



C1_REG-4

Support for WES-BCA PCs in the Mediterranean for the monitoring and reporting programs for marine litter prevention and mitigation

Background document on marine litter monitoring and reporting

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WATER ENVIRONMENT SUPPORT BIODIVERSITY AND CLIMATE IN THE NEIGHBOURHOOD SOUTH REGION

The regional EU funded “Water Environment Support-Biodiversity and Climate Action (WES-BCA)” project is the continuation of WES project and capitalises on the experience of three more successful predecessor regional EU funded projects SWIM-Horizon2020 SM, SWIM SM and Horizon 2020 CB/MEP. It supports the countries of the Southern Neighbourhood Region in addressing the improvement and protection of the environment, the restoration of biodiversity and the management of scarce water resources, while enhancing the resilience to climate change in the Mediterranean region, strengthening the formulation and enforcement of the relevant policies of the Partner Countries (PCs) and the two regional political frameworks, namely the Union for the Mediterranean (UfM) and the Barcelona Convention. WES-BCA will enhance the capacity of relevant stakeholders in order to support them in formulating and implementing policies in the aforementioned issues, raise awareness, increase knowledge and improve public understanding, stimulating behavioural changes needed for appropriate climate action and environmental protection.

WES-BCA has two components which will run hand-in-hand:

COMPONENT I (Water, Biodiversity and Environment) with the specific objectives:

- to promote an integrated approach to biodiversity protection/restoration and pollution reduction/prevention
- to manage more efficiently scarce water resources in the Southern Neighbourhood

COMPONENT II (Communication and Outreach) with the specific objective:

- to raise awareness and better understanding by the general public (and specific segments of the population) including youth and women are promoted stimulating adoption of appropriate behaviours and attitudes towards improved climate action and effective environmental protection.

DISCLAIMER:

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ABBREVIATIONS

ACT4LITTER	Action for Marine Litter in Mediterranean Protected Areas
CAP	Plastic Busters CAP project
CB/MEP	Capacity Building / Mediterranean Environment Programme (Horizon 2020)
CI	Common Indicator
CI22	Common Indicator 22 (Trends in the amount of litter washed ashore and/or deposited on coastlines)
CI23	Common Indicator 23 (Trends in the amount of litter in the water column, including microplastics, and on the seafloor)
CI24	Common Indicator 24 (Trends in the amount of litter ingested by or entangling marine organisms)
CSO	Civil Society Organisation
D10	Descriptor 10 (Marine Litter) of the Marine Strategy Framework Directive
EcAp	Ecosystem Approach
EcAp MED III	Implementation of the Ecosystem Approach in the Mediterranean – Phase III project
ENI	European Neighbourhood Instrument
EO	Ecological Objective
EO10	Ecological Objective 10 (Marine and coastal litter do not adversely affect the coastal and marine environment)
EU	European Union
GES	Good Environmental Status
H2020	Horizon 2020 Initiative for a Cleaner Mediterranean
H2020 CB/MEP	Horizon 2020 Capacity Building / Mediterranean Environment Programme
ICZM	Integrated Coastal Zone Management
IMAP	Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria
INFO/RAC	Information and Communication Regional Activity Centre
IOLR	Israel Oceanographic and Limnological Research Institute
MAP	Mediterranean Action Plan
MED	Mediterranean (region/sea)
MED POL	Programme for the Assessment and Control of Marine Pollution in the Mediterranean
MED QSR	Mediterranean Quality Status Report
MPA	Marine Protected Area
MPAs	Marine Protected Areas

MSFD	Marine Strategy Framework Directive
MTEDD	Ministère de la Transition Énergétique et du Développement Durable (Morocco)
NGO	Non-Governmental Organisation
NGOs	Non-Governmental Organisations
PCs	Partner Countries (Southern Neighbourhood countries participating in WES-BCA)
RPML	Regional Plan on Marine Litter Management in the Mediterranean
SWIM-SM	Sustainable Water Integrated Management Support Mechanism
SWIM-H2020 SM	Sustainable Water Integrated Management and Horizon 2020 Support Mechanism
TouMaLi	Tourism & Marine Litter project
UfM	Union for the Mediterranean
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP/MAP	United Nations Environment Programme / Mediterranean Action Plan
WES	Water and Environment Support project
WES-BCA	Water and Environment Support – Biodiversity and Climate Action

