Sustainable ocean economy in Southeast Asia

The challenge of marine plastic pollution

Key Issues Note

UN environment programme

COBSEA
COORDINATING BODY ON THE SEAS OF EAST ASIA

Coordinating Ministry of Maritime Affairs and Investment Republic of Indonesia

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The sustainable ocean economy in the Southeast Asia, and the challenge of marine plastic pollution

Key Issues Note

Introduction

1. **Transitioning to a sustainable ocean economy is a global priority.** The ocean economy can be defined as the sum of the economic activities of ocean-based industries, together with the assets, goods and services provided by marine ecosystems. The ocean economy thus spans multiple sectors that include oil and gas, shipping, fishing, aquaculture, tourism, offshore electricity production (e.g. wind, wave power), mining, and marine biotechnology, and is projected to experience accelerated growth over the course of the coming decades. Existing and new ocean-based sectors have the potential to advance sustainable development through creating "jobs, food security and clean energy and to achieve diversified and resilient economies" (OECD, 2020[1]). However, due consideration of environmental and social sustainability is often lacking, and multiple ocean pressures have already disrupted communities and key economic sectors, especially for developing countries (OECD, 2020[1]).

2. **The Southeast Asia (SEA) region depends more heavily on the ocean for the livelihood of its populations as compared with other regions**. While this is due in part to the immense value of the region's marine ecosystems (e.g. coral reefs), it is also attested by the share of the ocean economy as a percentage of GDP—which is "substantially higher" than that of developed countries (Asian Development Bank, 2021[2]). However, increasing urbanisation, and growth of consumption per capita is projected to exacerbate the plastic pollution problem in the ASEAN Member States. It is noted that half of all people in ASEAN already live in urban areas, with an additional 70 million forecast to live in cities by 2025 (ASEAN Secretariat, 2021[3]).

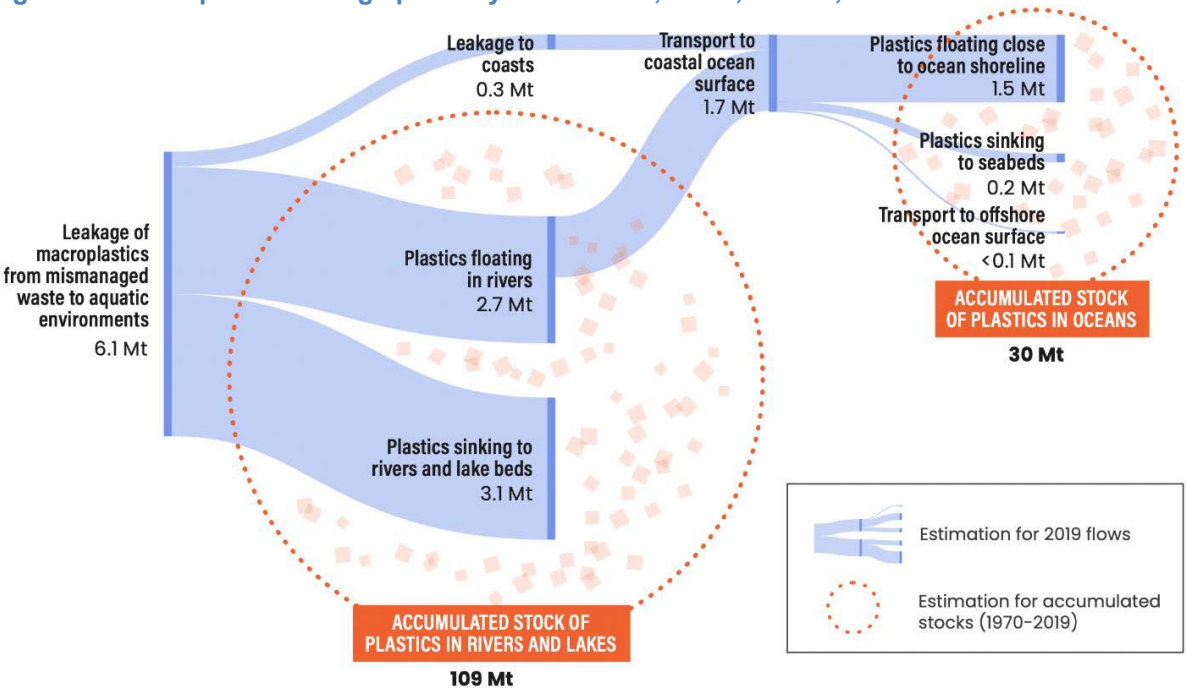
3. **The pollution caused by plastics constitutes one of the major challenges in the transition to a sustainable ocean economy**. A growing body of research documents the impact of plastic pollution in the ocean ecosystem, ranging from the potential of plastics to trap and kill marine lifeforms; accumulation of toxins in the aquatic environment; and the incorporation of plastics into the food chain with potential consequences for human health and well-being (Ferraro and Failler, 2020[4]). The marine plastic pollution challenge in the SEA region may be categorised into two main interlinked issues: the issue of waste management and recycling, on the one hand, and leakage to the marine environment, on the other hand.

