SEA-MaP
SOUTHEAST ASIA REGIONAL PROGRAM ON COMBATING MARINE PLASTICS

Southeast Asia Regional Program on Combating Marine Plastics (SEA-MaP)

Recommendations for a Plastic Pollution Indicator Framework for ASEAN

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LIST OF ACRONYMS

AMS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
ASEAN RAP	ASEAN Regional Action Plan for Combating Marine Debris in the ASEAN Member States (2021-2025)
AWGCME	ASEAN Working Group on Coastal and Marine Environment
EPR	Extended Producer Responsibility
ERIA	Economic Research Institute for ASEAN and East Asia
GPAP	Global Plastic Action Partnership
IGES	Institute for Global Environmental Strategies
ILBI	International Legally Binding Instrument
INC	International Negotiating Committee for an international legally binding instrument (ILBI) to end plastic pollution
Lao PDR	Lao People's Democratic Republic
M&E	Monitoring and Evaluation
MSW	Municipal Solid Waste
POM	Placed On the Market
SDG	Sustainable Development Goals
SEA-MaP	Southeast Asia Regional Program on Combating Marine Plastics
SUP	Single-Use Plastic
UNEP	United Nations Environment Programme

1.0 INTRODUCTION

The Association of Southeast Asian Nations (ASEAN) Regional Action Plan (RAP) for Combating Marine Debris in the ASEAN Member States aims to enhance coordination at the regional and international levels for achieving sustainable management of coastal and marine environments through responding to marine plastic pollution. The strategy for addressing marine plastic debris involves actions at three key stages of the plastic value chain: (1) reducing inputs into the system; (2) enhancing collection and minimizing leakage; and (3) creating value for waste reuse.

Each of the ASEAN Member States (AMS) has national policies and strategies in place with indicators and targets relevant to the main objectives of the ASEAN RAP (Appendix A). Consequently, all AMS collect related data, at least partly based on circular economy principles of reducing inputs and waste generation, enhancing waste collection and management, and creating value from waste, including through recycling (Figure 1). More specifically, the AMS are making progress towards the adoption of policies to regulate or ban single-use plastic (SUP), the promotion of extended producer responsibility (EPR), and combating marine debris.

Strengthened data collection and monitoring, partly harmonized across the ASEAN, will help the AMS track progress and identify areas where more efforts are needed. A robust monitoring and evaluation (M&E) mechanism benefits each of the AMS as it supports understanding of their specific challenges contributing to plastic pollution. This will enable them to take more effective action through national policies and strategies. It will also help AMS countries meet expected reporting obligations under the forthcoming international legally binding instrument. Consolidating data at the regional level will help to track the implementation of the ASEAN RAP.

The ASEAN RAP calls for a systemic transformation of the plastic value chain. Assessing progress on this complex task requires a carefully designed system of indicators. A review of international good practices, including those that already exist in ASEAN and are relevant to the ASEAN RAP, informed the formulation of a set of indicators following the plastic life cycle. These indicators enable the tracking of progress and outcomes at the national and regional levels, both throughout and after the implementation period of the ASEAN RAP. The research process undertaken to identify the proposed common indicators is outlined in Appendix B.

Figure 1 Main stages of the plastics value chain.

Note: SUP = single-use plastic, EPR = extended producer responsibility.

To help meet the objectives of the ASEAN RAP, this synthesis report offers recommendations for a common indicator framework, considering the current availability of data and capacities for expanded data gathering (Section 2.0) and a roadmap towards the establishment of a regional M&E mechanism (Section 3.0). Recommendations were informed by a background study on the status and impact of plastic pollution in ASEAN, international good practices on indicators for plastics use (see Appendix C for a summary), waste management, and marine debris, as well as existing policies and data collection practices in the AMS.

2.0 THE RECOMMENDED INDICATOR FRAMEWORK

Key indicators for each major stage of the plastics value chain were selected, considering data collection practices in AMS, national strategies and policy frameworks, and institutional arrangements. The recommended common indicators are well aligned with the elements of the ASEAN RAP. Differences in the implementation of plastic waste legislation and policies across the ASEAN region call for a tiered approach targeting several headline indicators to eventually be used by all the AMS and other indicators to be adopted flexibly depending on national circumstances and priorities.

The recommended indicator framework includes five common headline indicators, several supplementary indicators, and supportive indicators:

- Headline indicators (Figure 2) are the minimum set of indicators recommended for tracking progress towards the objectives of the ASEAN RAP. These five headline indicators can capture overall trends in plastic consumption, waste generation and recycling, and plastic leakage. All AMS can already generate data for four of the indicators (or related proxies[1]); however, consistent data collection for the indicator on plastic marine debris requires additional efforts.
- Supplementary indicators provide more granularity than the currently recommended headline indicators but require additional capacity building for data collection to be uniformly applicable across the AMS.
- Supportive indicators can be used to measure the effectiveness of specific policies implemented by AMS, guiding efforts toward policy development and implementation. They are not intended to be used by all the AMS.

Adopting the complete indicator framework and building the capacities needed to generate the related data regularly would have clear benefits for the AMS (Appendix D). However, differences in national policy objectives and existing capacities for data gathering, currently prevent some AMS from generating comparable data for the complete indicator framework. Therefore, each country may initially proceed with the headline indicators (or related proxies) for which they can provide data while strengthening data collection capacities for the remaining ones.