1. BACKGROUND INFORMATION ON MARINE LITTER

Marine litter - any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment - has been globally acknowledged as a major societal challenge of our times due to its significant environmental, economic, social, political and cultural implications. Marine litter negatively impacts coastal and marine ecosystems and the services they provide, ultimately affecting people's livelihoods and well-being (UNEP, 2021a).

It is widely accepted that the Mediterranean Sea is one of the most affected seas by marine litter and in particular marine plastic pollution worldwide. This issue threatens not only the region's iconic coastal landscapes but also its deep-sea ecosystems. Even in pristine environments of the Mediterranean, such as coastal and marine protected areas (MPA) and designated areas such as biosphere reserves, marine litter and plastic pollution is building up, threatening habitats and species and inhibiting sustainable development. Impacts vary from entanglement and ingestion to bioaccumulation and biomagnification of toxins in marine species released by marine litter, facilitation of introduction of invasive species and damages to benthic habitats, ultimately impacting human livelihoods and food security. Plastics are the most common type of marine litter; particularly single-use items are a dominant contributor, disrupting multiple economic sectors that depend on a healthy marine environment (UNEP, 2021a).

Tourism and fisheries, two pillars of the Mediterranean economy, are especially vulnerable. Plastic litter reduces the aesthetic and recreational value of beaches, leading to decreased tourist arrivals and income losses for local businesses. Marine litter also damages fishing gear and threatens commercial species, undermining the livelihoods of coastal communities. As microplastics infiltrate the food web, public health risks are also mounting (UNEP, 2021a).

The root causes of marine litter in the Mediterranean are the same as anywhere else in the world: a complex combination of unsustainable production and consumption patterns, weak solid waste management practices and misconceptions related to possible solutions, lack of adequate policy and legislative frameworks and poor implementation and enforcement of existing ones, ignorance and/or irresponsible behaviour of individuals and economic sectors, fragmented understanding of the problem due to the lack of fit-for-purpose data and inadequate monitoring and data collection (UNEP, 2021a).

Marine litter is commonly classified by size as follows:

- Macrolitter: items larger than 25 mm in their longest dimension (no fixed upper limit).
 - Mesolitter: items 5–25 mm in their longest dimension.
 - Microlitter: items smaller than 5 mm in their longest dimension (no fixed lower limit)
- (MSFD TSG ML, 2023; UNEP, 2015)

2. AIM AND SCOPE OF THE DOCUMENT

This document seeks to support Contracting Parties to the Barcelona Convention, with a focus on the WES-BCA partner countries in strengthening marine litter monitoring and reporting in line with the UN Environment Programme / Mediterranean Action Plan (UNEP/MAP) framework. It provides practical, implementation-oriented guidance for organising and delivering harmonised monitoring under the Ecosystem Approach (Ecological Objective 10 – Marine Litter), the Integrated Monitoring and Assessment Programme (IMAP) and the Regional Plan on Marine Litter Management in the Mediterranean (RPML), focusing on Common Indicator 22 (CI22), Common Indicator 23 (CI23) and Common Indicator 24 (CI24).

The document is designed to help countries overcome common institutional and technical bottlenecks (coordination, resources, access, quality assurance/quality control, data management, and reporting workflows) by proposing actionable recommendations, templates, and best-practice examples. It also supports strengthened Mediterranean-wide reporting by clarifying roles and information flows relevant to Information and Communication Regional Activity Centre (INFO/RAC) and its InfoMAP System.