4. **From a global perspective, mismanaged plastic waste constitutes the main source of macroplastic leakage into the environment** (OECD, 2022[5]).This is mainly due to inadequate waste collection and treatment, coupled with inadequate end-of-life disposal. The East Asia and Pacific region generated 468 million tonnes of waste in 2016—12% of which was plastic—at an average rate of 0.56 kg/person/day, with a majority of waste destined for landfills, open dumpsites, or incinerated (Kaza et al., 2018[6]) Without a co-ordinated policy response to promote proper waste management and recycling, the problem of plastic pollution is likely to grow in rapidly urbanising regions such as SEA.

5. **A significant amount of plastic leakage finds its way into the ocean.** It is estimated that globally accumulated stock of plastics in oceans between 1970-2019 is 30 Mt, and in rivers and lakes as high as 109 Mt (Figure 1) (OECD, 2022[5]). The linkage between freshwater and

marine plastic pollution remains under-examined, and there is a need to strengthen and harmonise monitoring efforts in the region.

Figure 1: Global plastic leakage pathways into rivers, lakes, coasts, and the ocean



Source: OECD (2022[5])

6. **The OECD has been working on topics pertaining to the sustainable ocean economy since 2016—with a regional focus on the SEA region since 2019**—and organised two Regional Ocean Policy Dialogues (in December 2019 and in December 2020), to discuss how to tackle the marine plastic pollution by focusing especially on issues related to finance and policy coherence across the SEA countries.

7. **The 3rd Regional Ocean Policy Dialogue aims to continue these discussions,** bringing together local, national, regional, and international actors as well as other stakeholders, such as private sector and civil society representatives in the SEA region to share challenges, guidance and best practices on data collection, policy coherence and finance to curb marine plastic pollution. The objectives of the Dialogue are in line with the efforts of the **Intergovernmental Negotiating Committee (INC)** developing an international instrument on plastic pollution, including in the marine environment.

