatives to plastic packaging



Making products more recyclable/ easy for recycling

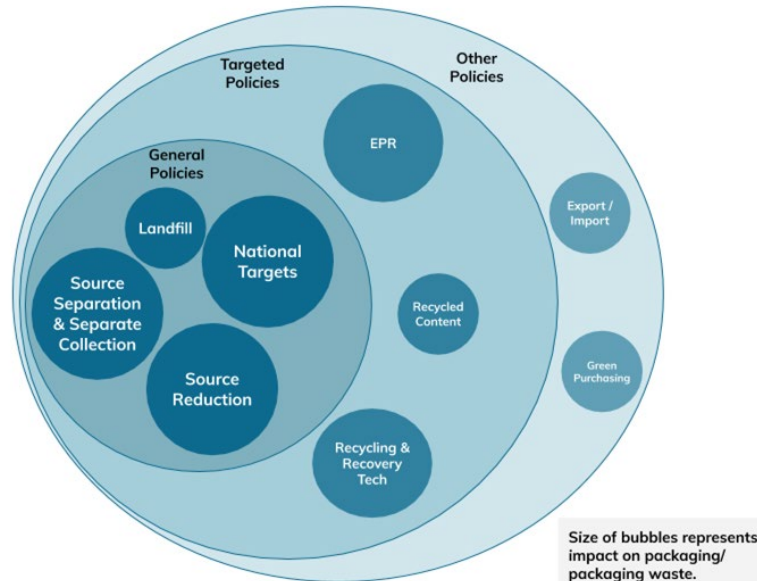
### Behaviour Change Campaigns



# Policy Efforts

## Government-led Efforts

### Country Specific Interventions



### ASEAN Level interventions

#### Embracing key principles

- Prioritization of Source Separation
- Identification of National Targets
- Committing to a Circular Economy/ Life Cycle Approach.

#### Opportunities for harmonisation

- Reporting of packaging metrics
- Conformity of definitions
- Labelling practices
- Adoption of process and quality standards

#### Inter-ASEAN trade

- The creation of 'technology hubs'
- Export and import convention

# FULL CIRCLE

## Accelerating the Circular Economy for Post-consumer PET bottles in Southeast Asia

Examples of previous insights featured are found in **GA Circular's** most recent report.

Provides a systematic and comparative baseline of the flow of plastics packaging from production to end-states by studying PET bottles in **Southeast Asia: Indonesia, the Philippines, Vietnam, Thailand, Myanmar, and Malaysia.**



Scan to download the report



[www.gacircular.com](http://www.gacircular.com)



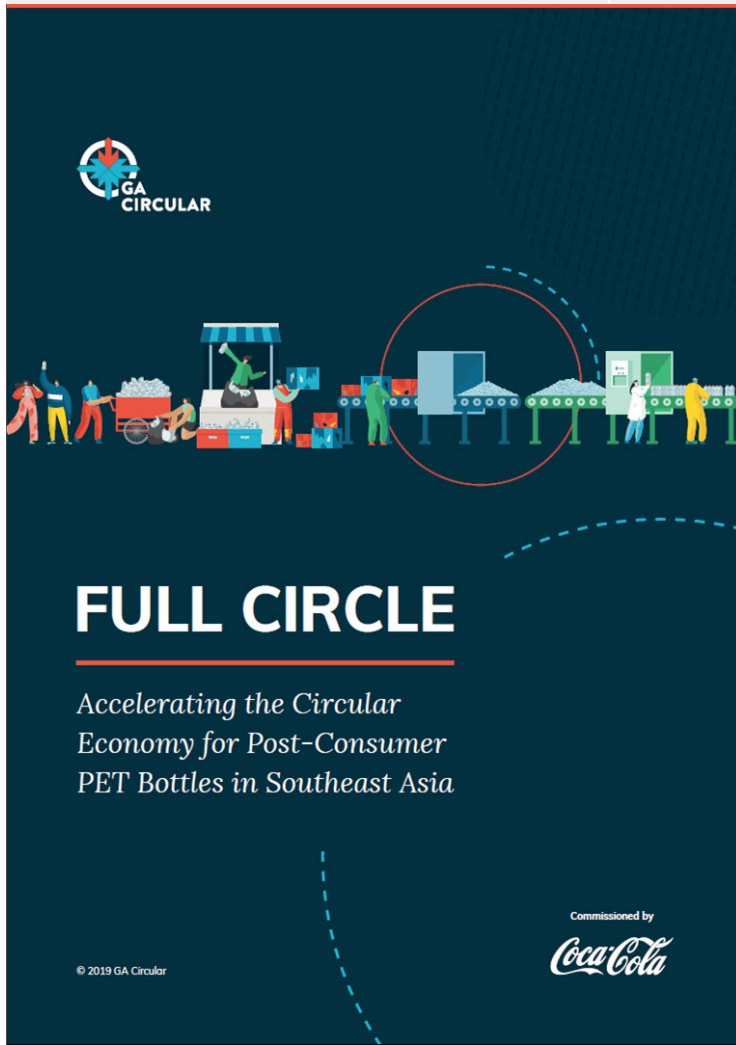
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# FULL CIRCLE