This document, together with the findings of the linked questionnaires and insights from the Regional WES-BCA Webinar scheduled on 3 February 2026, will contribute to the Regional Assessment Report currently under preparation. The report will include country profiles, a regional synthesis, cross-cutting analyses, action-oriented recommendations, and a proposed project concept to support further implementation and capacity-building.

3. THE TARGET GROUP

This document is intended for a diverse target group, including:

- National focal points for marine litter and pollution prevention from Ministries of Environment and other relevant departments;
- National IMAP/Ecosystem Approach (EcAp) coordinators and reporting leads;
- Academia, research institutions, and technical laboratories (including those with microplastics analytical capacity);
- Field practitioners and operational services (e.g., coastal management bodies, coastal and marine protected areas staff, municipalities, contractors, port/coastal services, and where relevant fisheries/diver networks);
- Data managers and environmental statistics units/observatories responsible for data stewardship and reporting;
- Regional organisations and networks supporting implementation and reporting (e.g., UNEP/MAP components such as MED POL, and relevant Regional Activity Centres);
- Representatives of civil society organisations (CSO), non-governmental organisations (NGOs), women and youth networks, and citizen-science initiatives;

4. METHODOLOGY

This background document has been developed by focusing on a mixed-method approach that shall combine (i) **desk research**, and (ii) **structured stakeholder engagement** to identify gaps and propose practical, action-oriented recommendations for a harmonized marine litter monitoring and reporting implementation.

Desk research focused on:

- Existing UNEP/MAP decisions and guidance materials related to IMAP, RPML, and marine litter indicators, including available indicator factsheets and methodological guidance. The desk review is used to compile a practical implementation and reporting “minimum package” for CI22, CI23, and CI24.
- An overview of relevant projects and initiatives with a focus on marine litter (including H2020 CB/MEP, SWIM-SM, SWIM-H2020 SM, WES, Marine Litter MED I/II/PLUS, Plastic Busters, TouMaLi, etc.) in the WES-BCA countries, and the national implementation status for CI22, CI23 and CI24 in the eight WES-BCA partner countries. This provides the basis for the baseline overview and country profiles as well as for the selected good practice examples for marine litter monitoring and reporting included in this document.

Stakeholder engagement is used to capture more detailed information on implementation conditions and to identify bottlenecks, capacity-building needs, and practical solutions along the monitoring and reporting chain. Therefore, inputs are collected through:

- **Structured questionnaires tailored to different actors** (policy / reporting leads, CI22 monitoring implementers, CI23 / CI24 field and laboratory teams, and data managers / InfoMAP System users). The six questionnaires used for this purpose are provided in **Annexes A, B, C1, C2, C3, and D** and are designed to be completed in approximately 10–15 minutes each, using simple scoring to allow semi-quantitative comparison across countries and stakeholder groups.
- **Targeted bilateral exchanges (as needed)** to clarify technical and organisational issues that emerge from the questionnaires or the desk-based baseline (e.g. institutional roles, data flows, specific methodological questions).

5. POLICY FRAMEWORK

To protect the marine environment in the Mediterranean Sea Area, the Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention), was adopted on 16 February 1976 in Barcelona. The Contracting Parties committed to take all appropriate measures—individually or jointly—to prevent, reduce and combat pollution of the Mediterranean Sea Area and to protect and enhance its marine environment (UNEP/MAP, 1976). In 1995 the Barcelona Convention was amended and renamed as the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (UNEP/MAP, 1995).

Over the years, the contracting Parties adopted seven implementing Protocols to the Barcelona Convention addressing specific measures to tackle marine pollution (UNEP, 2019). In 2008, Contracting

Parties decided (Decision IG.17/6) to apply the Ecosystem Approach with the overall objective to achieve and maintain the Good Environmental Status (GES) of the Mediterranean Sea and coasts (UNEP/MAP, 2008).

Under the vision of "A healthy Mediterranean with marine and coastal ecosystems that are productive and biologically diverse for the benefit of present and future generations", Contracting Parties adopted (Decision IG.20/4) a list of 11 Ecological Objectives (EO), addressing key elements of the Mediterranean marine and coastal environment.