Headline Indicators

The background study indicated that regularly produced official statistics for the recommended headline indicators are currently unavailable for some or all of the AMS. Monitoring these five key dimensions of the plastics value chain thus requires data from alternative sources, such as irregular surveys and inventories, or proxy indicators. Proxy indicators and alternative data can serve as temporary

[1] Proxy indicators measure something similar to what the recommended main headline indicators are intended to measure. They are based on data that exists currently or can be generated with existing capacities. They are not perfect substitutes for the headline indicators but can be used initially while strengthening data collection capacity for the headline indicators.

substitutes for the main headline indicators for some of the AMS, providing a sufficient indication of progress towards the ASEAN RAP objectives while strengthening the capacity to produce regular statistics. To assist each country in deciding whether to use the main headline indicator with data from official statistics, rely on alternative data sources, or use a proxy indicator, decision trees are provided for four of the headline indicators (Appendix E).

The AMS governments are recommended to consider adopting the following five headline indicators:

1. **Quantity of plastic materials placed on the market (POM)**. This indicator corresponds to the first ASEAN RAP objective of reducing input to the system. Measured as the total amount of plastics entering national economies each year (in metric tons per year), it shows how the plastic management challenge changes over time. Measured on a per-capita basis, it can be used for international comparisons. Plastic POM can be calculated based on data on international trade (imports minus exports) and domestic production, using the Basel Convention inventory toolkit for plastic waste. This requires detailed industrial and trade statistics of plastic across all sectors, currently only available for a few AMS (see details in Figure E1). Countries that do not have trade and manufacturing statistics with sufficient granularity can use data only for the plastic sector, in metric tons per year, as a proxy. Countries that do not have data in physical terms, can use the market value of plastic POM based on the plastic sector as an alternative proxy.
2. **Quantity of plastic waste**. This indicator measures the amount of plastic waste discarded by national economies each year, measured in metric tons. It is different from indicator 1 (plastic POM) since some plastic items are long-lived. In economies where the accumulated amount of plastic materials is growing, the amount of plastic waste would be smaller than the amount POM. It can be calculated based on MSW generation data (metric tons of MSW per year) and waste composition data (average share of plastics in MSW).[2] As not all AMS currently have regularly produced official statistics on MSW generation and composition, data from alternative sources, such as national inventories, surveys and assessments may be used initially.
3. **The percentage of the population with MSW collection services**. This indicator corresponds to the second ASEAN RAP objective of enhancing collection and minimizing leakage. Monitoring the share of the population provided with MSW collection services helps assess the risk of improper disposal, such as littering, open burning, or illegal dumping. Regularly updated statistics on the percentage of the population with MSW collection services are only available for a few AMS, indicating a need to initially rely on data from alternative sources (Figure E3). The background study found that such data exists for almost all AMS. It is also possible to initially use a proxy indicator, the Sustainable Development Goals (SDG) indicator 11.6.1.(b) “Percentage of managed national waste”, where countries have committed to provide data and where the international community has resources to support capacity strengthening as needed.
4. **The amount of plastics recycled**. This indicator corresponds to the third ASEAN RAP objective of deriving value from plastic waste. It shows the amount of plastic materials that do not need to be treated as waste or that risk leaking to the environment. When considered together with indicators 1 and 2, it also helps understand to what extent plastic materials re-enter the economy to become new products.[3] The background study indicates that data from government sources is available for all or most AMS, although data collection methods may need to be harmonized to allow better comparability. As a proxy, it is possible to use the total

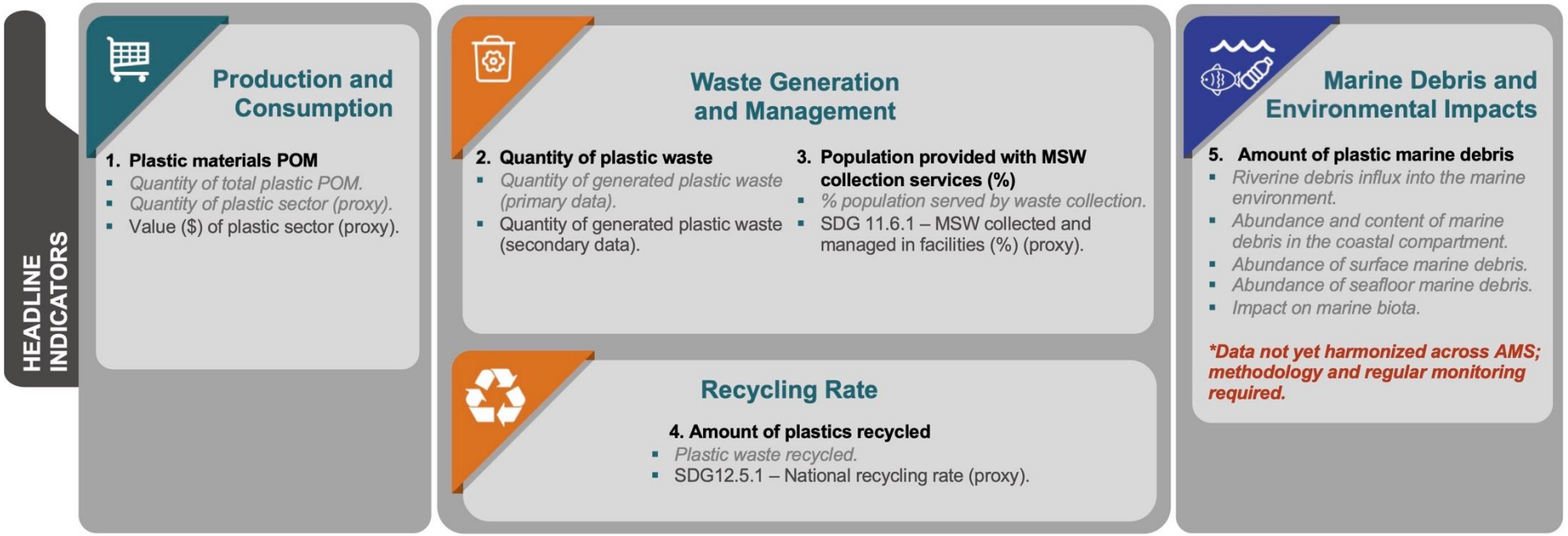
[2] The recommended metric is to make the composition analysis before unloading waste at the landfill site.