*Accelerating the Circular Economy for Post-Consumer PET Bottles in Southeast Asia*

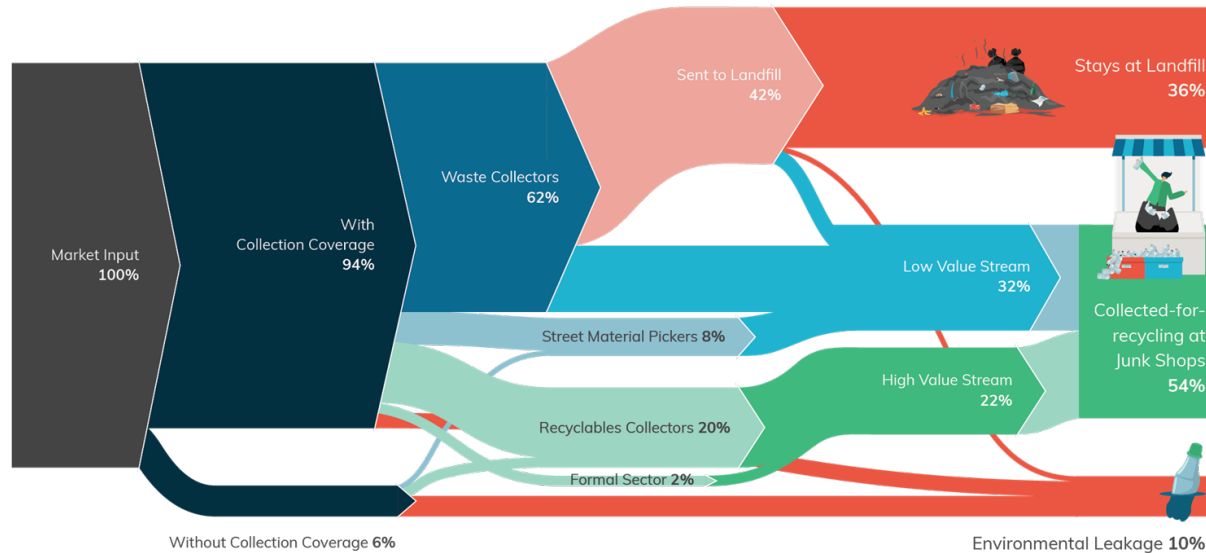
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*Coca-Cola*

# ACCELERATING THE CIRCULAR ECONOMY

## Post-consumer PET bottles in Southeast Asia

Only 54% of bottles sold in the cities studied are collected for recycling.



Source: GA Circular Analysis (2017-2019)



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the report



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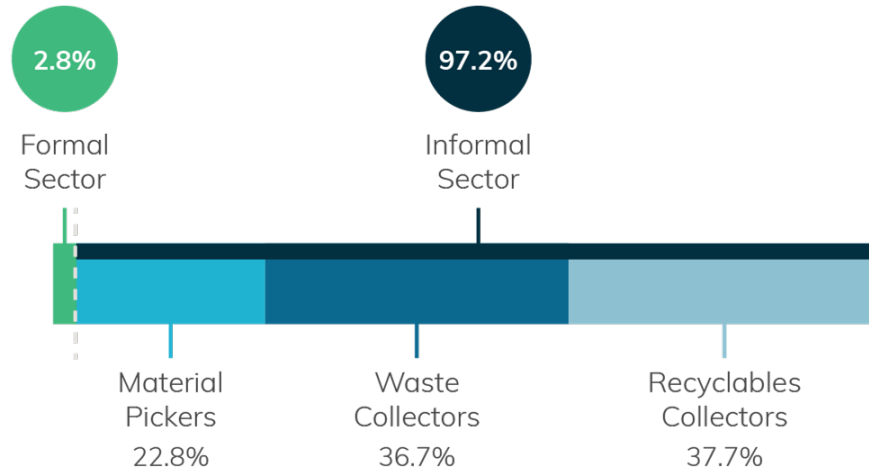


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# ACCELERATING THE CIRCULAR ECONOMY

## Post-consumer PET bottles in Southeast Asia

The informal sector is responsible for 97% of the PET bottles collected for recycling.