Issue 1: Data, information, and indicators

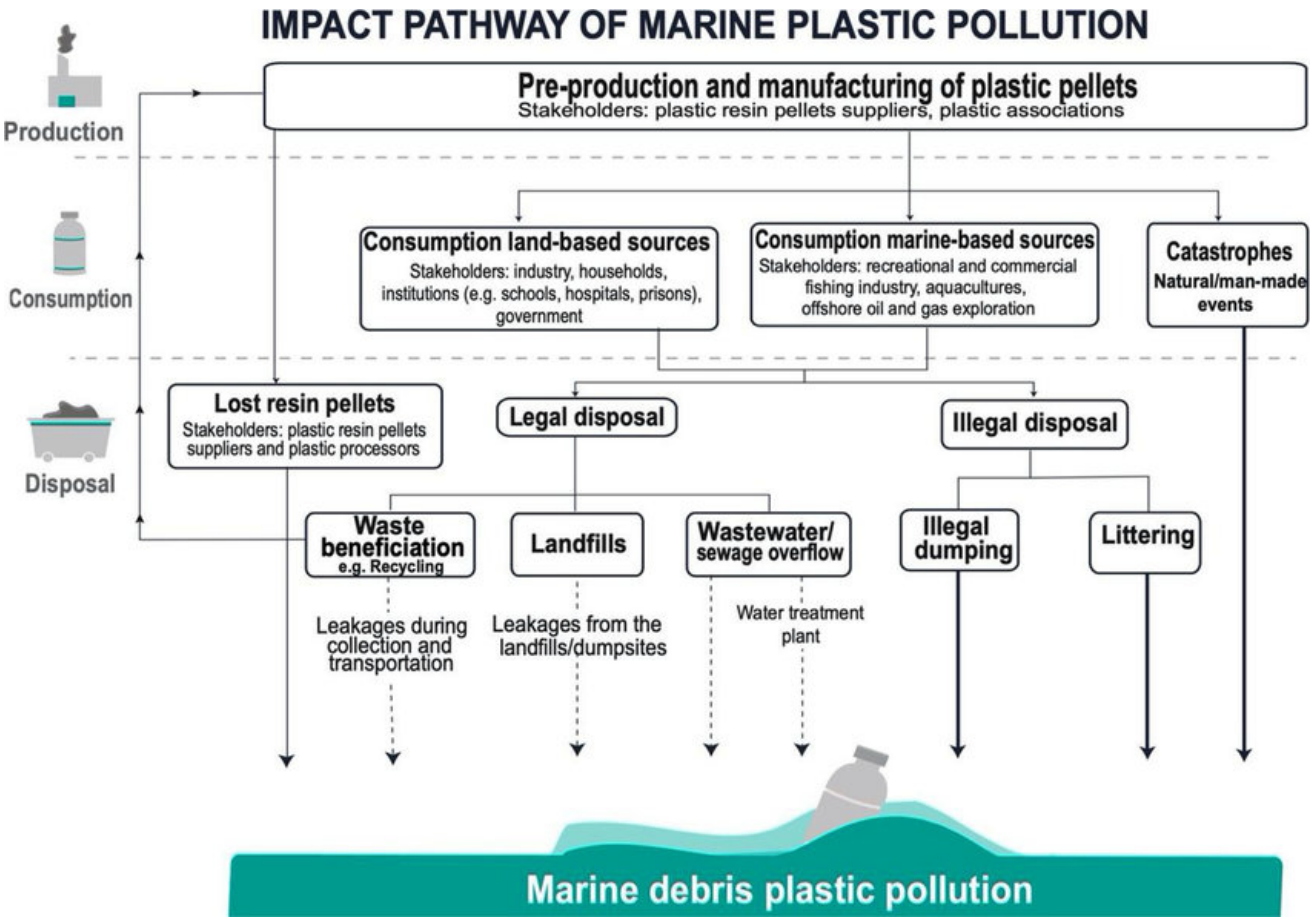
8. **Plastics are the most common form of marine debris. Establishing a way to coherently monitor plastic pollution data is a crucial first step to drive evidence-based policymaking**. Efforts are underway in the East Asian Seas region through the work of the Coordinating Body on the Seas of East Asia's (COBSEA). Countries adopted Regional Guidance to strengthen and harmonize monitoring efforts in the region in marine and coastal habitats, inland, and in rivers and freshwater, based on national capacities and global best practice (COBSEA, 2022[7]) (UNEP, 2020[8]). COBSEA is building capacity for robust data collection in the region In partnership with the Commonwealth Scientific and Industrial Research Organisation (CSIRO), has conducted national baseline surveys in 5 countries in

SEA, and is preparing a regional assessment on marine litter status and trends to inform evidence-based action (forthcoming in 2024).

