Government of the Republic of Trinidad and Tobago
Ministry of Planning and Development

NATIONAL SOURCE INVENTORY ON THE LIFECYCLE OF PLASTICS IN TRINIDAD AND TOBAGO

UNEP REGIONAL WORKSHOP ON TACKLING PLASTIC POLLUTION: COOPERATION, BEST PRACTICES AND SUSTAINABLE SOLUTIONS

Session 6: Reducing Plastic Pollution through Extended Producer Responsibility

March 13, 2025

Presenter: Ms. Keima Gardiner
Environmental Policy & Planning Division (EPPD)
Ministry of Planning and Development
Trinidad and Tobago

Environmental Policy and Planning Division

PROJECT

CAPACITY DEVELOPMENT TO CATALYZE ACTIONS AND COMMITMENTS AT THE NATIONAL AND GLOBAL LEVEL TO REDUCE PLASTIC POLLUTION INCLUDING IN THE MARINE ENVIRONMENT

AIM: To support countries to undertake enabling activities that catalyse actions and commitments at the national and global level to reduce plastic pollution, including in the marine environment.

TIMEFRAME: 18 months
Start date: November 2023-date of signing of the Small Scale Funding Agreement (SSFA)
End Date May 2025

BUDGET: US $150,000

FUNDING AGENCY

IMPLEMENTING AGENCY

UN environment

EXECUTING AGENCY

MINISTRY OF PLANNING AND DEVELOPMENT

FUNDING/PROJECT ADMINISTRATOR

BCRC CARIBBEAN
Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean

COMPONENTS

CAPACITY DEVELOPMENT TO CATALYZE ACTIONS AND COMMITMENTS AT THE NATIONAL AND GLOBAL LEVEL TO REDUCE PLASTIC POLLUTION INCLUDING IN THE MARINE ENVIRONMENT

COMPONENT 1	• Establishment of a National Steering Committee and Project Team
COMPONENT 2	• Stakeholder Consultation Process
COMPONENT 3	• Gap Analysis and Data Collection
COMPONENT 4	• National Source Inventory Report
COMPONENT 5	• Legislation and Policy Review and Analysis
COMPONENT 6	• National Roadmap/Strategy/Plan
COMPONENT 7	• Stakeholder Validation Process
COMPONENT 8	• Capacity Development
COMPONENT 9	• Knowledge Management and Sharing
COMPONENT 10	• Awareness raising

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AIM

Identify and assess the main sources and pathways of plastic pollution and marine litter in Trinidad and Tobago.

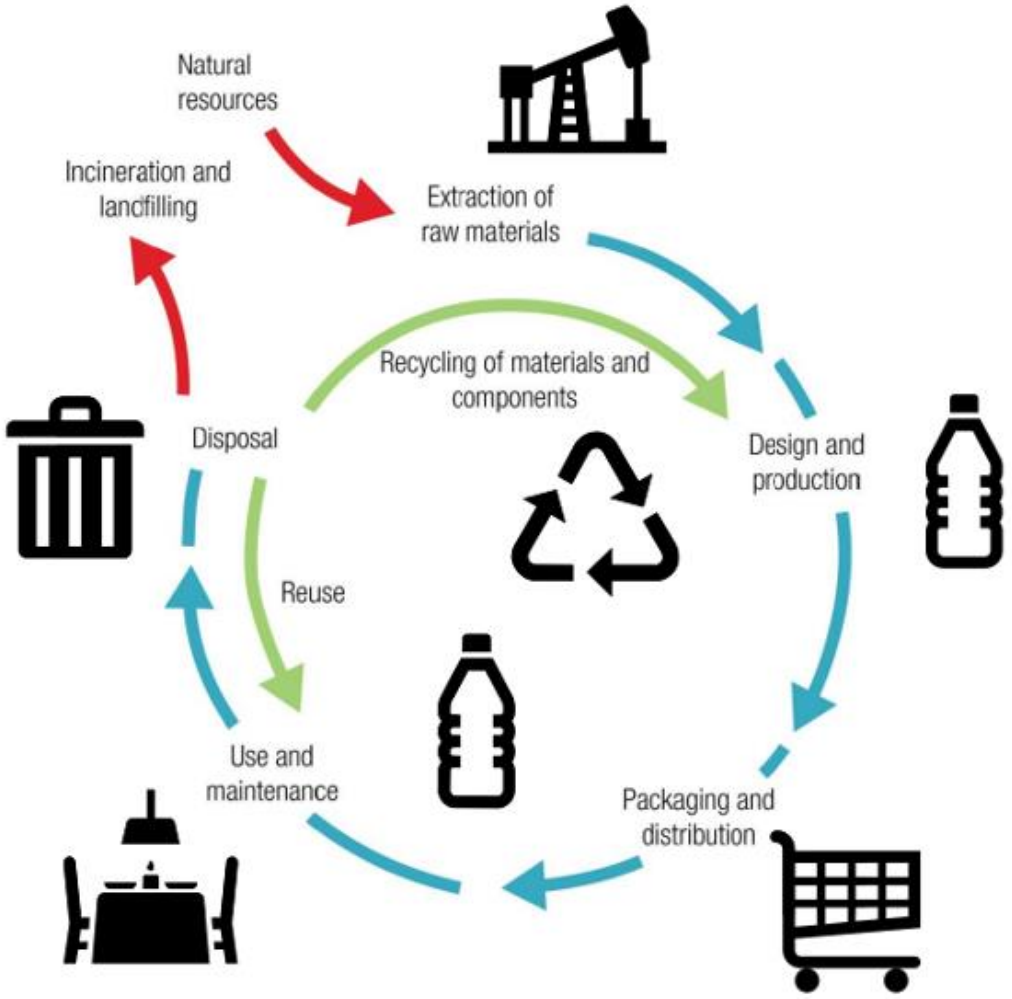
VIRTUAL INVENTORY VALIDATION MEETING

CAPACITY DEVELOPMENT TO CATALYZE ACTIONS AND COMMITMENTS AT THE NATIONAL AND GLOBAL LEVEL TO REDUCE PLASTIC POLLUTION INCLUDING IN THE MARINE ENVIRONMENT