[3] However, it is important to consider that higher recycling rates do not always correlate with reduced reliance on virgin resources, as recycled plastics often result in low-grade materials that may not replace virgin plastics effectively and could lead to increased overall consumption.

recycling rate for all materials (SDG indicator 12.5.1). As one of the official SDG indicators, countries should be in the process of building the required capacity for data generation.

5. **The amount of marine plastic debris**. The amount of marine plastic debris provides the ultimate indication of the effectiveness of governments' efforts irrespective of what types of policies are used. However, a robust monitoring system requires frequent sampling in numerous locations and different environmental compartments (river, beach, surface, water body, sea floor) using well-defined sampling protocols. The background study found that while several assessments have been conducted in ASEAN, generating a growing body of data, more consistent data gathering is needed for this indicator to be adopted. However, some jurisdictions, including the EU, are using this indicator already, and there are examples also in ASEAN of comprehensive marine debris monitoring in different environmental compartments, indicating an opportunity to transfer experiences and strengthen capacity based on existing expertise in the region.

Figure 2 Recommended indicator framework.



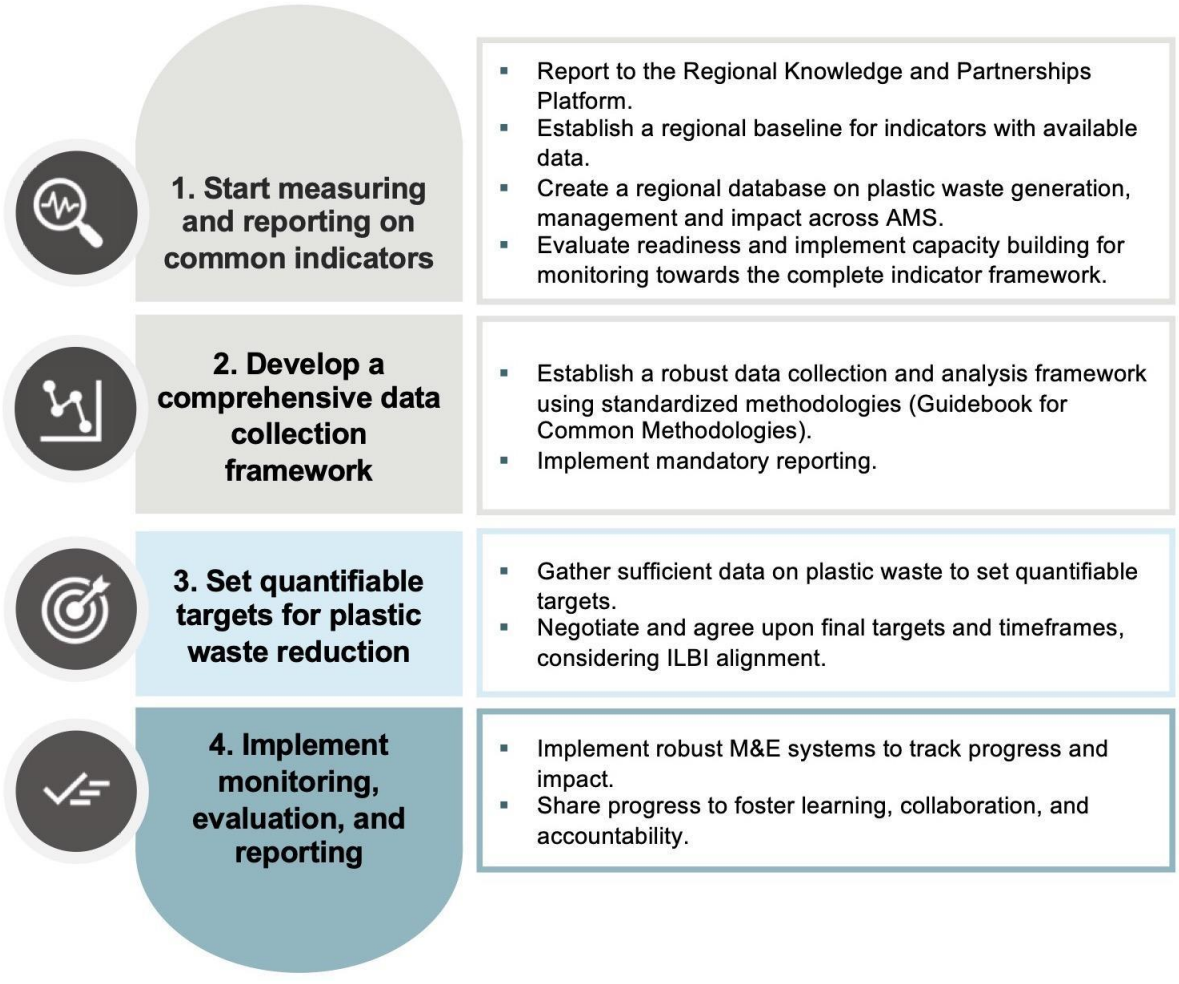
Note: **Bold** = headline indicators – essential to track progress on the main objectives of the ASEAN RAP, dark gray text = data could be available across all AMS for indicator monitoring in the short term with the use of proxy indicators to serve as temporary substitutes for the headline indicators as necessary, *light gray italics text* = data is not currently available across all AMS for indicator monitoring, red text = important prerequisite.