Marine litter is addressed under Ecological Objective 10 (EO10) ("Marine and coastal litter do not adversely affect coastal and marine environment"), and was further broken down into Operational objectives (COP 17 Decision IG.20/4), common indicators, (UNEP, 2009) as well as GES definitions and Proposed targets (COP 18 Decision IG.21/3).

To establish a coherent region-wide framework for the monitoring and assessment of the status of the marine and coastal environment, the Contracting Parties adopted in 2016 the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) (COP 19 Decision IG.22/7) (UNEP/MAP, 2016).

Marine litter monitoring of IMAP is further supported and operationalised through the Regional Plan on Marine Litter management (RPML) (Decision IG. 20/10, the MLRP). Within IMAP, marine litter Ecological Objective 10 (EO10) is primarily addressed through agreed common indicators (Decision IG.22/7):

Common Indicator

- Common Indicator 22 (trends in the amount of litter washed ashore and/or deposited on coastlines—i.e., beach/coastline macro-litter, including composition)
- Common Indicator 23 (trends in the amount of litter in the water column—including microplastics—and on the seafloor)
- Common Indicator 24 (trends in the amount of litter ingested by or entangling marine organisms focusing on selected mammals, marine birds, and marine turtles) (UNEP, 2016).

IMAP sets out the basis for how the Contracting Parties should design and carry out their national integrated monitoring programmes, it defines what is monitored and how it is assessed and reported in a harmonised way across countries. IMAP is further designed to align with European Union's (EU) Marine Strategy Framework Directive (MSFD) where feasible and useful, while remaining applicable to all Contracting Parties (EU and non-EU).

The MSFD is the EU policy for the protection of the marine environment. The MSFD requires European Member States to develop strategies and establish monitoring programmes to assess the state of marine waters and to achieve or maintain the Good Environmental Status (GES) in European seas (MSFD TSG ML, 2023). For descriptor 10 (D10) Marine Litter the goal is that: Properties and quantities of marine litter do not cause harm to the coastal and marine environment.

In practice, the UNEP/MAP IMAP EO10 indicators and the MSFD's Descriptor 10 criteria are highly comparable: both focus on coastline litter, litter at sea (surface/seabed, plus microlitter), and (optionally/where feasible) biological harm pathways like ingestion and entanglement (Table 1).

UNEP/MAP also explicitly frames Mediterranean marine litter work and monitoring as being developed in synergy with MSFD implementation, supporting harmonised approaches for EU and non-EU Mediterranean Contracting Parties (Marine Litter MED, 2020; UNEP, 2021b).

5.1. COMMON INDICATORS

The UNEP/MAP IMAP marine litter indicators under Ecological Objective 10 are intentionally designed to mirror the structure of the EU MSFD Descriptor 10. Table 1 summarises this crosswalk, showing how CI22, CI23 and CI24 correspond to the MSFD criteria for coastline litter, litter in the water column and on the seabed, and biota impacts (ingestion and entanglement). This alignment helps Mediterranean countries, especially EU Member States, to use a single set of monitoring activities to serve both IMAP and MSFD reporting needs.

TABLE 1 CROSSWALK OF UNEP/MAP IMAP MARINE LITTER INDICATORS (EO10) AND EU MSFD DESCRIPTOR 10 CRITERIA, SHOWING THE INTENDED ALIGNMENT OF WHAT IS MONITORED ACROSS COASTLINE, WATER COLUMN/SEABED, AND BIOTA.

