INDICATOR FACT – SHEET
3. "Software" of waste management

Sub-indicators

MARINE LITTER & WASTE MANAGEMENT FRAMEWORK

IND 3.A.1 Is there a National Assessment for ML and its impacts?

IND 3.A.2 Is there a National Plan or Strategy for ML?

IND 3.A.3 Is there a National Plan or Strategy for Waste Management?

IND 3.A.4 Is there a National Law on Waste?

IND 3.A.5 Is there a national plan or target to close the dumpsites before 2030?

IND 3.A.6 Is there a National Information system for waste management in place?

RESOURCE RECOVERY

IND 3.B.1 Is there a National Plan or Strategy for Waste Prevention?

IND 3.B.2 Are there mandatory targets for recycling - recovery of packaging waste?

IND 3.B.3 Are there EPR or Deposit- Return schemes for packaging waste?

IND 3.B.4 Are there national policies to eliminate or reduce single-use plastics?

SUSTAINABLE CONSUMPTION AND PRODUCTION

IND 3.C.1 Are there Sustainable Consumption and Production plans or strategies?

IND 3.C.2 Are there green procurement rules for the public sector in place?

IND 3.C.3 Are there policies to support sustainable tourism?

IND 3.C.4 Are there policies to support eco-labelling and eco-design?

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Indicator Specification

H2020 Indicators	
Thematic area WASTE	**Date** **Author (s)**
Policy theme **Marine Litter and waste management interfaces**	

Indicator

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IND 3.B.1 Is there a National Plan or Strategy for Waste Prevention?

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IND 3.B.4 Are there national policies to eliminate or reduce single-use plastics?

IND 3.B.5 Are there financial incentives for reuse – resource recovery activities?

3.C SUSTAINABLE CONSUMPTION AND PRODUCTION

IND 3.C.1 Are there Sustainable Consumption and Production plans or strategies?

IND 3.C.2 Are there green procurement rules for the public sector in place?

IND 3.C.3 Are there policies to support sustainable tourism?

IND 3.C.4 Are there policies to support eco-labelling and eco-design?

Additional information

(if applicable)

The specification aims to measure the policy responses on a national level by answering "yes" or "no" to specific questions. Overall, it reflects the "software' of waste management and the readiness of countries to deal with ML.

Rationale

Performance indicators provide a good basis for assessing the existing situation, carrying out a comparison and tracking changes or progress made over time. For indicators to be useful as a tool for decision makers and politicians, they need to simplify the potential mass of data by being selective, by focusing on the important elements rather than trying to cover all aspects. By doing so, the information the indicators present will be relatively easy to use and understand.

Unfortunately, compiling high quality data on waste and waste treatment has long been a challenge. The available estimates are diverse, not verified or reliable, and often rather outdated. Thus, transforming waste data into reliable waste statistics has proven difficult. Definitely, this situation reflects to Marine Litter Statistics too, in one or another way. Some of the major areas of concern are:

- Lack of standard definitions and classifications
- Absence of measurement and of standard methodologies for measurement
- Lack of standard reporting systems

Interest in performance indicators for solid waste management is long-standing. Researchers have examined the bias issues in the then-standard set of three benchmark indicators: waste generated per capita; proportion of waste being managed by different methods; and proportion of households with a regular collection service. They found that although solid waste planning is a multi-disciplinary field requiring information about the physical, environmental, social, and economic implications of a system, the environmental indicators in use for solid waste do not adequately inform decision-makers about these attributes. Therefore, in many cases the indicators do not facilitate a holistic approach to environmental planning and policymaking.

A notable recent attempt to develop benchmark indicators and apply them to the comparison of cities both North and South was the report prepared for UN-Habitat on the state of solid waste management in the World's cities. The evolution of this tool is described in the recent UNEP – ISWA Global Waste Management Outlook and the set of Wasteaware Indicators.

According this tool, experience suggests that, for a system to be sustainable in the long term, consideration needs to be given to:

- All the physical elements (infrastructure) of the system.
- All the stakeholders (actors) involved.
- All the strategic aspects, including the political, health, institutional, social, economic, financial, environmental and technical facets.

The concept of Integrated Sustainable Waste Management (ISWM) which explicitly brings together all three dimensions, is gradually becoming the norm in discussion of solid waste management in developing countries. In this systematic description we can refer to the "software" and the "hardware" of waste management. The "software" refers to all the governance aspects (financial sustainability, social inclusion, institutional development). The "hardware" refers to all the relevant infrastructure (collection, recycling, treatment and disposal).

Justification for indicator selection

The indicator was constructed in a way to be relatively easily assessed and at the same time to include all the major aspects that are related with ML. More specifically, the indicator has three components. Each component has certain questions that are answered either by yes or no.