POM = placed on the market, SDG = Sustainable Development Goal, MSW = municipal solid waste.

3.0 PROPOSED ROADMAP

Following adoption of the indicator framework, the proposed Roadmap outlines possible steps towards an M&E mechanism for the ASEAN RAP and beyond (Figure 3). As an initial step, AMS may begin measuring and reporting on agreed-upon indicators on a regular basis, establishing a regional baseline based on available data collated through, for example, the forthcoming Regional Knowledge and Partnerships Platform,[4] which will be developed with the support of the SEA-MaP Regional Project. Within this initial step, the AMS may start submitting the available data for populating the indicators through the official statistical channels. This will inform customized capacity building for different AMS that have varied levels of capacities and readiness to provide data for populating the recommended common indicators. In the next step, the reported data will be further detailed and harmonized through common methodologies and guidelines. Concurrently, awareness campaigns need to be implemented to empower stakeholders and raise public awareness on the issue of plastic waste. This will foster collaboration and drive momentum behind the initiative.

Figure 3 Proposed Roadmap.



Note: ILBI = international legally binding instrument, M&E = monitoring and evaluation.

As data collection with the recommended indicators begins, relevant ASEAN working groups such as the ASEAN Working Group on Coastal and Marine Environment (AWGCME) in collaboration with

[4] The Regional Platform for Knowledge and Partnerships supports the implementation of Action 8 of the ASEAN RAP, which envisages the creation of a regional knowledge network and database for reporting on marine littering and statistics.

ASEAN sectoral bodies and other relevant working groups, may develop a robust data collection and analysis framework with clear guidelines, reporting formats, and deadlines for data submission. Additionally, having standardized methods for each indicator will ensure effective progress measurement.

Once sufficient data on the plastic waste value chain are available, AMS may choose to negotiate and agree on quantifiable shared targets (e.g., percentage reduction in plastic litter) and a timeframe for achievement. Furthermore, the progress of implementation of the ASEAN RAP will be tracked, impacts assessed, and areas for improvement identified. Regular reviews and updates to the M&E mechanism will ensure the initiative remains relevant and responsive to evolving challenges.

There are multiple benefits to adopting the recommended Roadmap towards the complete indicator framework and M&E mechanism:

- It builds on national and regional activities already underway and provides practical steps towards robust monitoring and reporting of progress on the ASEAN RAP objectives.
- It enhances the preparedness of AMS for a future international legally binding instrument (ILBI) on plastics.
- It supports the strengthening of national policy instruments through activities aimed at harmonizing policy guidelines.
- It supports a possible future process of common target setting.

APPENDICES

APPENDIX A
POLICY SUMMARY

Table A1 Regional Baseline – implemented and planned laws and policies.

Country	Waste Law	Plastic Law	National Strategies	SUP Bans	SUP Fees	EPR	MSW Collection	Import Regulation	Marine Debris
Brunei Darussalam									
Cambodia					Not monitored	Planned			
Indonesia									
Lao PDR									
Malaysia				Non-binding		Planned			In National Action Plan
Myanmar				Local			Local		
Philippines				Non-binding					In National Action Plan
Singapore				[5]	[6]	Planned[7]			In National Action Plan
Thailand				in National Parks		Planned			
Viet Nam				Non-binding					

Note: Light green = mandatory, orange = voluntary, planned in the strategies, or limited scope, gray = absent. EPR = extended producer responsibility, Lao PDR = Lao People's Democratic Republic, SUP = single-use plastic, MSW = municipal solid waste. Waste law defines what materials are classified as waste, responsibilities and authorities regarding collection, handling, and treatment, and rules on disposal methods. Plastic law provides rules on the use of natural resources and materials, including for example the use of plastic packaging. National strategies provide time-bound targets and key actions for solid waste management in general or plastics specifically. SUP Bans prohibit or restrict the sales or use of certain single-use plastic items. SUP Fees are mandatory charges or taxes targeting certain types of single-use plastic items. Marine debris refers to national legislation, strategies, or action plans focused on combating marine debris.

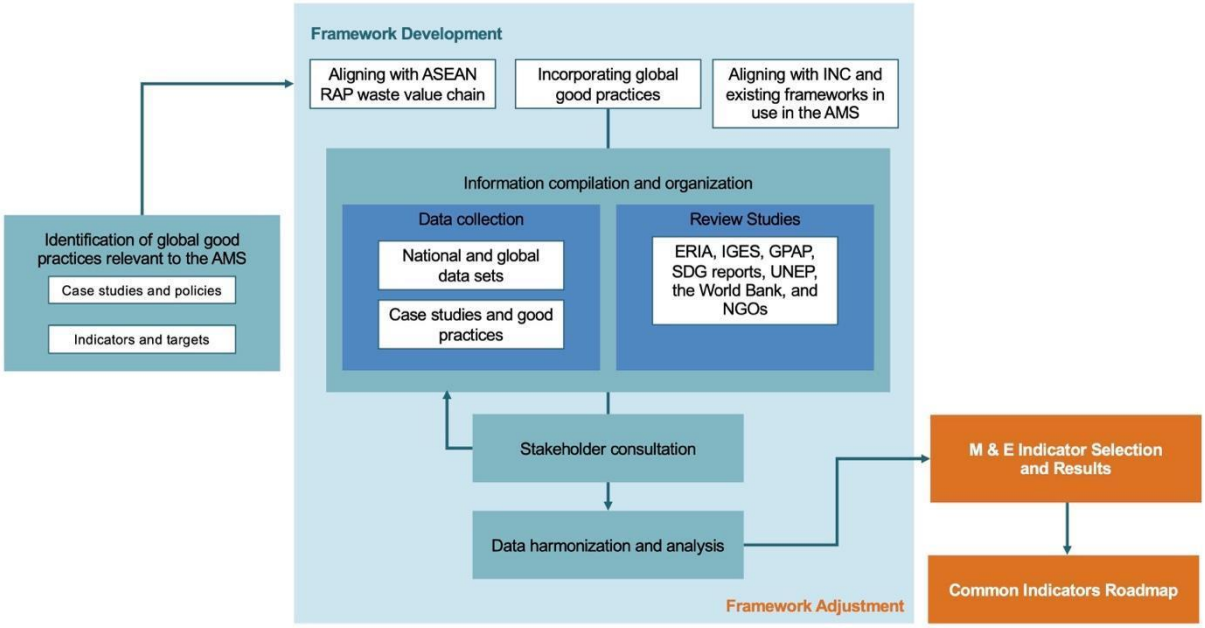
[5] The use of disposable crockery and cutlery for dine-in meals has been disallowed at new hawker centres since 2016 (Ministry of Sustainability and the Environment 2022).