9. **Data gaps on waste management need to be likewise addressed, as this comprises an essential part of the plastics lifecycle**. These include especially basic data concerning waste management, such as municipal solid waste (MSW) collection, percentage of waste recycled, and percentage of waste destined for landfills, incinerated, or dumped, etc. Gathering data on these indicators would also be important from the perspective of addressing leakage.

10. **An integrated approach to the collection of data e.g. from various sources, with a view to taking a full lifecycle approach on plastics, i.e. from production, to consumption, to final disposal, would be important for the SEA region**. In addition to basic waste management data mentioned above, this may also include data on plastic production, and data concerning the incorporation of plastics in consumer products (also classified into polymer type), as well as data on the trade in plastic waste (import/export). Plastics find their way to the ocean via multiple pathways (Figure 2), making it important to take this integrated approach to data collection, in helping policymakers quantify the extent of the problem, and subsequently to implement policies to close the leakage paths. UNEP is supporting national source inventories to manage data from different sources along the value chain and address data, policy, and legislative gaps, for evidence-based national policies and planning.

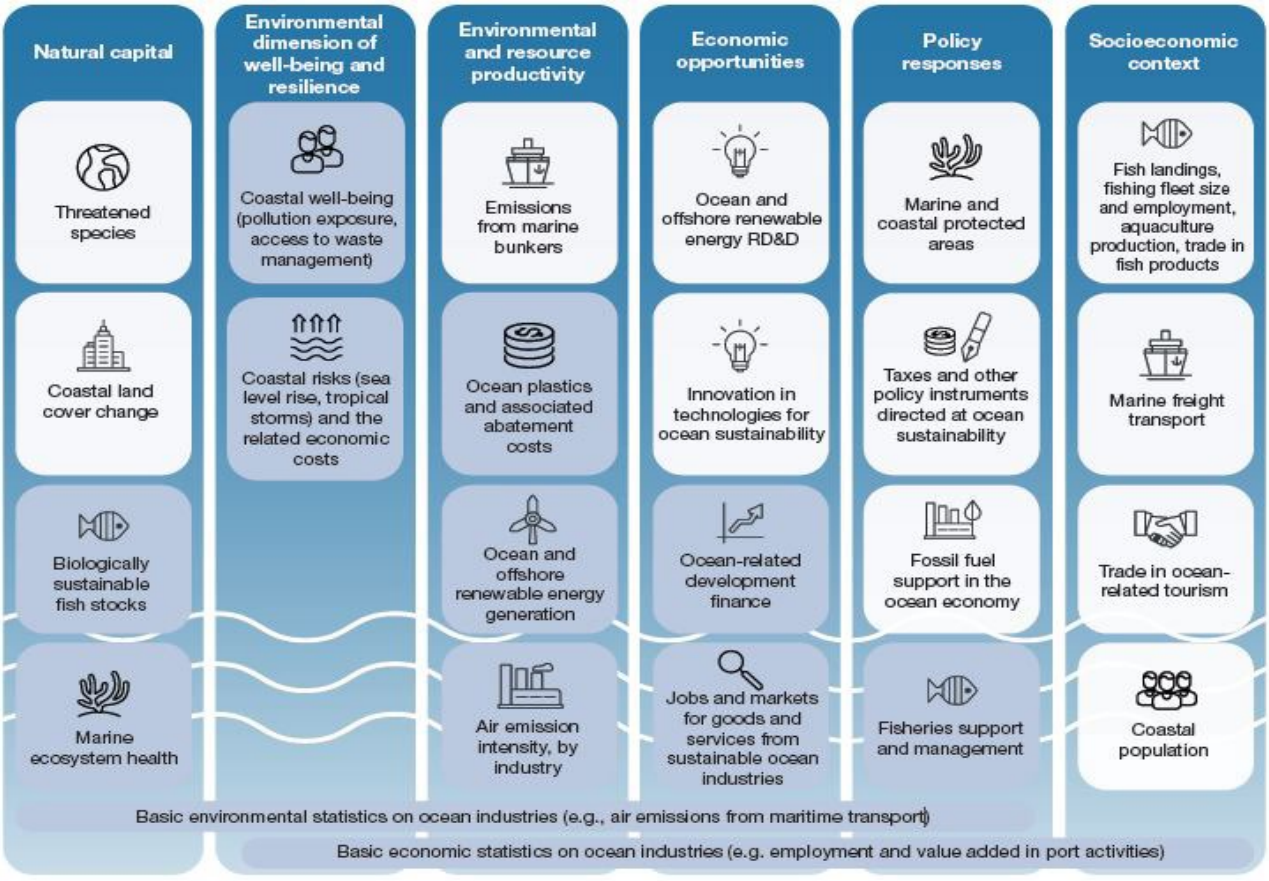
Figure 2: Impact pathway of marine plastic pollution – from pre-production to disposal