The first component deals with the marine litter and the waste management framework. Here, the aim is to identify a. if the countries understand ML as a priority that requires specific planning on a national level, and b. how mature and cohesive is the national waste management framework.

The second component deals with the resource recovery framework. The questions here aim to identify if the national framework in place supports waste prevention, resource recovery, and recycling, especially in plastics.

The third component deals with the Sustainable Consumption and Production policies. It aims to see the policy advances and the practices that are promoted mainly by the public sector

REFERENCES

- Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan {SEC (2008) 2110} {SEC (2008) 2111
- OECD, Extended Producer Responsibility: A Guidance Manual for Governments, 2001
- SWITCHMED, Regional Action Plan on Sustainable Consumption and Production in the Mediterranean, 2017
- UNEP, Sustainable Consumption and Production Global edition. A Handbook for Policymakers, 2015
- UNEP – ISWA, Global Waste Management Outlook, 2015, ISBN: 978-92-807-3479-9
- UN HABITAT, Solid Waste Management in the World's Cities, 2009
- Wasteaware' benchmark indicators for integrated sustainable waste management in cities, Waste Management, Volume 35, January 2015, Pages 329-342

Indicator definition

3.A MARINE LITTER & WASTE MANAGEMENT FRAMEWORK

IND 3.A.1 Is there a National Assessment for ML and its impacts?
IND 3.A.2 Is there a National Plan or Strategy for ML?
IND 3.A.3 Is there a National Plan or Strategy for Waste Management?
IND 3.A.4 Is there a National Law on Waste?
IND 3.A.5 Is there a specific plan or a specific target to close the dumpsites before 2030?
IND 3.A.6 Is there a National Information System for waste management in place?
All the questions are answered by yes or no.

Definitions required

IND 3.A.1 – IND 3.A.2: the answer "yes" is given either if the relevant documents are officially approved or if they are under elaboration and they are going to be completed before the end of 2019.

IND 3.A.3 – IND 3.A.4: the answer "yes" is given only if the relevant documents are officially approved.

IND 3.A.5: the answer "yes" is given only if there is such a specific target in the National Plan or Strategy or if there is a specific plan for the closure of dumpsites.

IND 3.A.6: the answer "yes" is given only if there is an existing, operational National Information System for waste management or if waste management consists a sub-system of a broader Environmental Information System.

Temporal Unit
Biannualy

Units
Each "yes" counts 6.66%

3.B RESOURCE RECOVERY

IND 3.B.1 Is there a National Plan or Strategy for Waste Prevention?
IND 3.B.2 Are there mandatory targets for recycling - recovery of packaging waste?
IND 3.B.3 Are there EPR or Deposit- Return schemes for packaging waste?
IND 3.B.4 Are there national policies to eliminate or reduce single-use plastics?
IND 3.B.5 Are there financial incentives for reuse – resource recovery activities?

Definitions required

IND 3.B.1: The answer "yes" is given only if there is a particular national plan or strategy for waste prevention that has been approved officially or if this is under elaboration and it is going to be completed before the end of 2019.

IND 3.B.2: The answer "yes" is given only if there specific quantified targets for recycling – recovery of packaging waste in the National Plan or Strategy or in a National Law or Regulation.

IND 3.B.3: The answer "yes" is given only if a national Extended Producer Responsibility (EPR) Scheme for packaging waste is in place or if there is a national Deposit-Return Scheme in place.

IND 3.B.4: The answer "yes" is given only if there are approved national policies or legislation – regulations for the reduction of single use plastics or any specific part of them (bags, straws, plastic cups etc.)

IND 3.B.5: The answer "yes" is given only if a. there are specific measures like VAT exemption or reduction or other types of financial support of the recycling-recovery activities b. there are financial measures to reduce landfilling like landfill or incineration taxes.

Recycling: it is defined as in IND 2.C

EPR Scheme: Extended Producer Responsibility (EPR) is a policy approach under which producers are given a significant responsibility – financial and/or physical – for the treatment or disposal of post-consumer products. Assigning such responsibility could in principle provide incentives to prevent wastes at the source, promote product design for the environment and support the achievement of public recycling and materials management goals.

Deposit- Return Scheme: Deposit-return schemes involve consumers paying a small extra fee every time they buy a particular type of product. They get the money back when they bring the empty packaging to a collection point. Similar systems for glass bottles have been in place for decades.