[6] Singapore's Disposable Carrier Bag Charge (DCBC) does not apply to plastic disposable carrier bags only, but to disposable carrier bags of all material types.

[7] A Mandatory Packaging Reporting scheme has been implemented in 2021 and a Deposit Return Scheme (DRS) will be implemented in 2026.

APPENDIX B
THE RESEARCH PROCESS

Figure B1 Schematic presentation of the research process.



Note: AMS = ASEAN Member States, ASEAN RAP = ASEAN Regional Action Plan for Combating Marine Debris in the ASEAN Member States, ERIA = Economic Research Institute for ASEAN and East Asia, GPAP = Global Plastic Action Partnership, IGES = Institute for Global Environmental Strategies, INC = international negotiating committee towards an international legally binding instrument (ILBI) to end plastic pollution, M&E = monitoring and evaluation, NGO = Non-Governmental Organization, SDG = Sustainable Development Goals, UNEP = United Nations Environment Programme.

APPENDIX C
KEY INTERNATIONAL AND REGIONAL APPROACHES TO TACKLING PLASTIC MARINE DEBRIS AND LESSONS LEARNED

A background study identified the European Union and China as having the most comprehensive M&E systems and indicator frameworks for plastics and marine debris. This Appendix provides a snapshot of their approaches.

1. European Union (EU): Comprehensive Legislation and Monitoring Systems

The EU's Circular Economy Action Plan and the Single-Use Plastics (SUP) Directive are cornerstones of its approach to managing plastic pollution. The EU has established a robust legislative framework that mandates detailed reporting on plastic production, waste management, and marine debris. Through the Extended Producer Responsibility (EPR) schemes, producers are held accountable for financing the collection, recycling, and disposal of plastics. Eurostat plays a pivotal role in collecting and analyzing data, enabling member states to make informed decisions. The Marine Strategy Framework Directive (MSFD) further strengthens these efforts by requiring member states to monitor marine litter, assess its impact, and implement measures to achieve Good Environmental Status (GES) in their marine waters.

Lesson: Comprehensive legislative frameworks supported by strong data collection and monitoring systems can drive significant reductions in plastic pollution and foster circular economy practices.

Summary of EU indicators related to plastic production, waste management, upstream policies and practices, and marine debris.

Indicator	Unit	Data source	Methods for Calculation
Plastic Production			
Plastic production	t/year	EPR and producer responsibility organizations (PROs), data from producers, data submitted to National and Regional Authorities, import or export statistics	Total plastic POM
Plastic bags POM	Number of items/year t/year	Plastic producers, PROs, data submitted to National and Regional Authorities	Number of items or weight POM; Indirect calculation from mandatory taxes, levies, and charges
International trade of plastic	t/year	European Union Customs Information System	Calculated through aggregated quantities via the Harmonized Commodity Description and Coding System (HS) Codes stipulated by the Customs Cooperation Council (World Customs Organization)
Plastic product use and reuse	Number of items/year	PROs, Electronic Product Registration	Number of reusable units POM Number of rotations per year of a single item
Plastic Waste			

Indicator	Unit	Data source	Methods for Calculation
Plastic waste generation	t/year	EPR data (data from PROs or producers), data submitted to national authorities, municipal solid waste (MSW) composition	Plastic waste generation = total plastic POM Waste composition analysis
Total recycled plastic quantities	t/year	Recycling plants reporting to National Authorities Eurostat	Total output weight of the targeted material Total plant input, indicating the weight of material received at the plant
Total recycled plastic by type	t/year	Recycling plants reporting to national authorities (PROs), data from producers	weight of the separately collected polyethylene tetraphthalate (PET) bottles per total weight POM
Total recovered plastic quantities	t/year	Recovery plants (waste to energy – WtE) reporting to National Authorities, PROs, data from producers, Eurostat	Total material input in the recovery plants
Total plastic to landfill	t/year	Landfills reporting to national authorities	Waste composition analysis on landfilled residual MSW
Plastic waste imports	t/year	Customs and Competent Authorities implementing the Waste Shipment Regulation in each EU Member State	Amounts can be obtained from the data from Custom Declarations, Notification and Consent Procedures, etc.
Marine Debris			
Composition, amount, and spatial distribution of micro-debris: on the coastline	Number of items and type or kg/100 m	Plastic surveys conducted on sample areas, ship observers, aerial counts, visual surveys, water filtration, etc. pan-European Marine Litter Database (MLDB)	Collection and sampling of debris, count of the number of items
in the surface layer of the water column	Under development	Under development	Under development
in sea floor sediment	Under development	Under development	Under development
Amount of debris ingested by marine biota	Number of items and type or kg/animal	Survey on the biota, sectioning of cadavers of animals which are commonly found in the area to guarantee supply of adequate samples	Headcount on the number and type of items found in the digestive tract of cadavers; standard protocols need still to be developed
Number of individuals adversely affected due to debris	Number of entangled birds	Survey on the biota	A standard protocol for recording entanglement would need to be developed and implemented
Upstream Policies and Practices			
Competitiveness and innovation	Number of patents/per inhabitants	European Patent Office, Database PATSTAT	Total number of patents related to recycling and secondary raw materials
Green Public Procurement (GPP)	%	Public authorities from member states	Share of contracts including environmental criteria on total GPP expenditures