Participants of the virtual Inventory Validation Workshop

APPROACH AND METHODOLOGY

LIFE CYCLE ANALYSIS OF PLASTICS FLOWS



Source: UNEP 2025

APPROACH AND METHODOLOGY

DATA COLLECTION

PRIMARY DATA SOURCES

- Stakeholder consultations-semi structured questionnaires and surveys:
  - Government Bodies and Agencies: Customs and Excise, Central Statistical Office (CSO), Environmental Management Authority (EMA), Trinidad and Tobago Solid Waste Management Company Limited (SWMCOL), Tobago House of Assembly (THA), Port Authority, Maritime Services Division, Tourism Trinidad Limited
  - Private Sector, Industry, Waste Collectors and Recycling Companies
  - NGOs-Caribbean Network for Integrated Rural Development (CNIRD) and the Ocean Conservancy
  - Associations- Trinidad and Tobago Yacht Club

SECONDARY DATA SOURCES

- Government reports
- Academic studies
- International trade databases-UN Trade and Development (UNCTAD) Plastic Data Tool
- NGO records

APPROACH AND METHODOLOGY

PLASTICS IN LIFE CYCLE ANALYSIS

CATEGORIES

- Single-use plastics: plastic bags, straws, cutlery, plates, and packaging materials
- Packaging plastics: plastic bottles and covers, containers, wraps, and films
- Microplastics: less than 5mm in size
- Marine plastics:
  - Abandoned, lost, or otherwise discarded fishing gear (ALDFG)- nets, lines, and traps
  - Coastal activities
  - Shipping-Cruise sector
- Industrial plastics: components, storage containers and construction materials (e.g. Polyvinyl Chloride (PVC) piping)
- Agricultural plastics: films, irrigation pipes

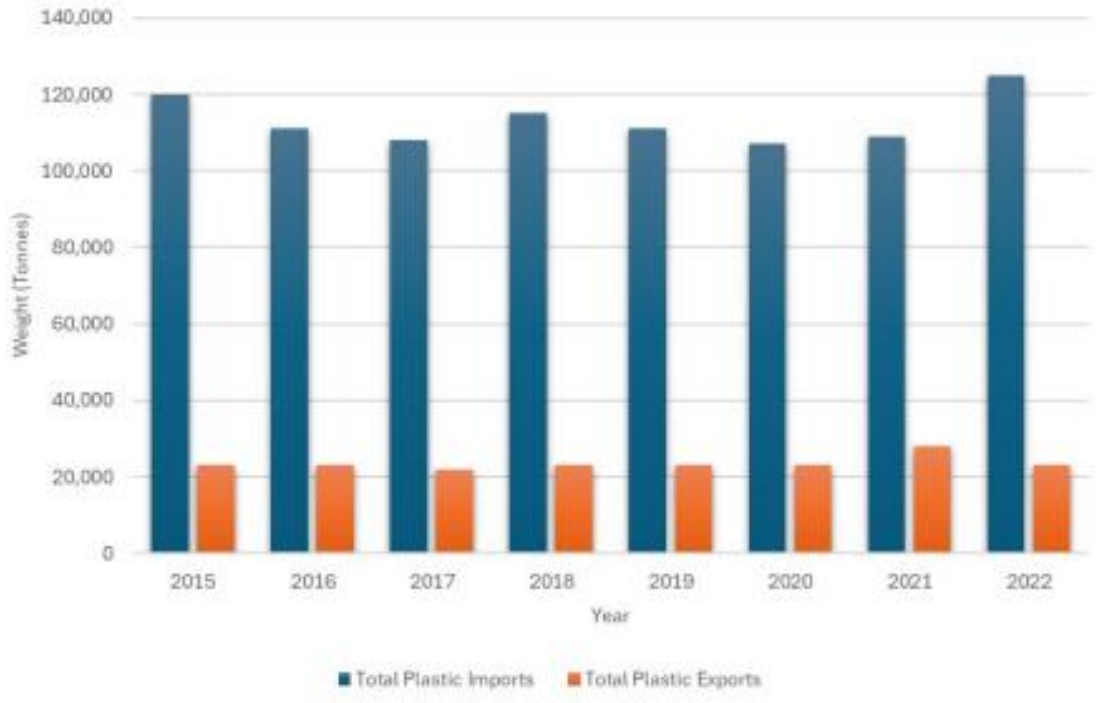
INVENTORY DATA

PLASTIC IMPORTS AND EXPORTS

Trinidad and Tobago Plastic Imports and Exports
based on Customs and Excise data

Year	Weight (Tonnes)	
	Imports	Exports
2020	85,494.27	29,411.63
2021	91,654.89	27,020.41
2022	105,489.91	24,804.99
2023	91,840.91	29,256.82
2024	44,067.46	15,494.80