Theme	UNEP/MAP (IMAP, EO10) indicator	EU MSFD (Descriptor 10) criterion/indicator
<i>Beach / coastline litter</i>	CI-22: Trends in the amount of litter washed ashore and/or deposited on coastlines (including analysis of its composition, spatial distribution and, where possible, source)	D10C1 – Primary: The composition, amount and spatial distribution of litter on the coastline, in the surface layer of the water column, and on the seabed, are at levels that do not cause harm to the coastal and marine environment. Member States shall establish threshold values for these levels through cooperation at Union level, taking into account regional or subregional specificities
<i>Litter at sea (water column + seafloor), incl. microplastics</i>	CI-23: Trends in the amount of litter in the water column including microplastics and on the seafloor	D10C2 – Primary: The composition, amount and spatial distribution of micro-litter on the coastline, in the surface layer of the water column, and in seabed sediment, are at levels that do not cause harm to the coastal and marine environment. Member States shall establish threshold values for these levels through cooperation at Union level, taking into account regional or subregional specificities.
<i>Impacts on biota (ingestion / entanglement)</i>	CI-24: Trends in the amount of litter ingested by or entangling marine organisms focusing on selected mammals, marine birds and marine turtles	D10C3 – Secondary: The amount of litter and micro-litter ingested by marine animals is at a level that does not adversely affect the health of the species concerned. Member States shall establish threshold values for these levels through regional or subregional cooperation. D10C4 – Secondary: The number of individuals of each species which are adversely affected due to litter, such as by entanglement, other types of injury or mortality, or health effects. Member States shall establish threshold values for the adverse effects of litter, through regional or subregional cooperation.

6. MINIMUM DELIVERABLES BY INDICATOR

This executive section summarises the minimum monitoring deliverables expected from Contracting Parties for marine litter under IMAP, focusing on the three Common Indicators (CI22, CI23, and CI24). Under Decision IG.22/7, IMAP provides the basis for how Contracting Parties design and implement national integrated monitoring programmes and produce common-indicator-based regional assessments (UNEP, 2016). A practical checklist of what to submit to INFO/RAC and the InfoMAP System is provided in the next subchapters. Contracting Parties should produce quality-assured datasets following harmonised regional approaches and templates, so they can be aggregated for regional assessments. IMAP explicitly foresees that, once national programmes are updated, Contracting Parties report quality assured data following a common regional monitoring reporting template. At Mediterranean level, these datasets feed periodic regional assessments and the Mediterranean Quality Status Report (MED QSR) cycle (produced on a six-year basis).

MINIMUM DELIVERABLES FOR IMAP MARINE LITTER INDICATORS (CI22, CI23, CI24)

This section proposes minimum deliverables for the three IMAP marine litter indicators relevant to WES-BCA: Common Indicator 22 (CI22), Common Indicator 23 (CI23), and Common Indicator 24 (CI24). The minimum deliverables are understood as a practical floor, not as best practice. They are derived from the IMAP EO10 guidance, Regional Plan on Marine Litter Management, EcAp MED III expectations (e.g. data-based 2023 MED QSR) and the current status of implementation in the WES-BCA partner countries. Countries are encouraged to go beyond these minima where capacity allows.

For each indicator, two elements are distinguished:

- a minimum monitoring package (what needs to be measured in the field/lab); and
- a minimum reporting package (what needs to be submitted to INFO/RAC via the IMAP Info System).

6.2. COMMON INDICATOR 22 – BEACH / COASTLINE LITTER

Definition (IMAP CI22)

“Trends in the amount of litter washed ashore and/or deposited on coastlines (including analysis of its composition, spatial distribution and, where possible, source).”

6.2.1. MINIMUM MONITORING PACKAGE (CI22)

At minimum, each Contracting Party should:

Designate a core set of beaches for long-term monitoring

- A small, representative network of beaches (e.g. 3–6 per country), covering main coastline types:
 - urban/near-urban;
 - tourist/recreational;
 - rural/natural or less-accessible segments.
 - sites should be fixed over time (same georeferenced sections, same length).

Apply the standardised survey protocol

- Use harmonised beach litter survey methods (e.g. fixed-length transects or sections, minimum 100 m of shoreline) with a clearly defined size threshold for macro-litter.
- Record all visible anthropogenic litter items in the transect, categorised using the EU MFSD J-list of litter.
- At minimum, surveys should be carried out twice per year at each core site; seasonal surveys (4 times per year) are strongly recommended where feasible to capture temporal variability.