Note: Metric tons (t). EPR = extended producer responsibility, GPP = Green Public Procurement, HS Code = Harmonized Commodity Description and Coding System Code, MLDB = pan-European Marine Litter Database, MSW = municipal solid waste, PET = polyethylene tetraphthalate, POM = placed on the market, PRO = producer responsibility organization, WtE = waste-to-energy.

2. China: Robust Policy Implementation and Advanced Monitoring

China has implemented a series of regulations aimed at reducing plastic pollution, including the "Opinions on Further Strengthening the Treatment of Plastic Pollution" issued in 2020. This directive provides the framework for reducing plastic consumption, enhancing recycling, and developing comprehensive monitoring systems. China's national statistical database, the China Statistical Yearbook, collects detailed data on plastic production and consumption. The country is also advancing its marine litter monitoring with technical standards for evaluating marine waste and microplastics, which are essential for shaping policies and mitigating plastic pollution.

Lesson: Integrating clear policy directives with advanced monitoring systems and international collaboration can significantly enhance a nation's ability to manage plastic pollution effectively.

Summary of China's indicators related to plastic production, plastic waste, andmarine debris.

Indicator	Unit	Data source	Methods for calculation
Plastic Production			
Plastic production	t/year	China Statistic Yearbook through data submitted to the China Plastic Processing Industry Association	Total plastic POM reported by the producers to the China Plastic Processing Industry Association
Plastic bags and SUPs POM	Number items/year t/year	Retailers, e-commerce platform companies, express delivery firms, and fast-food establishment	Reporting of the sold amounts to the relevant authorities
International trade of plastic and plastic products	t/year CNY 100 million/year	Reporting system of the General Administration of Customs of the People's Republic of China Custom statistics	UN Standard International Trade Classification (SITC) HS codes
Plastic Waste			
Waste generation, collection, transport, and treatment	t/year	China Statistical Yearbook 2022 Breakdown for plastic not available	Type, quantity, flow direction, storage, utilization, and disposal of industrial solid waste are considered
Total recycled plastic quantities	t/year	China Recycled Plastic Industry Development Report 2019–2020	Members reporting to the China Plastic Recycling Association of China National Resources Recycling Association

Indicator	Unit	Data source	Methods for calculation
Total recycled plastic quantities by type	t	Retailers, e-commerce platform companies, express delivery firms, fast-food establishments	Report of retailers to the relevant authorities on plastic bags and SUPs
Disposal and reuse of industrial waste by region	t/year	China Statistical Yearbook 2022 Breakdown for plastic not available	Cities reporting to the China Statistical Yearbook 2022.
Plastic waste imports	t/year	"Catalog of Solid Waste Forbidden to Import" to identify prohibited plastic waste imports	Plastic waste imports are mostly prohibited in the country
Marine Debris			
Floating garbage on the sea bulk and extra-large blocks	items/km^2	Reporting requirements under the Bay Chief Regulation	Field surveys and clean-up activities organized by the local authorities under the Bay Chief Regulation
Floating garbage on the sea – middle blocks and small block	items/km^2		
Floating garbage on the sea average density	kg/km^2		
Submarine garbage average number and density	items/km^2; kg/km^2		
Beach trash average number and density	items/km^2; kg/km^2		
Impact of marine debris on biota	–	Currently not monitored	Currently not monitored

Note: Metric tons (t). CNY = Chinese yuan renminbi, HS Code = Harmonized Commodity Description and Coding System Code, POM = placed on the market, SITC = Standard International Trade Classification, SUP = single-use plastic.

APPENDIX D
BENEFITS AND CONSIDERATIONS OF THE RECOMMENDED INDICATOR FRAMEWORK

There are multiple benefits to adopting the recommended complete indicator framework. Specifically:

- It allows each country to provide comparable information supportive of the goals of the ASEAN RAP starting in 2024 through proxy indicators. Hence, it may immediately be used to estimate early reporting of primary data from each country by using a proxy calculation until the data for the direct calculation of the indicators are available in all AMS.
- It has common indicators that align with the draft text of the ILBI to end plastic pollution, including in the marine environment. Hence, it may support the AMS in playing an informed role in the international negotiations for a legally binding instrument on plastics and in preparing to meet their obligations under this future agreement.
- It is focused on the feasibility of implementation across the AMS based on priority, costs for monitoring, spatial and temporal characteristics, availability, and transparency of methods, uncertainty, and potential limitations. Hence, it will support each country in reporting on national policies and targets as well.
- Its basic form includes five common headline indicators which can be monitored already (in some cases with alternative data or by using proxy indicators) or in the near term with some capacity development. This will serve the ASEAN RAP and national reporting in each of the AMS.
- It includes supplementary indicators offering greater granularity for tracking plastic flow through the economy (e.g., by tracking specific plastic product flows), which were also identified. These indicators can be used by those AMS who have already collected the necessary data, and comparable information can be considered once data becomes available for each country.
- It includes supportive indicators which provide more nuanced information on the effectiveness of specific policies. These supportive indicators can vary among countries and become relevant when an AMS has targeted instruments in place and data becomes available.
- It may inform targeted capacity development and enable regional exchange of lessons to effectively serve the different needs as all AMS progress towards the more complex indicators with increased data requirements.