Source: Alpizar et al. (2020[9]).

11. **Integrating marine plastics-related data into relevant databases and environmental statistics systems can help to improve the data coverage and indicator development.** For instance, the OECD Sustainable Ocean Economy Database is an evolving database of ocean economy-related indicators that aims to serve as a comprehensive database for a sustainable ocean economy with initial coverage for OECD and G20 countries, and already with partial coverage for most SEA countries (See Figure 3). The OECD's PINE (Policy Instruments for the Environment) Database is also a key tool that gathers detailed information on policy instruments for natural resource management and environmental protection, with "Circular Economy" and "Ocean" featuring in the list of environmental domains. Work is underway at OECD and UNEP to develop Circular Economy indicators. COBSEA countries recently launched the web platform of the East Asian Seas Regional Node of the Global Partnership on Plastic Pollution and Marine Litter (GPML) to provide access to policies, technical resources, a map of good practices, and capacity building tools.

Figure 3: Indicators available on the OECD Sustainable Ocean Economy Database



Source: OECD (2022[10]).

Questions for Discussion:

- *What are the challenges in collection, analysis, and monitoring of data regarding marine plastic pollution in your country? What methods are used to collect data (more traditional, such as annual/quarterly administrative surveys) or more modern e.g. geospatial, drones, AI)? What are the data gaps in plastic waste / solid waste management, more generally?*
- *What are the respective roles for different government agencies in managing data on plastics/waste/marine pollution, and how is it coordinated across the government to ensure more effective policymaking? What*

actions have the National Statistics Offices/Ministries taken to get data gaps filled in?

- *What are the key steps to increase the quality, relevance and comprehensiveness of administrative data collection for the monitoring of plastic production, use, consumption and disposal? What steps are being taken and what is needed to harmonise monitoring and assessment approaches, to ensure data comparability at regional level, and to provide access to data for concerted action?*
- *What role can quality data and information on marine plastic pollution play in the context of the ongoing INC (Intergovernmental Negotiating Committee) to develop, implement, and track progress against an international legally binding instrument on plastic pollution?*
- *How can expansion of data and indicators support policymakers to move towards greater coherence, reliability of data, and assessment of progress, towards a circular, and sustainable ocean economy, and hence effectively manage plastic pollution in SEA?*

Issue 2: Policy Coherence

12. **A whole-of-government approach is needed for managing plastic pollution, and in particular marine plastic pollution. Policy planning and implementation need to be carried out in a coordinated and integrated manner across the different sectors and levels of the government.** Many SEA governments have put in place Action Plans and Roadmaps addressing marine plastic pollution or promoting circular economy, sustainable production and consumption, and more effective and efficient waste management, in addition to sectoral plans, e.g. tourism, urban and land use planning that include tackling marine plastic pollution as a component.