Source: Simmons and Associates, 2024

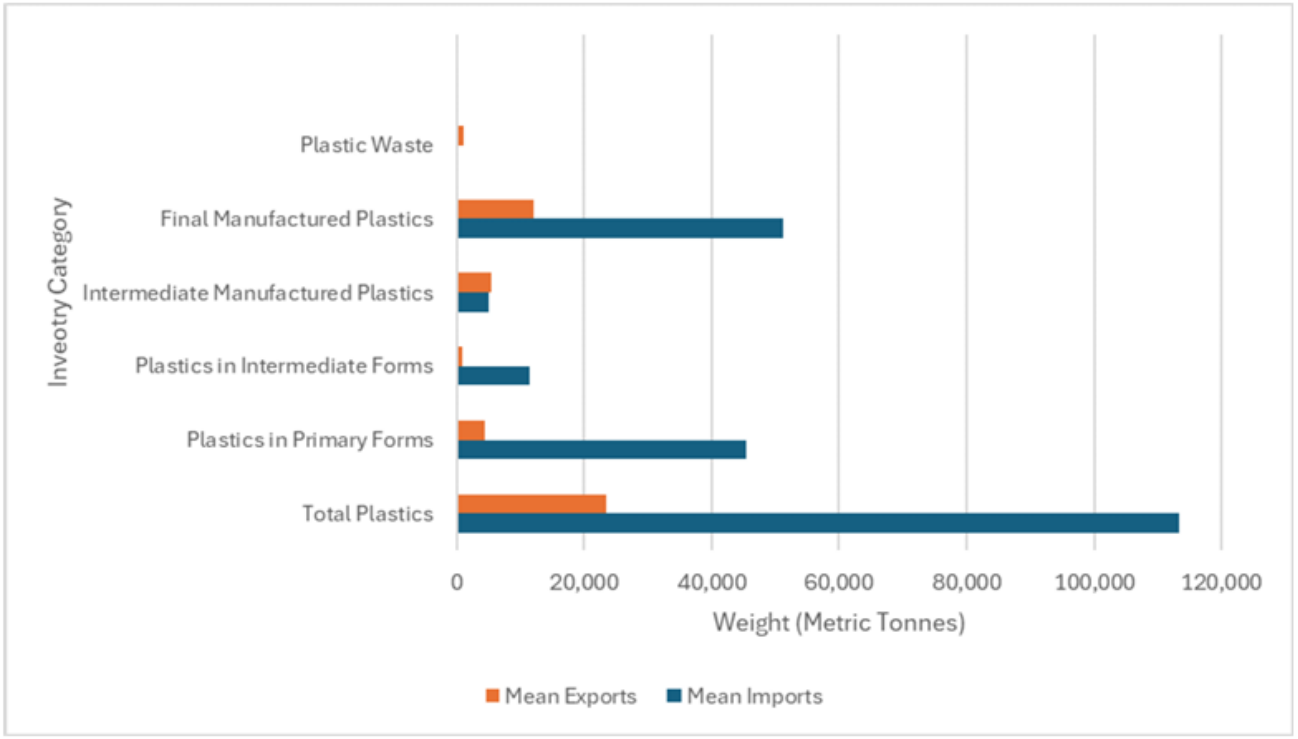


Total Plastic Imports and Exports for Trinidad and Tobago (2015-2022) adapted from the UNCTAD Plastics Database, 2024

Source: Simmons and Associates, 2024

INVENTORY DATA

PLASTIC IMPORTS AND EXPORTS



Mean Plastic Imports and Exports for Trinidad and Tobago (2015-2022) as adapted from the UNCTAD Plastics Database, 2024

Source: Simmons and Associates, 2024

Mean Plastics Imports and Exports from the UNCTAD Plastics Database for Trinidad and Tobago (2015-2022)

Plastic Data Category	Weight (Tonnes)	
	Mean Imports	Mean Exports
Total Plastics	113,250	23,500
Plastics in Primary Forms	45,500	4,500
Plastics in Intermediate Forms	11,375	875
Intermediate Manufactured Plastics	5,000	5,500
Final Manufactured Plastics	51,125	12,000
Plastic Waste	0	1,125

Source: Simmons and Associates, 2024

INVENTORY DATA

PLASTIC IMPORTS

Plastic Imports: Type, Value and Tonnage for Ten Ranked Countries of Origin (2023) from Customs and Excise Division Data, 2024

Origin	HS Code	Description	CIF Value	Net Weight (Tonnes)
United States	39041000000	Polyvinyl chloride	$54,768,759	8,037
China	39076000000	Polyethylene terephthalate	$50,614,058	5,556
United States	39012000000	Polyethylene	$46,777,971	5,276
Mexico	39076000000	Polyethylene terephthalate	$39,949,284	3,845
Puerto Rico	39233010000	Plastic Bottles	$27,486,357	3,172
United States	39011000000	Polyethylene	$26,594,650	2,763
China	39119000000	Primary forms of resins	$21,546,175	2,093
United States	39079900000	Primary forms of acetals, ethers, esters	$18,216,990	1,812
China	39232900000	Other plastic packaging	$26,770,711	1,765
China	39181090000	Plastic Tiles	$12,626,082	1,732
			$325,351,036	36,052

Source: Simmons and Associates, 2024

IMPORT FINDINGS

- PVC, PET and PE are the most prominently imported plastic polymers.
- United States is the leading exporter of plastics to Trinidad and Tobago- PVC and PE.
- China is the second ranked exporter to Trinidad and Tobago for PET mainly, plastic resins, plastic packaging materials and tiles.

INVENTORY DATA

PLASTIC EXPORTS

Plastic Exports: Type, Value and Tonnage for Ten Ranked Countries of Origin (2023) from Customs and Excise Division Data, 2024

Destination	HS Code	Description	CIF Value	Net Weight (Tonnes)
Dominican Republic	39233010000	Plastic Bottles	$39,599,232	2,376
United States	39091000000	Urea resins; thiourea resins	$21,321,694	2,052
Puerto Rico	39172100000	Polymers of ethylene	$26,597,900	1,849
Jamaica	39233010000	Plastic Bottles	$26,066,822	1,682
Saint Lucia	39233010000	Plastic Bottles	$11,309,533	700
Jamaica	39172100000	Polymers of ethylene	$12,059,092	667
Ghana	39091000000	Polymers of ethylene	$3,553,578	660
Jamaica	39173210000	PVC electrical conduits, piping	$11,891,154	655
Guatemala	39091000000	Urea resins; thiourea resins	$3,186,593	625
Jamaica	39172300000	Polymers of vinyl chloride	$15,231,219	582
			$170,816,816	11,848