Temporal Unit
Biannualy

Units
Each "yes" counts 6.66%

3.C SUSTAINABLE CONSUMPTION AND PRODUCTION

IND 3.C.1 Are there national Sustainable Consumption and Production (SCP) plans or strategies?
IND 3.C.2 Are there national Green or Sustainable Procurement Rules for the public sector in place?
IND 3.C.3 Are there national policies to support Sustainable Tourism?
IND 3.C.4 Are there national policies to support Eco-labelling?

Definitions required

IND 3.C.1: The answer "yes" is given only if there is a particular national plan or strategy for SCP that has been approved officially or if this is under elaboration and it is going to be completed before the end of 2019.
IND 3.C.2: The answer "yes" is given only if there are official national – govermental guidelines for green or sustainable public procurement
IND 3.C.3: The answer "yes" is given only if there is a national plan or strategy that has been approved officially or if this is under elaboration and it is going to be completed before the end of 2019.
IND 3.C.4: The answer "yes" is given only if there is a national plan or strategy that has been approved officially or if this is under elaboration and it is going to be completed before the end of 2019.

Sustainable Consumption and Production (SCP)[1]: As defined by the Oslo Symposium in 1994, sustainable consumption and production (SCP) is about "the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations". Following UN and UNEP's suggestions many countries have developed national SCP plans.

Green Public Procurement (GPP)[2]: This means that public authorities seek to purchase goods, services and works with a reduced environmental impact throughout their life-cycle compared to goods, services and works with the same primary function which would otherwise be procured.

Sustainable Public Procurement (SPP)[3]: This is a process by which public authorities seek to achieve the appropriate balance between the three pillars of sustainable development - economic, social and environmental - when procuring goods, services or works at all stages of the project.

Sustainable Tourism[4]: it is defined by paragraph 130 of The Future We Want as a significant contributor "to the three dimensions of sustainable development" thanks to its close linkages to other sectors and its ability to create decent jobs and generate trade opportunities. Therefore, Member States recognize "the need to support sustainable tourism activities and relevant capacity-building that promote environmental awareness, conserve and protect the environment, respect wildlife, flora, biodiversity, ecosystems and cultural diversity, and improve the welfare and livelihoods of local communities".

Eco-label[5]: "Ecolabelling" is a voluntary method of environmental performance certification and labelling that is practised around the world. An ecolabel identifies products or services proven environmentally preferable overall, within a specific product or service category. There are different classifications and certification systems of labels.

Temporal Unit
Biannualy

Units
Each "yes" counts 6.66%

[1] https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1951&menu=35
[2] http://ec.europa.eu/environment/gpp/versus_en.htm
[3] https://www.unenvironment.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/asia-pacific-roadmap-2
[4] https://sustainabledevelopment.un.org/topics/sustainabletourism
[5] https://globalecolabelling.net/what-is-eco-labelling/

Policy Context and Targets

Marine litter (ML) is a challenge of planetary scale and implications. It is necessary to develop a more integrated perspective regarding ML. ML is not simply related to SWM and recycling, it is a result of a systemic failure, with the following four key-parameters:

(I) The continuous growth in use of thousands of different forms of plastics.

(II) Poor or absent solid waste management services and infrastructure (mainly in the Med South), and insufficient monitoring & law enforcement (mainly in the Med North).

(III) Problematic - vulnerable markets for secondary plastics.

(IV) Lack of a systemic and in-depth understanding of:

- The technical challenges and the restrictions of material properties and the flows of plastics.
- The effects of social consumption patterns and littering behaviours on solid waste generation.
- The impacts of unplanned tourist developments and of the fishing industry.

The plastic production & consumption, the lack of waste & recycling infrastructure and enforcement, (especially in coastal areas), the problematic markets for secondary materials and the touristic activities should be considered as Drivers of ML.

The Horizon 2020 Initiative, which aims to reduce the pollution of the Mediterranean Sea by 2020, recognizes the importance of waste as one of the three priority areas causing major pollution in the Mediterranean Sea. The UN Global Programme of Action for the Protection of the Marine Environment against Land-Based Activities and the Convention for the Protection of the Mediterranean Sea against Pollution have also identified waste management as a priority intervention.

The major target is to reduce plastic waste by shifting to circular economy, enabling re-design of materials and products, advancing reuse and recycling practices. The proposed indicators are directly related with the SDGs as follows:

GOALS	TARGET	INDICATORS
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.	% of urban solid waste regularly collected and with adequate final discharge with regards to the total waste generated by the city
Goal 12: Ensure sustainable consumption and production patterns	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.	Treatment of waste, generation of hazardous waste, hazardous waste management, by type of treatment
	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.	National recycling rate, tons of material recycled
Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development	14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Index of coastal eutrophication and floating plastic debris density

The UN has established the Global Partnership on Marine Litter, with the following Goals. Goal A: Reduced levels and impacts of land-based litter and solid waste introduced into the aquatic environment. Goal B: Reduced levels and impact of sea-based sources of marine debris including solid waste, lost cargo, ALDFG, and abandoned vessels introduced into the aquatic environment. Goal C: Reduced levels and impacts of (accumulated) marine debris on shorelines, aquatic habitats, and biodiversity. It is anticipated that different stakeholders will form sub-groups to focus on specific issues, e.g. cross-cutting issues.