Ensure basic QA/QC and metadata collection

- Use standardised field forms and clear instructions to field teams.
- Record essential metadata: date, time, site ID, GPS coordinates, length surveyed, number of surveyors, weather conditions, presence of unusual events (e.g. storms, clean-ups just before the survey).
- Apply simple quality checks (e.g. double-counting for training, cross-check of data entry, clear rules for ambiguous items).

6.2.2. MINIMUM REPORTING PACKAGE (CI22)

For each survey and site, the minimum information to be reported to INFO/RAC (IMAP module M1 – Beach litter) should include:

- Site identification: unique beach ID, name, country, coordinates, length of monitored section, classification (urban/tourist/rural/other).
- Sampling event information: date, season, number of surveyors, survey method (e.g. 100 m transect, full-beach survey), notes on unusual conditions (storms, clean-ups).
- Litter data:
 - total number of items recorded;
 - number of items per litter category and, where possible, per detailed item type;
 - a normalised metric (e.g. items per 100 m, or items per m) for trend analysis
- Basic QA/QC flags: indication if data are complete, any major deviations from protocol, and whether the dataset has passed national QA checks.

6.3. COMMON INDICATOR 23 – LITTER IN THE WATER COLUMN AND ON THE SEAFLOOR (INCLUDING MICROPLASTICS)

Definition (IMAP CI23)

“Trends in the amount of litter in the water column, including microplastics, and on the seafloor.”

Given the greater logistical and technical complexity of CI23, the minimum deliverables are formulated in a phased and flexible way. Countries may initially focus on one main compartment (e.g. seafloor macro-litter) and progressively expand to others (e.g. floating microplastics) as capacity increases.

6.3.1. MINIMUM MONITORING PACKAGE (CI23)

At minimum, each Contracting Party should aim to have at least one operational CI23 component, with repeat measurements over time, in one or more of the following forms:

Seafloor macro-litter (preferred starting point)

- Integrate litter recording into existing bottom-trawl fish surveys, scientific trawl surveys, or other standardised seafloor-sampling campaigns.
- For each haul or transect: record all anthropogenic litter retained in the net or observed on imagery (if using video/ROVs), categorised by standard item types.
- Ensure that trawl/haul area (or length × width) is recorded, so that a density metric (e.g. items/km², items/km) can be calculated.
- Repeat surveys on a multi-annual basis (e.g. every 1–3 years per area) to support trend assessment.

Floating macrolitter and/or floating microplastics

- Where feasible, complement seafloor data with floating litter surveys (visual transects from vessels) and/or microplastics sampling using neuston or manta nets.
- For macrolitter: record numbers of items per category along defined transects with known length/width; derive densities (e.g. items/km², items/km).
- For microplastics: collect samples with known filtered volume or surface, analyse particle number, size class and (where possible) polymer type in a laboratory with adequate contamination control.

Basic QA/QC and metadata

- For all CI23 components, record essential metadata: sampling platform (vessel/divers), gear type, mesh size, tow speed, duration, depth range, surveyed area/volume, sea state and visibility.
- Apply basic contamination control for microplastics (clean clothing, blanks/controls where possible, covered samples).

6.3.2. MINIMUM REPORTING PACKAGE (CI23)

For each CI23 survey/sampling event, the minimum information to be reported to INFO/RAC (IMAP modules M2 – Seafloor litter, M3 – Floating microplastics) should include:

Station/transect identification:

- station ID, coordinates, depth, date, habitat/area description.

Sampling method description:

- gear type (trawl, net, visual survey, diver survey), sampling design (e.g. trawl distance/area, tow duration, strip width), key parameters (mesh size, depth).

Litter data – seafloor / floating macro-litter:

- total number of items;
- number of items per category and, where possible, per detailed item type;
- normalised metrics (e.g. items/km², items/km).

Litter data – floating microplastics (where applicable):

- number of particles per sample and per size class;
- normalised metrics (e.g. particles/m³, particles/km²);
- basic polymer information where available.