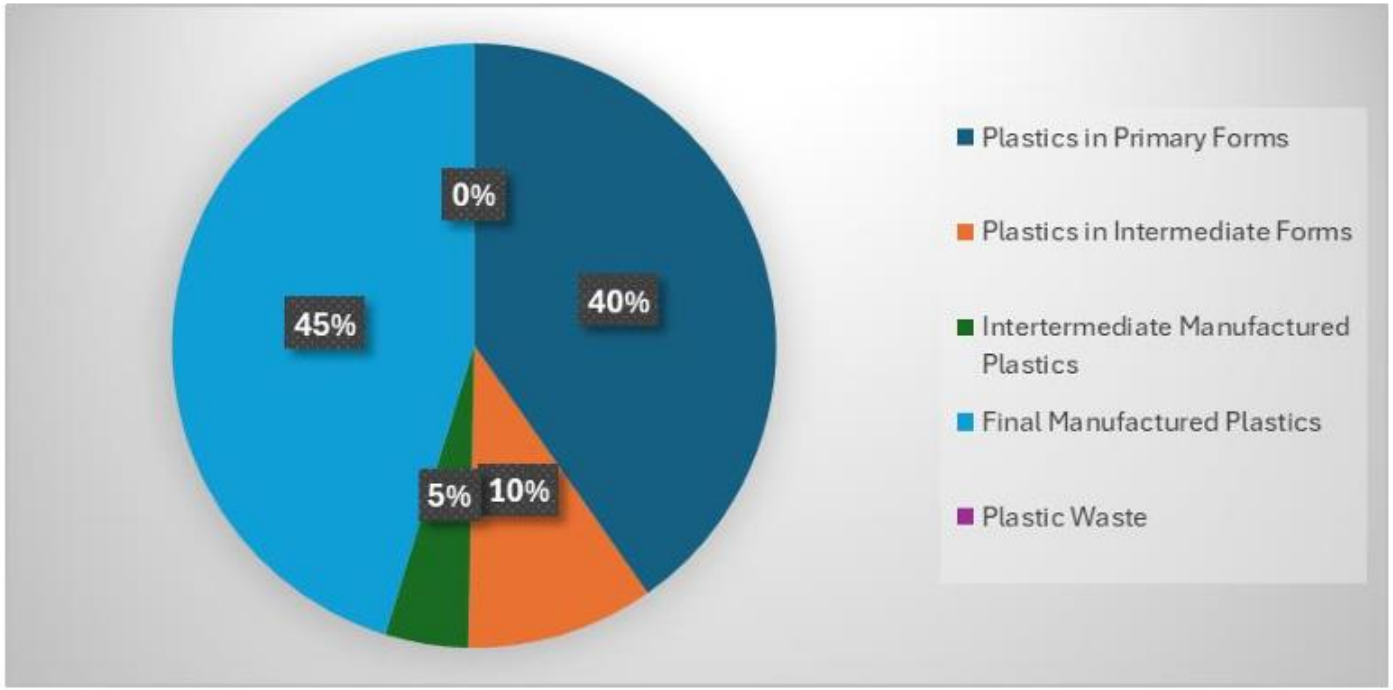
Source: Simmons and Associates, 2024

EXPORT FINDINGS

- Plastic bottles are a significant exported product from Trinidad and Tobago.
- Main countries of plastic bottle import are Dominican Republic, Jamaica and Saint Lucia.
- This product consistently is a major component of exports to several destinations, indicating high demand and significant trade volume in this category.
- Polymers of ethylene appear frequently, with substantial exports to Puerto Rico, Jamaica and Ghana.

INVENTORY DATA

PLASTIC PRODUCTION



Percentages of Plastics Imported for Trinidad and Tobago (2015-2022) as adapted from the UNCTAD Plastics Database, 2024

Source: Simmons and Associates, 2024

FINDINGS

- 40% of primary forms of plastics (e.g. resins) are imported and used locally for processing and manufacturing final plastic products.
- 10% import of intermediate forms of plastics, which include partially processed plastics for domestic manufacturing.
- 5% intermediate-manufactured plastics import (plastic sheets, films, pipes).
- 45% final manufactured plastic imports (highest %)-domestic production is too low to meet demands.

INVENTORY DATA

PLASTIC CONSUMPTION

Net Consumption* Based on Data from the UNCTAD Plastics Database for Trinidad and Tobago (2015-2022)

*Net Consumption = Mean Imports – Mean Exports

Plastic Data Category	Net Consumption (Tonnes)
Total Plastics	89,750
Plastics in Primary Forms	41,000
Plastics in Intermediate Forms	10,500
Intermediate Manufactured Plastics	-500
Final Manufactured Plastics	39,125
Plastic Waste	-1,125

Source: Simmons and Associates, 2024

FINDINGS

- Trinidad and Tobago consumes high amounts of plastics-high net consumption.
- Trinidad and Tobago exports more intermediate manufactured plastics than it imports.
- Negative net consumption of plastic waste-Trinidad and Tobago does not import plastic waste for further processing.

INVENTORY DATA

PLASTIC CONSUMPTION

Import and Export Data for Common Plastic Products and Polymers for Trinidad and Tobago for 2023 Adapted from Customs and Excise Import/ Export Data for Trinidad and Tobago (2023)

Plastic Item/ Polymer	Weight (Tonnes)		
	Imports	Exports	Net Consumption
PET Plastic Bottles	20,496	7,415	13,081
LDPE (Bags/ Film)	6,525	38	6,525
Polymers of Styrene	13,050	38	13,050
Plastic Straws/ Cutlery	1,447	44	1,403
PVC	15,945	66	15,879
HDPE	931	1	930
TOTAL	**58,394**	**7,601**	**50,868**

Source: Simmons and Associates, 2024

FINDINGS

- Plastic products more commonly imported in surplus compared to their exports.
- PVC, PET bottles, polymers of styrene and LDPE are consumed domestically in large quantities.
- PVC has the highest net consumption, suggesting that there is a high level of domestic use and production.
- The levels of exports are generally low for most plastic products/ polymers.
- A negligible portion of HDPE is exported.
- Ultimately these plastic products are associated with challenges for recycling or disposal.