The shift to Circular Economy is necessary for the substantial reduction and prevention of ML. The G20 have advocated for a global roadmap for action to address the life cycle of plastics and effectively valorize plastics in the economy whilst mitigating their environmental impacts. This roadmap includes:

1. Upstream measures
2. Consumption based measures
3. Worldwide engagement in awareness of impacts and the need for social change.
4. Measures to enhance and advance waste management - the required measures involve (indicatively):

- Separate waste collection: Emphasis should be placed on moving away from landfill and energy recovery towards re-use and recycling. Separate municipal waste collection is a key element within this infrastructure, to make recycling a convenient option for citizens to deal with their waste plastics. Re- use opportunities in the plastic packaging sector, ranging from reusable B2B crates to refillable bottles for beverages and cleaning products.
- Waste management infrastructure and services: Direct investment in waste infrastructure is needed in all countries to increase the rate of recovery and reduce the leakage of plastics. Although landfilling should be the least-preferred option, investment in sanitary landfills is still desirable in countries where informal and unprotected landfills are a major source of plastic pollution.
- Export of plastic waste: In general, plastic waste should not be exported for disposal or treatment in locations with significantly lower treatment standards than the country of origin. Countries which export waste for recycling should have responsibility to assess and take into account the impacts of that trade. An estimated 15 million tonnes of plastic is traded per year as waste destined for recycling.
- Infrastructure for maritime and fisheries marine litter: Whilst terrestrial sources are the most important, an estimated 0.5 to 5.9 million tonnes of plastics enters the oceans from sea-based sources every year. Appropriate waste infrastructure at ports can reduce this flow of waste.
- Deposit refunds and extended producer responsibility (EPR): Producers should be made responsible for their products after the point of sale. Deposit refund and EPR instruments, which support the uptake, quality and economics of recycling, thus reducing marine littering, should be implemented. EPR schemes also encourage producers to design their products to be suitable for take-back and recycling.
- Clean-up and collection: Given the size of the oceans and the scale of the marine litter problem, clean- up activities are costly, largely ineffective and create an unhelpful illusion that upstream measures are not necessary. Whilst upstream measures should be preferred, clean-up may be a suitable last resort for addressing marine litter in limited zones such as urban areas, tourist beaches and ports where the litter causes severe social and economic damage.

Related policy documents

- United Nations Environment Assembly of the United Nations Environment Programme, Resolution on Marine Litter and Microplastics, UNEP/EA.3/L.20, Third Session, 4-6 December 2017
- EU Marine Strategy Framework Directive (MSFD), 2008/56/EC
- A European Strategy for Plastics in a Circular Economy, COM (28) 2018, 16-1-2018
- EU, DG for Internal Policies, EU Action to Combat Marine Litter, IP/A/ENVI/2017-02, May 2017
- G20 Insights, T20 Task Force Circular Economy: Circular economy measures to keep plastics and their value in the economy, avoid waste and reduce marine litter, 2017
- UN Global Programme of Action for the Protection of the Marine Environment against Land-Based Activities

Methodology

The following remarks apply to all the questions

Calculations

Each “yes” counts for counts 6.66%. The ranking of each country is calculated multiplying the number of “yes” by 6.66%. If a country has positive answers to all the questions it will be ranked with 100%, which means that the country’s software reposnds in an integrated and complete way the ML challenge.

Geographical coverage

The answers consider the national level only, as the aim is to measure the policy response of the countries. If there are local initiatives they should be mentioned in the assessments, but they will not be part of the ranking process.

Temporal Coverage

It will be very useful if the indicator could be calculated for the last 5 years.

Data collection & availability

In general terms, the data required is easy to be found and the official approvals are easily accessed by the involved authorities.

Problems and gaps

There is a problem regarding the elaboration of on-going plans – in some of the questions the on-going efforts are ranked with “yes” if there is a deadline to be completed before 2019. There is a need to discuss more about it. In some cases, maybe there will be laws and not national plans, or pieces of regulation that cover the requested questions.

Uncertainties

The major uncertainty lies in the common understanding of the relevant terms as well as in identifying how they have been (and if) incorporated in the national policy-making and legislation frameworks.