QA/QC flags:

- indication of any major deviations (e.g. incomplete haul, gear failure, strong contamination risk) and whether the dataset has passed national QA checks before upload.

6.4. COMMON INDICATOR 24 – IMPACTS OF LITTER ON MARINE ORGANISMS (INGESTION AND ENTANGLEMENT)

Definition CI24)

“Trends in the amount of litter ingested by or entangling marine organisms, focusing on selected mammals, marine birds and marine turtles.”

CI24 is methodologically more demanding and is currently less widely implemented than CI22 and CI23. The minimum deliverables therefore focus on pilot implementation in those countries and settings where enabling conditions exist (e.g. active stranding/rescue networks, necropsy capacity, or long-term monitoring of key species such as sea turtles).

6.4.1. MINIMUM MONITORING PACKAGE (CI24)

At minimum, countries that have the necessary capacity should:

Select at least one focal species and pathway

- Prioritise species where there is a realistic opportunity to collect samples (e.g. stranded or by-caught loggerhead sea turtles), and/or seabirds or marine mammals where necropsies are already carried out.
- Agree on whether the primary focus is ingestion (e.g. gastrointestinal content analysis) and/or entanglement (documentation of external injuries, gear entanglement).

Apply harmonised necropsy and recording protocols

- Implement an agreed protocol for necropsies and sampling (e.g. standardised procedures for opening and examining the digestive tract, sieving contents, classifying litter items by type, size and material).
- For entanglement, record type of gear or litter item, body region affected, and severity of injury or mortality.
- Aim for a minimum sample size per year (e.g. a small but consistent number of examined individuals in key areas), recognising that numbers may be limited and opportunistic.

Document effort and context

- Record how animals were obtained (stranding, by-catch, rescue centre mortality), location and date, body condition, size/age class, and any confounding factors (e.g. other causes of death).
- Ensure cooperation between biodiversity networks (e.g. turtle rescue centres, stranding networks) and pollution/IMAP focal points so that data are usable for EO10.

6.4.2. MINIMUM REPORTING PACKAGE (CI24)

For each examined individual (or aggregated group) reported to INFO/RAC (IMAP module MLT1 – Turtle ingestion/entanglement), the minimum information should include:

Animal and sampling information:

- species, date, location (coordinates), source (stranding, by-catch, rescue), body length/weight, sex (if known), condition (fresh, decomposed).

Ingestion data (where applicable):

- presence/absence of ingested litter;
- number of items per category (e.g. soft/hard plastics, metals, other) and, where possible, per item type;
- simple metrics (e.g. presence of macro-litter vs micro-litter, estimated mass or volume where feasible).

Entanglement data (where applicable):

- presence/absence of entanglement;
- type of gear/litter and body part affected;
- severity of impact (e.g. minor injury, severe injury, mortality clearly linked to entanglement).

Effort and QA/QC:

- number of individuals examined in total per year/area;
- information on necropsy protocol used;
- any limitations (e.g. partial examination only).

7. SELECTED GOOD PRACTICE EXAMPLES FOR MARINE LITTER MONITORING AND REPORTING

This section provides concise good practice examples from the Mediterranean that illustrate how marine litter monitoring and reporting under IMAP Ecological Objective 10 (EO10) can be organised in practice. They are not prescriptive, but show approaches that other countries – including the WES-BCA partner countries – can adapt and scale according to their own institutional and technical context.

7.1. CI22 BEACH LITTER MONITORING DEFISHGEAR ADRIATIC–IONIAN REGION (2013–2017)

Context and objectives

The IPA-Adriatic DeFishGear project (2013–2017) can be considered a pioneer in marine litter monitoring harmonisation. It developed and piloted a harmonised beach litter monitoring framework across all Adriatic–Ionian countries (Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro and Slovenia). The objectives were to develop and implement a common CI22 protocol based on MSFD TG Litter guidance, , and to provide a regional assessment supporting MSFD D10 and UNEP/MAP IMAP EO10 implementation.