13. **The task of ensuring policy coherence requires clear political commitment, and proper co-ordination which still needs to be strengthened across governments in the SEA region.** A gap-analysis study commissioned by the EU and ASEAN in 2019 calls for governance for circular economy and plastics to be "more systematised and deliberate" in the ASEAN countries with the following broad categories of gaps that need filling (Akenji et al., 2019[11]):

- Clarity on mandates, roles and responsibilities at different levels of government
- Comprehensive frameworks with policy packages and instruments to turn national strategies and plans into action on the ground
- Effective approaches for governments to engage with diverse stakeholders.

14. **There is a need for policies to address the entire lifecycle of plastics, and a policy coherence framework could help in ensuring coherence along the different stages, which should be implemented in parallel.** In the context of marine plastic pollution in the SEA region, stages to be considered could be the following: 1) close leakage pathways; 2) enhance recycling; 3) promote circularity to reduce the scale of the problem; 4) clean-ups

15. **The OECD concept of policy coherence for sustainable development (PCSD) provides a framework to ground the thinking on how to integrate policy coherence into the policymaking process**. Its three main objectives are (OECD, 2018[12]):

- Foster synergies across economic, social and environmental policy areas
- Identify trade-offs and reconcile domestic policy objectives with internationally agreed objectives
- Address the negative spill-over of domestic policies

16. **There is a need to examine the degree to which various Actions Plans and Roadmaps (including sectoral ones) aim to fulfil the policy coherence objective**. In doing

so, focus could be put on how effective governance mechanisms may be put in place to support the implementation of the various country strategies with inherent links to one another, with a view to fostering synergies between them.

17. **There is a challenge of ensuring coherent implementation of Action Plans and Roadmaps across implementing agencies, as well as across different levels of government and key sectors**. This may be facilitated through the development of a dedicated framework for policy coherence on marine plastic pollution. It would be important for this framework to encompass not only the aforementioned factors, but also recognise the inherent links to promoting a circular economy on the one hand, and the sustainable ocean economy on the other.

18. **A vertical-horizontal coherence framework can serve as a useful tool for conceptualising co-ordination across different stakeholder groups**. Vertical coherence is ensured through close co-ordination between different levels of government—at the national, sub-national, municipal, and local levels—which can take the form of policies and actions as well as policy tools that build on each other consistently, with a view to contributing to the same overall objectives. Horizontal coherence requires a cross-sectoral collaboration with the various stakeholders—including for various ocean economy sectors—that are involved at different stages of the plastic lifecycle, i.e. production, consumption, and disposal / recycling, in addition to private sector, civil society and research collaboration that share the same purposes and goals. In effect, the framework may be used to better understand and conceptualise the economic, social, and environmental policy inter-linkages of government action.

19. **There is also a need to ensure coherence at the regional level by multilateral and bilateral donors that carry out projects tackling marine plastic pollution in the SEA region.** There is a wealth of initiatives and efforts in the region that could benefit from a more synergistic and co-ordinated approach. As the environmental and legal policy framework for marine plastic pollution is "highly complex" with many bodies (bilateral/multilateral donors, international organisations, international standards/mechanisms, etc.) working on the issue, it would be key to enhance policy coherence and co-ordination at all levels (OECD, 2020[13]).

Questions for Discussion:

- *What has worked well and less well in implementing regional and national policies, plans and roadmaps addressing marine plastic pollution at the local level? Please share your successes and challenges?*
- *How to promote policy coherence across different levels of government (national/regional/local), for a cross-sectoral challenge such as marine plastic pollution? How to ensure policy coherence of donor actions, including at the level of the SEA region?*
- *How to promote policy coherence across the whole lifecycle of plastics: from design, production and use to waste management and end-of-life?*

Issue 3: Financing

20. **The financial costs to marine ecosystems, fisheries and tourism from plastic pollution is substantial**–estimated at USD 13 billion annually, including the cost of clean-ups (UNEP, 2014[14])–hence it would be sensible for policies to take upstream measures to "turn off the tap" on plastic leakage. A broad range of financing options would be needed to adequately stem the leakage of plastics, including the use of economic instruments, taxes, leveraging development finance, as well as innovative financing schemes, e.g. plastic credits. Extended Producer Responsibility (EPR) schemes, which aim to make producers responsible for their products at the post-consumer stage of the product lifecycle, could also help to incentivise upstream interventions, such as eco-design of plastics.