INVENTORY DATA

WASTE COLLECTION

Waste Collected in Trinidad and Tobago (2013-2023)

Year	Waste Collected (Tonnes)		
	Trinidad	Tobago	Total Waste Collected
2013	505,926		505,926
2014	558,617	-	558,617
2015	514,834	-	514,834
2016	595,626	34,172	629,798
2017	767,536	29,670	797,206
2018	460,696	35,000	495,696
2019	441,398	26,686	468,084
2020	769,177	21,082	790,259
2021	777,999	16,591	794,590
2022	703,623	12,480	716,103
2023	719,324	16,690	736,014
Total	**6,814,756**	**192,371**	**7,007,127**

Source: Simmons and Associates, 2024

FINDINGS

- Trinidad's waste increased between 2018 and 2022, from 460,696 tonnes to 733,623 tonnes.
- Tobago's waste generally decreased, from 35,000 tonnes in 2018 to 12,480 tonnes in 2022.
- Between 2013 and 2023, Trinidad and Tobago collectively collected over 7 million tonnes of waste.
- Collectively for both islands:
  - Waste collection peaked in 2017 with a total of 797,206 tonnes,
  - The lowest recorded amount was in 2019, with 468,084 tonnes.

INVENTORY DATA

WASTE GENERATION

Waste Per Capita in Trinidad and Tobago (2013-2023)

Year	Population	Waste Per Annum (kg/year)	Waste Per Capita (kg/person/year)	Waste Per Capita (kg/person/day)
2013	1,340,557	1,340,557,000	377.40	1.03
2014	1,345,343	1,345,343,000	415.22	1.14
2015	1,349,667	1,349,667,000	381.45	1.05
2016	1,353,895	1,353,895,000	465.17	1.27
2017	1,356,633	1,356,633,000	587.64	1.61
2018	1,359,193	1,359,193,000	364.70	1.00
2019	1,363,985	1,363,985,000	343.17	0.94
2020	1,366,725	1,366,725,000	578.21	1.58
2021	1,367,558	1,367,558,000	581.03	1.59
2022	1,365,805	1,365,805,000	524.31	1.44
2023	1,367,510	1,367,510,000	538.21	1.47
Mean	**1,357,897**	**1,357,897,364**	**468.77**	**1.28**

Source: Simmons and Associates, 2024

FINDINGS

Mean waste generation:

- 1.28 kg per capita/day in Trinidad and Tobago.
- Higher than Central America and the Caribbean, South America, Eastern Europe, Southern Europe, West Asia and North Africa, Sub-Saharan Africa, Central and South Asia, East and South-East Asia, and Oceania (Global Waste Management Outlook, 2024)
- Latin America region generate approximately 1 kg/per/day.

INVENTORY DATA

PLASTIC WASTE GENERATION AND RECYCLING TRINIDAD

Composition of Waste Generated in Trinidad (2022)

Waste Components	Composition of Waste Stream (%)[14]
Organic Food	20.60
Papers	17.96
Plastics	12.84
Garden Waste	11.81
Beverage Containers	9.18
Construction and Demolition	8.79
Textiles	6.39
Sanitary Textiles	4.98
Metals	2.25
Composites	2.18
Glass	2.05
Hazardous Waste	0.66
Thin Elements	0.32
Bulky Waste	0.00

Source: KWL Lipor SWMCOL, 2023

Recyclable Waste Composition from Trinidad's Landfills (2022)

Recyclability	Waste Component	Composition of Waste Stream (%)
Recyclable Materials	Bio Waste	32.4
	Cardboard/ Paper	18.0
	Plastics and Tetra Pak	18.1
	Ferrous Metals	1.2
	Other Non-Ferrous	1.5
	Glass	5.5
	Sub-Total	**76.6**
Non-Recyclable Materials	Construction and Demolition	8.8
	Textiles	6.4
	Sanitary Textiles	5.0
	Composites	2.2
	Hazardous Waste	0.7
	Thin Elements	0.3
	Bulky Waste	0.0
	Sub-Total	**23.3**

Source: KWL Lipor SWMCOL, 2023

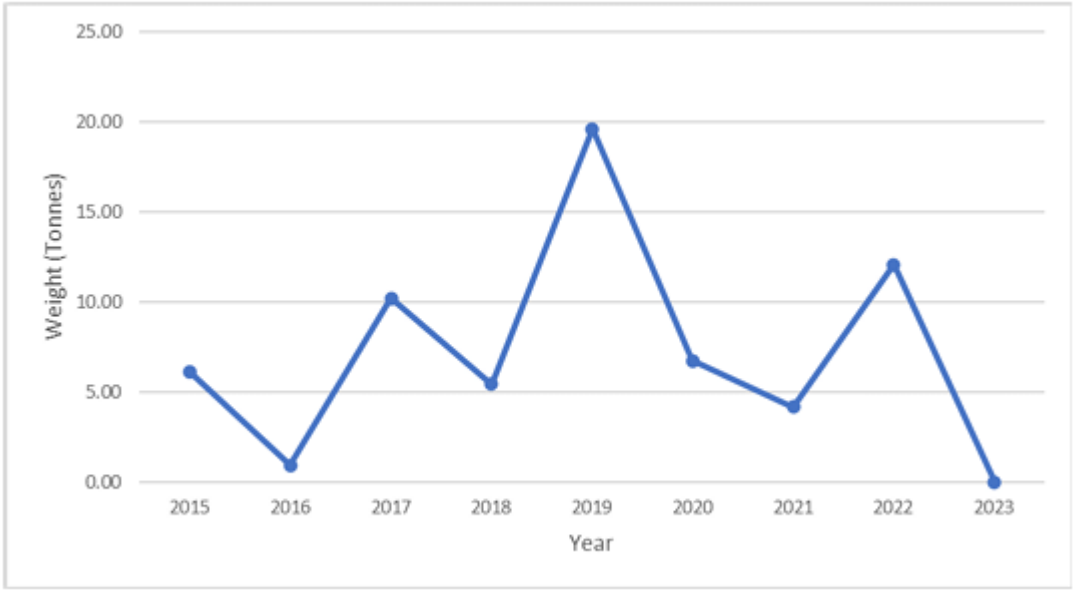
INVENTORY DATA

PLASTIC WASTE GENERATION AND RECYCLING TRINIDAD

Total Weight of Recyclable Materials Received at SWMCOL's Beverage Container Recycling Facility (BCRF) (2015-2023)