Source: GA Circular Analysis (2017-2019)



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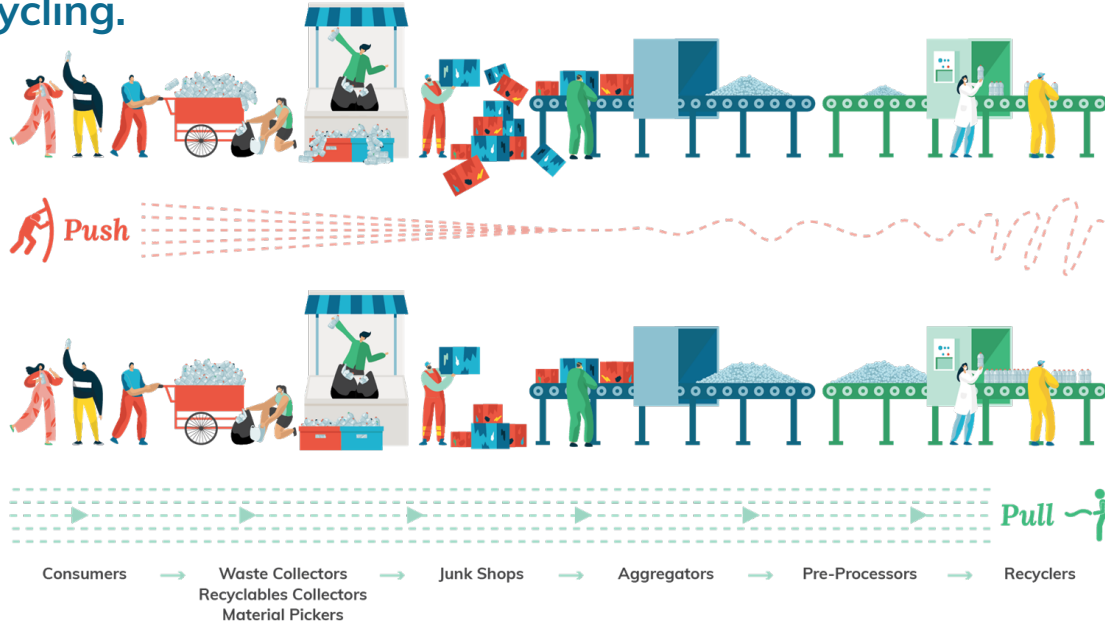


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# ACCELERATING THE CIRCULAR ECONOMY

## Post-consumer PET bottles in Southeast Asia

Pulling material through the value chain using a price incentive is a key strategy to achieve 100% collection for recycling.



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the report



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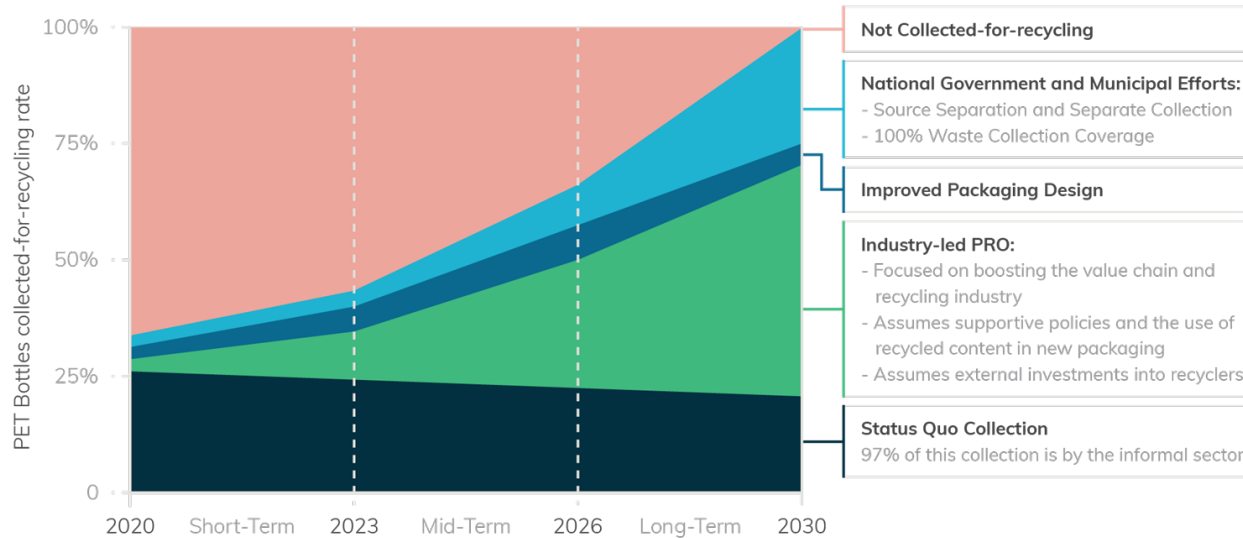


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# ACCELERATING THE CIRCULAR ECONOMY

## Post-consumer PET bottles in Southeast Asia

### Key levers to achieve 100% collection for recycling of PET bottles in Southeast Asia



Source: GA Circular Analysis (2017-2019) based on primary data collection and examples of ECOCE and PETCO



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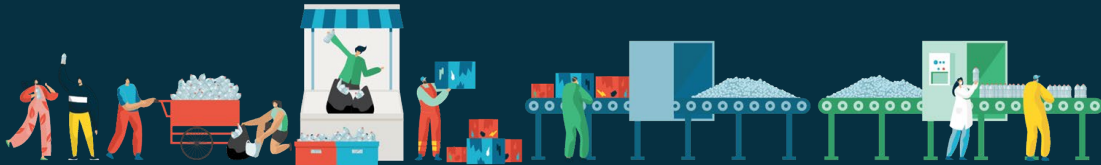


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