21. **Sufficient financing needs to be mobilised, to stop plastic leakage at the source to build proper waste management infrastructure, to carry out the required clean-up action and, eventually, to promote sustainable production and consumption towards greater materials circularity**. For instance, the financial task force of the National Plastic Action Partnership of Indonesia indicated that USD 18 billion in capital investments are required between 2017 and 2040 and an additional annual increase of USD 1 billion must be mobilised for improved solid waste management by 2040 (OECD, 2020[13]).

22. **Efforts are being made to attract greater financing for ocean-related sectors**. The Sustainable Blue Economy Finance Principles, launched in 2018, represents the world's first global framework to finance a sustainable ocean economy (UNEP, 2022[15]). These voluntary principles—formed to guide sustainable ocean finance and investment practices—recognises the role financial institutions can play in supporting the development of a sustainable ocean economy (UNEP, 2021[16]).

23. **Despite these advances, scaling up finance to tackle marine plastic pollution continues to be a challenge**. According to OECD calculations based on scenarios that target a 100% waste collection rate and 100% of controlled recovery and disposal, capital costs to achieve those targets in OECD countries and 10 developing countries including three SEA countries (Indonesia, Philippines, and Thailand) would be EUR 54 billion (Moderate Ambition scenario), and EUR 74 billion (High Ambition scenario)[1] respectively (Table 1) (Soós, Whiteman and Gavgas, 2022[17])[2] To take the example of ODA, the total of amount of ODA provided to promote a sustainable ocean economy in developing countries was USD 3.02 billion (Figure 5), (OECD, 2021[18]).

Table 1: Total capital and total annualised costs of preventing plastic leakage into the ocean

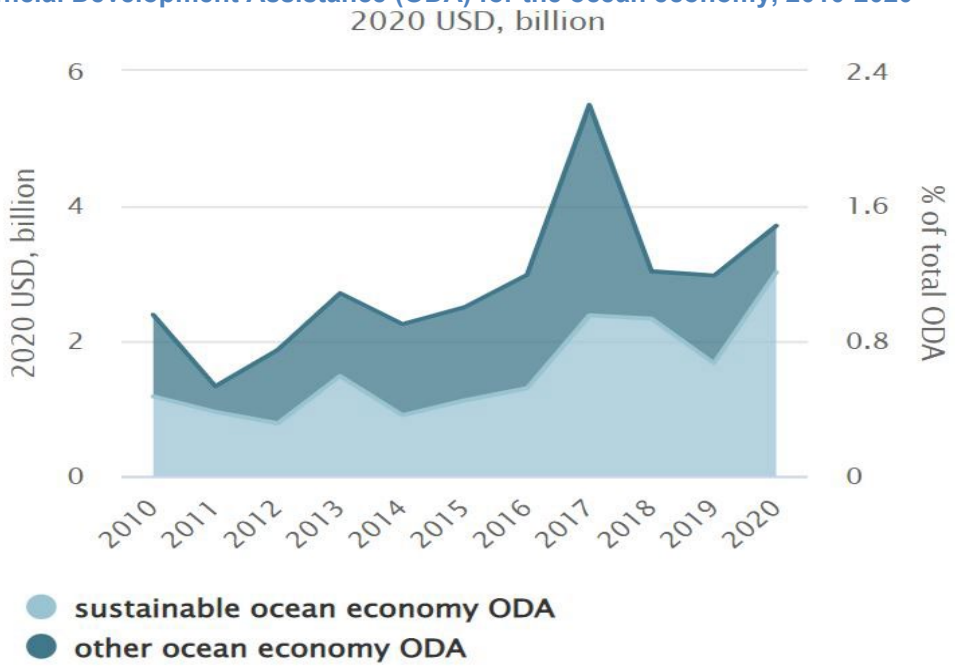
	Capital costs [EUR 1000]		Annualised costs [EUR 1000]	
	Scenario 1 Moderate Ambition	Scenario 2 High Ambition	Scenario 1 Moderate Ambition	Scenario 2 High Ambition
Innovative circular economy solutions	-	18 873 000	-	1 887 300
Mixed collection and transfer	13 669 000	7 527 000	9 131 000	4 898 400
Source separated collection and transfer	-	6 532 000	-	4 474 200
Sorting post source separation, clean MRF	-	4 730 000	-	1 291 200
Plastic re-processor facility of high-quality PP and PE	-	4 352 000	-	394 200
MBT for mixed waste and RDF production	-	11 365 000	-	1 657 200
Energy recovery	14 499 000	14 019 000	1 916 000	1 684 900
Landfill	25 808 000	6 779 000	6 411 000	1 671 900
TOTAL	**53 977 000**	**74 177 000**	**17 458 000**	**17 958 900**