Recyclable Materials	Total Weight (Tonnes)
PET	1,557.84
HDPE	180.52
LDPE	13.62
Aluminium Cans	26.10
Steel Cans	7.11
Tetra Pak	44.09
Cardboard	230.62
PP	1.62
Glass	797.55
PET Flakes Produced	65.29
Total Recyclable Material Processed	3,010.51
Total Plastic Polymers Processed	1,893.43

Source: Simmons and Associates, 2024



PET Flakes Produced Annually for Export at SWMCOL's BCRF (2015-2023

FINDINGS

- Total plastic polymers processed about 2/3 of total recyclables.
- PET is the most common plastic polymer collected at the facility, followed by HDPE and LDPE.
- PET Flakes for export -highest production recorded in 2019-19.60 tonnes

INVENTORY DATA

PLASTIC WASTE GENERATION AND RECYCLING COMPOSITION TOBAGO

Mean Composition of Waste Generated in Tobago (2012)

Waste Components	Mean Composition of Waste Stream (%)
Paper and Paperboard	26.30
Plastic	25.95
Textiles	15.25
Organics	14.15
Glass	9.60
Other Wastes	5.45
Metal	3.30
Construction and Demolition Materials	0.00
Special Care Wastes	0.00

Source: Simmons and Associates, 2024

Recyclable Waste Composition from Tobago's Landfills (2012)

Recyclability	Waste Component	Mean Composition of Waste Stream (%)
Recyclable Materials	Paper and Paperboard	26.30
	Glass	9.60
	Metal	3.30
	Plastic	25.95
	Sub-Total	**65.15**
Non-Recyclable Materials	Textiles	15.25
	Organics	14.15
	Construction and Demolition Materials	0.00
	Special Care Wastes	0.00
	Other Wastes	5.45
	Sub-Total	**34.85**

Source: Simmons and Associates, 2024

INVENTORY DATA

FATE OF END OF LIFE PLASTIC

Summary Data of Fate of End of Life Plastic from Private Sector Recyclers and SWMCOL's BCRF in Trinidad and Tobago (2018-2023)

Polymer Type	Weight (Tonnes)		
	Landfilled	Recycled	Exported
PET	40	1,239,610	118
PVC	0	400,000	400,000
HDPE	0	168	112
LDPE and Shrink-wrap	0	49,790	49,790
Mixed Plastics	38,278	84	84
Total	38,318	1,689,652	450,103

Source: Simmons and Associates, 2024

INVENTORY DATA

UPCYCLING

Composition of Plastic Polymers Upcycled

Type of Plastic Polymers	Composition of Plastic Polymers (%)
PP	46
HDPE	11
PET	17
LDPE (Polyolefin)	26