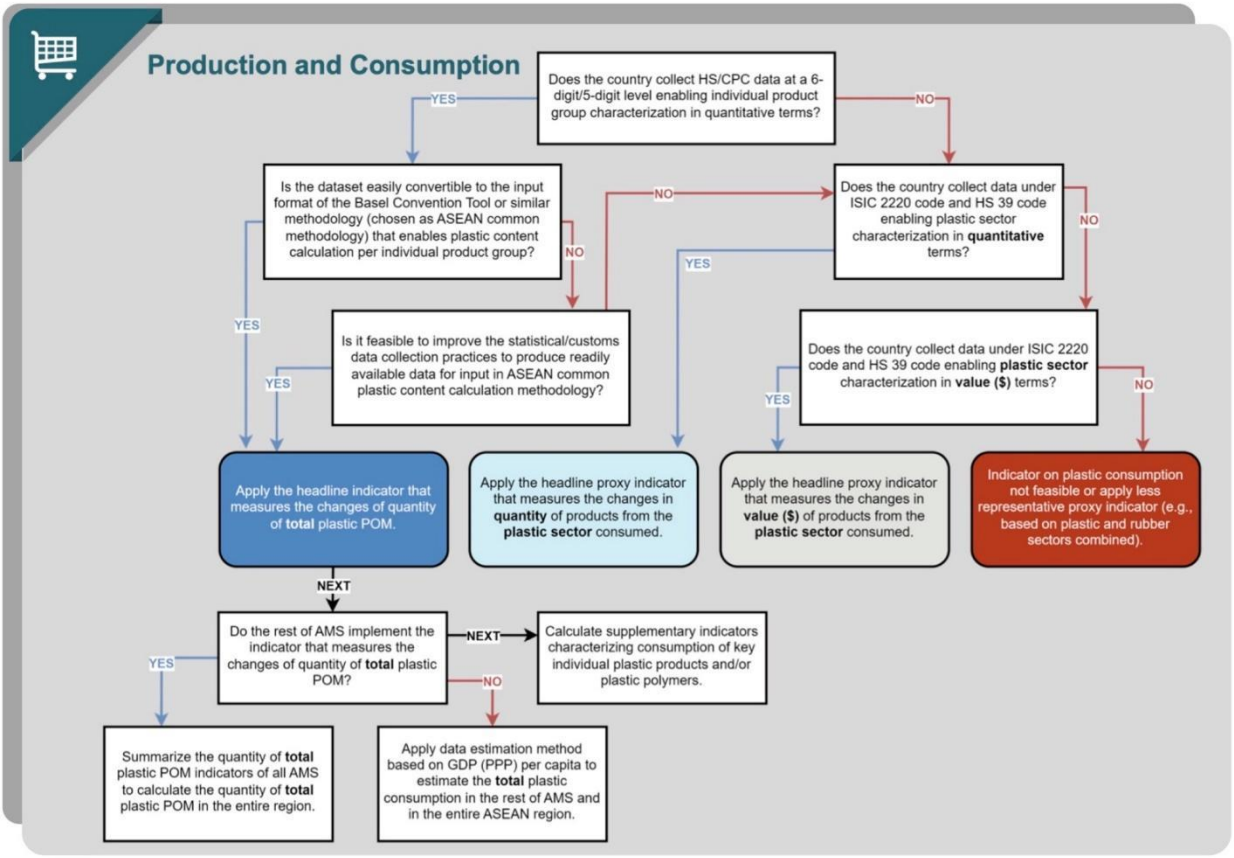
It is important to acknowledge some considerations alongside these benefits. While proxy indicators enable early reporting, transitioning to primary data collection for more accurate reporting is crucial in the long term. Additionally, utilizing supplementary and supportive indicators requires robust data collection systems in place. Finally, implementing the complete indicator framework effectively may necessitate targeted capacity-building efforts in some AMS.

By acknowledging these benefits and considerations, AMS can make informed decisions regarding the adoption and implementation of the complete indicator framework.

APPENDIX E
DECISION TREES FOR INDICATOR APPLICATION

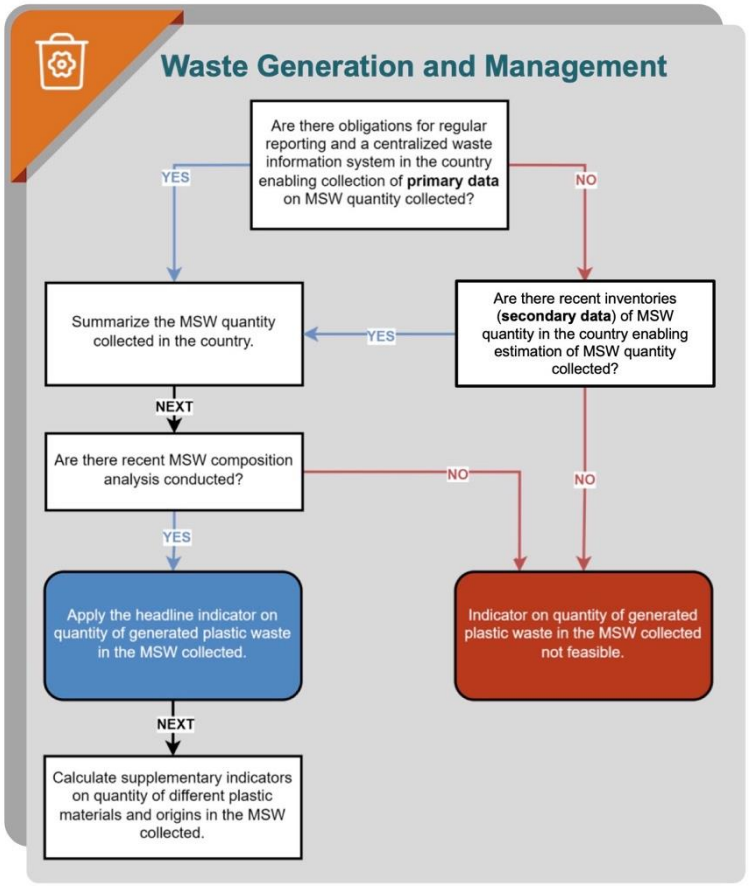
To help decide whether to use the headline indicator or a proxy, AMS may apply the decision trees provided in this Appendix. For each of the decision trees provided (Figures D1 to 4), start with considering the first question placed at the top of the 'tree'. Depending on the response relevant for each country, follow the arrow for that response to the next question. This way, each country will arrive at the end of the decision tree and find the answer to whether to use the headline indicator or a proxy.