Source: (Soós, Whiteman and Gavgas, 2022[17])

[1] Geographic coverage for this study include 38 OECD member countries, and 10 selected partner countries in Asia and Africa. The SEA countries included in this study are Indonesia, Philippines, and Thailand. For a detailed description of the methodology for each of these scenarios and the country groupings classified based on 1) stringency of their waste policy, and 2) level of existing waste management infrastructure, see the OECD Environment Working Paper, *The Cost of Preventing Ocean Plastic Pollution, https://dx.doi.org/10.1787/5c41963b-en*

[2] Revenue projections were not included in this analysis, but only the costs.

Figure 5: Official Development Assistance (ODA) for the ocean economy, 2010-2020



Source: (OECD, 2021[18])

24. **Major gaps also persist from the side of private finance**. Of all the private finance that was mobilised for the development of the ocean economy (which is a different category from a "sustainable ocean economy"), the amount totalled to USD 1.09 billion in 2020 (OECD, 2021[18]). Philanthropic contributions also make up a sizable contribution to overall ocean finance, but the amount remains insignificant to fill the gap, totalling to USD 221 million in 2020 (OECD, 2021[18]).

25. **It is important to identify and scale up successful initiatives, build a project pipeline for investments, and to create an enabling environment that encourages private sector participation through the entire plastics lifecycle.** A wealth of initiatives have already been identified and introduced in the previous Regional Ocean Policy Dialogue—such as community waste banks, public-private partnerships, blue bonds, and novel credit mechanisms, to name a few (OECD, 2020[13])—and it would be important for governments to play a role in creating a strong enabling environment for investors and consumers, hence incentivising desired outcomes.

Questions for discussion:

- *How can the financing tools (by both - public and private sector) be scaled to reduce plastic pollution at the national, and regional levels?*
- *What are the enabling conditions needed for mobilise public finance and investment flows to address marine plastic pollution, and to promote circularity of plastics management more broadly, in the SEA region?*
- *What are the persistent barriers to mobilise greater finance and investment, especially on the side of private finance, in tackling marine plastic pollution?*
- *What economic instruments are used at the municipal level (e.g., taxes, fees) to address marine plastic pollution? What are the key challenges for local-level actors / municipalities in terms of financing?*
- *What is being done to successfully develop and scale up innovative solutions to tackle plastic pollution on the ground? Please share good practices?*
- *What type of financing mechanisms are needed to effectively implement a global agreement to end plastic*

pollution?

- *What types of emerging and innovative instruments could be leveraged to ensure adequate and predictable funding to developing countries?*

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This Key Issues Note was prepared to inform the discussion around the theme of the 3rd Regional Ocean Policy Dialogue on Marine Plastic Pollution in Southeast Asia, organised by the OECD, the Coordinating Ministry of Maritime Affairs and Investment of Indonesia and the UNEP Coordinating Body on the Seas of East Asia (COBSEA).

For more information:

www.oecd.org/greengrowth/3rd-regional-ocean-policy-dialogue

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