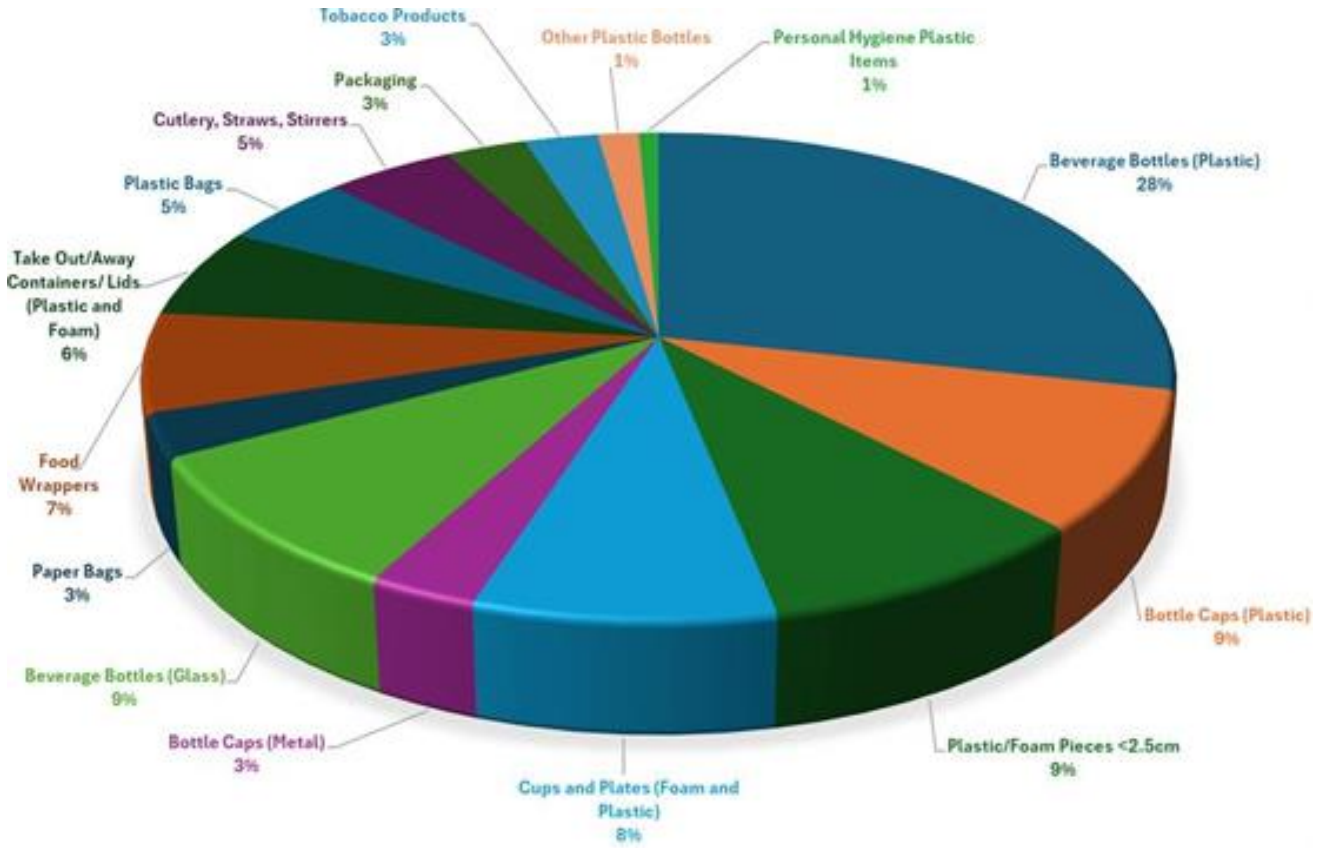
FINDINGS

- Diverted over 500 tonnes of waste plastics from landfills.
- Most common plastic polymers, including PP, HDPE, PET, and LDPE.
- PP is the most common type of plastic polymer collected and processed, with HDPE being the least prevalent.

INVENTORY DATA

MARINE PLASTIC LITTER

Over the past 10 years plastics accounted for 8 of top 10 items collected during coastal cleanups



Waste Composition of Items Collected from Coastal Areas During ICC Exercises (2013-2023)

Source: Simmons and Associates, 2024

INVENTORY DATA

SECTORAL-TOURISM

Solid Waste Received from Cruise Ships Docked in Trinidad and Tobago (2018-2023)

Year	Waste Generated (Kilograms)		
	Food	Plastics	Other[20]
2018	34,200.00	43,219.80	244,000.00
2019	33,000.00	38,344.80	275,200.00
2020	34,200.00	6,365.10	231,200.00
2021[21]	0.00	0.00	0.00
2022	20,400.00	2,636.70	132,000.00
2023	79,800.00	18,787.10	556,000.00
2024[22]	51,600.00	6,824.40	371,200.00

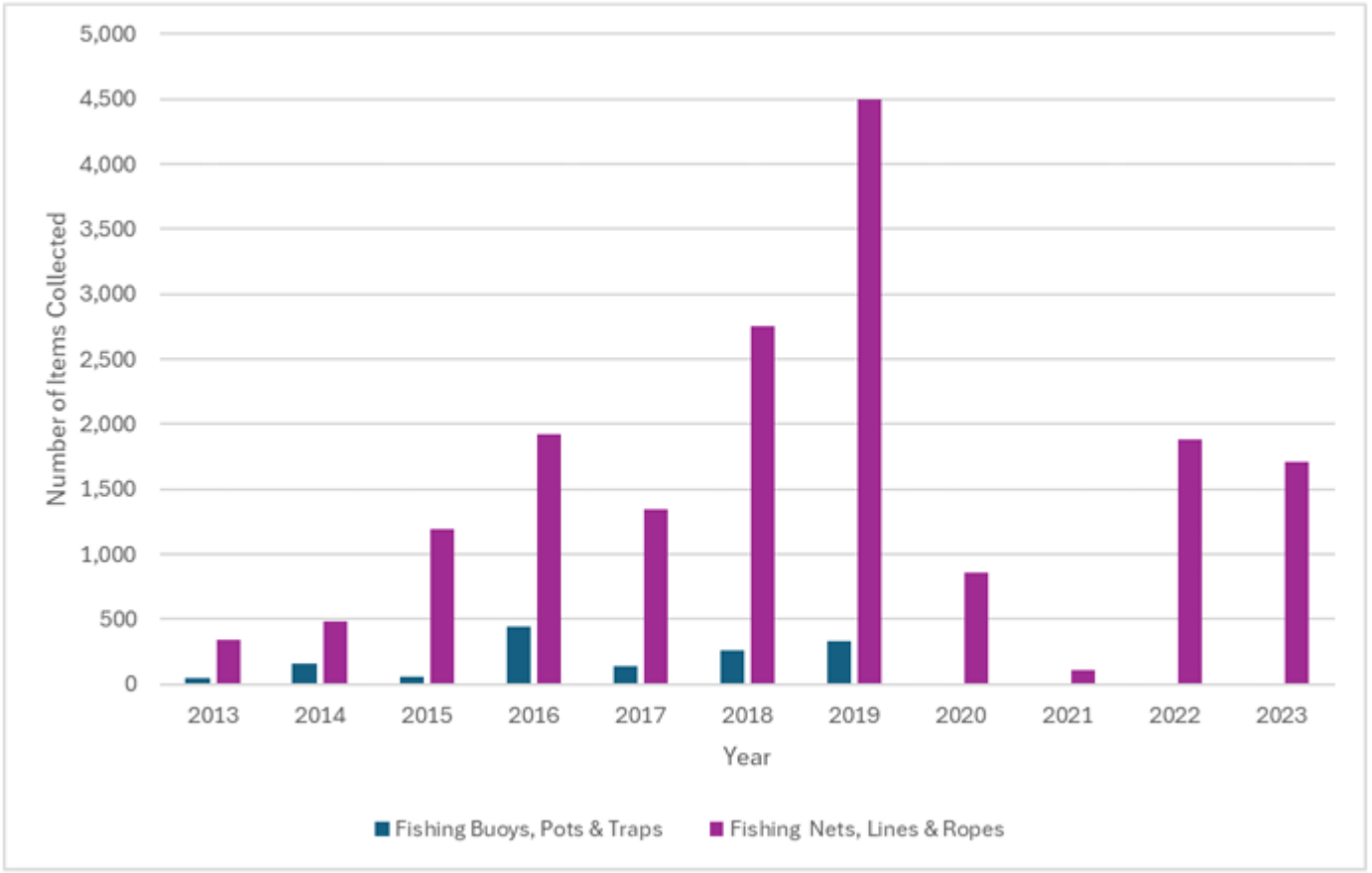
Source: Simmons and Associates, 2024

Notes
- 20-Other includes glass, scrap metal, wood, cardboard, incinerator ash and other dry solid waste.
- 21-In 2021, no cruise ships visited Trinidad and Tobago because the cruise industry was shut down globally due to the COVID-19 pandemic.