Figure E1 Decision tree for the indicator on plastic production and consumption.



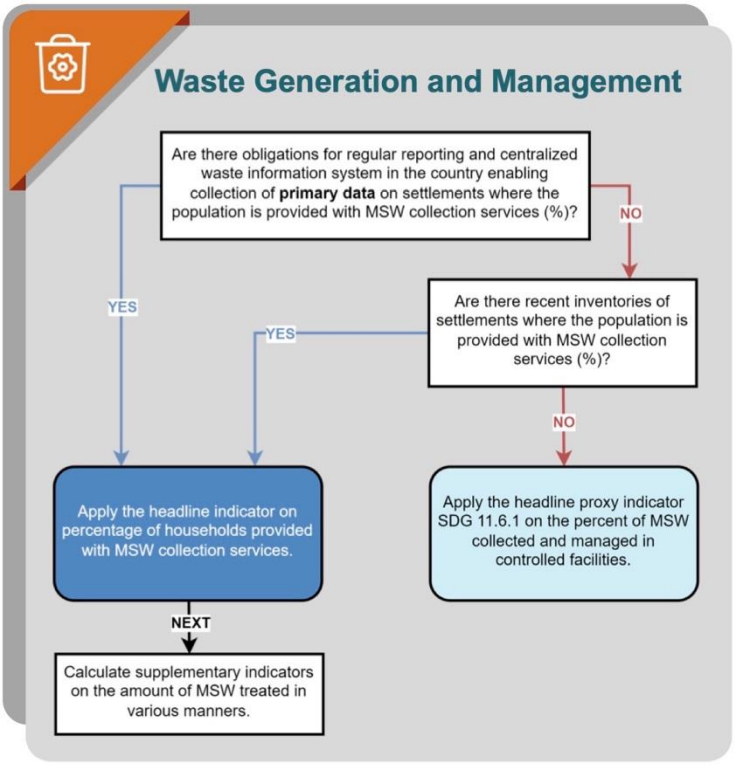
Note: AMS = ASEAN Member States, GDP = gross domestic product, HS code = Harmonized Commodity Description and Coding System, ISIC code = International Standard Industrial Classification of All Economic Activities code, POM = placed on the market, PPP = purchasing power parity.

Figure E2 Decision tree for the indicator on the quantity of plastic waste.



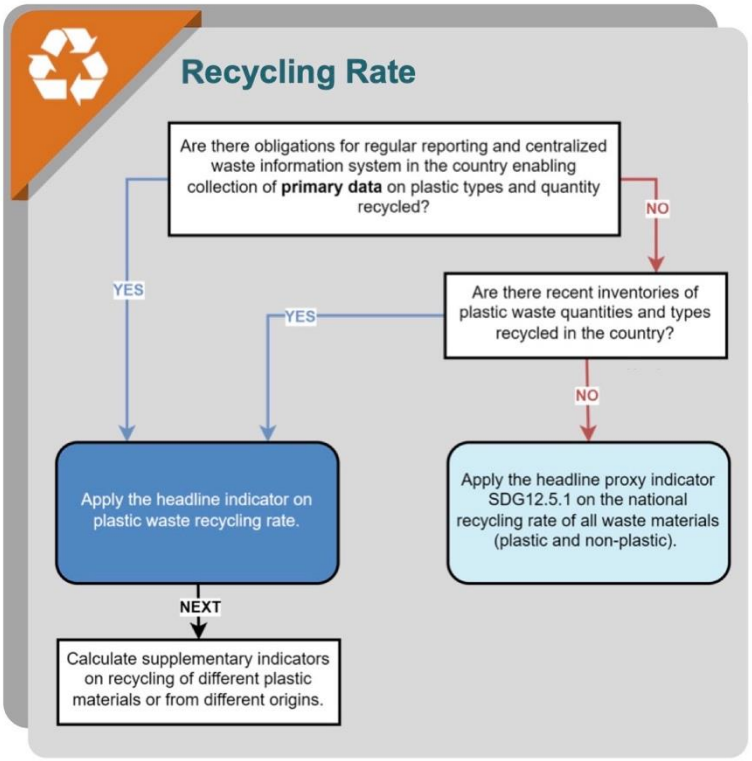
Note: MSW = municipal solid waste.

Figure E3 Decision tree for the indicator on the population provided with MSW collection services.



Note: SDG = Sustainable Development Goals, MSW = municipal solid waste.

Figure E4 Decision tree for the indicator on the plastic recycling rate.



Note: SDG = Sustainable Development Goals.