INVENTORY DATA

SECTORAL-FISHING

Fishing Gear Items Collected Annually During International Coastal Cleanup Exercises (2013–2023)



Source: Simmons and Associates, 2024

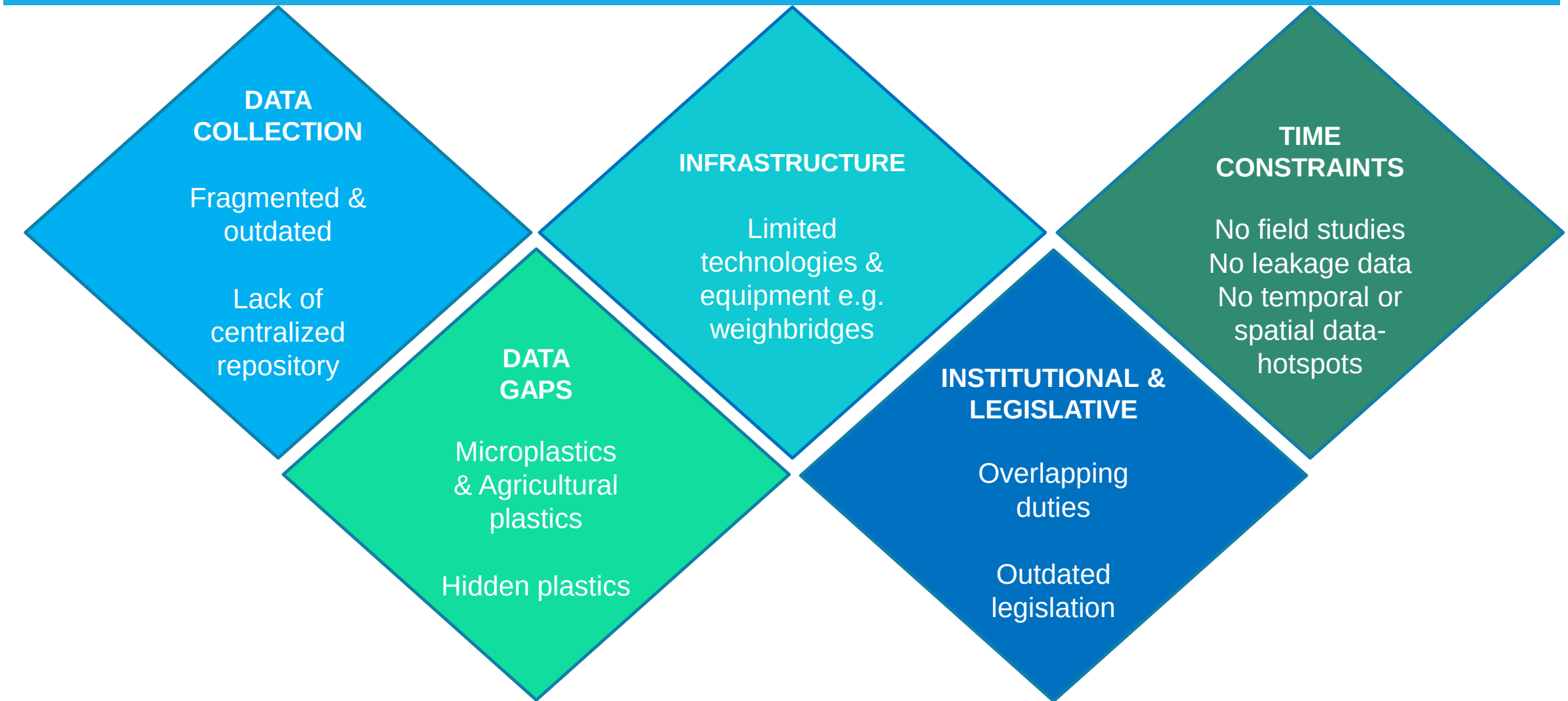
Fishing Gear	Total
Fishing Buoys, Pots and Traps	5,085
Fishing Gear (Net, Line, Rope)	28,037
Total	61,159

Source: Simmons and Associates, 2024

FINDINGS

- Lower counts in 2020 and 2021 can attributed to the COVID-19 pandemic.
- Overall, the data highlights a growing issue with fishing gear waste, with fishing nets, lines, and ropes being the most frequently collected items.

INVENTORY LIMITATIONS



NATIONAL SOURCE INVENTORY BENEFITS

- Utilises **systematic data collection** and analysis tools to **identify and quantify** the **sources of plastic pollution** by examining plastic waste generation, leakages and flows within a country, including its marine environments.
- Assists in developing targeted policies and strategies to reduce plastic pollution and marine litter- supports evidence-based decision-making and effective plastic waste management, contributing to environmental sustainability and pollution prevention- **Roadmap and Strategy for Addressing the Lifecycle of Plastics.**
- Provides a platform/avenue to monitor progress in waste reduction efforts and for monitoring microplastics given their pervasive environmental presence and potential adverse health impacts.- **Baseline information.**
- Can be used as a tool to improve public awareness about the impacts of plastic pollution.- **Component 10-Awareness Raising.**

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LIFE CYCLE ANALYSIS OF PLASTICS FLOWS

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THANK YOU!

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