Monitoring design (aligned with IMAP CI22 / MSFD TG Litter)

- Site selection: 31 beaches representing different pressures and settings (urban, tourism, river mouths, industrial areas, remote shores).
- Sampling unit: a) Initially, two 100 m × 10 m transects (replicates) were surveyed from the strandline landwards in each survey site. b) Halfway through the pilot surveys, it was decided

to expand the sampling unit width all the way back to the end of the beach, in line with the MSFD TG10 guidelines.

- The sampling unit was permanently geo-referenced and revisited in each campaign.
- Four surveys (one per season) were performed at each beach capturing seasonal variability as litter density fluctuates throughout the year.
- Protocol: strict application of MSFD TG Litter beach litter guidance with minor adaptations (in the first half year; 100 m x 10 m); all items >2.5 cm were counted and classified using the then common and recommended MSFD TG10 'Master List of Categories of Litter Items'.

Data processing, QA/QC and indicators

Litter density was calculated as items per 100 m and per m², and analysed by material, item category, and source-related groupings (e.g. shoreline and recreational, fishing and aquaculture, shipping, agriculture, etc.). Since it was early in the implementation phase of the first marine litter monitoring actions, a clear QA/QC framework was implemented, including shared SOPs, common data sheets and databases, training sessions for field teams and centralised data validation. The resulting datasets (after expanding the sampling unit width all the way back to the end of the beach) are directly suitable for use as CI22 under IMAP and as D10C1 under the MSFD and they were submitted to MEDPOL and MSFD TG and used

Governance and roles

The project brought together a consortium of several research institutes, environmental authorities, and environmental NGOs, with regional coordination by experienced partners. This approach ensured acceptance across administrations and helped to integrate the methods into national monitoring programs.

Key lessons for WES-BCA countries

- A simple, well-documented protocol (100 m stretch sampling unit, >2.5 cm items, standard item list) can be applied consistently across many institutions and countries.
- Investment in common SOPs, training and central QA/QC is essential to ensure comparability and reliability.
- The DeFishGear model provided a blueprint for Mediterranean countries that wish to set up CI22 in a way that is fully compatible with EU MSFD practice and IMAP EO10.

7.2. CI22 BEACH LITTER MONITORING ALGERIA & SWIM-H2020 SM BASELINE (2016–2019)

Context and objectives

Within the SWIM and Horizon 2020 Support Mechanism, Algeria implemented a comprehensive baseline survey of beach macrolitter along its Mediterranean coast. The objectives were to generate robust IMAP/MSFD-compatible data on macrolitter (>2.5 cm) on 17 representative beaches, to assess status against the thresholds for Good Environmental Status (GES), and to identify priority items and sources to support a future national CI22 monitoring programme and targeted measures.

Monitoring design (aligned with IMAP CI22 / MSFD D10C1)

- Geographical scope: a set of beaches across several coastal wilayas (provinces), covering urban, peri-urban and more remote/natural sites along a large stretch of coastline.
- Sampling unit: fixed 100 m beach sections, from the waterline to the back of the beach, with GPS-referenced start and end points so the same units/stretch can be revisited.
- Four surveys (one per season) were performed at each beach capturing seasonal litter density variation.
- Items recorded: all anthropogenic macrolitter items larger than approximately 2.5 cm in their longest dimension, classified using the Joint List of Marine Litter Items, ensuring full compatibility with IMAP CI22 and MSFD D10C1.

Data processing, indicators, and thresholds

Litter density was calculated as items per 100 m of coastline, with breakdowns by material type and by use/source categories (e.g. single-use plastics, smoking-related, fishing-related). Results were compared to the EU threshold of 20 items/100 m and the Mediterranean regional threshold of 130 items/100 m. Further, cluster analyses were performed.

Governance and roles

Fieldwork was conducted by the Directorate of Environment and National Waste Agency of the various wilayas (provinces) under the supervision of the Ministry of Water Resources and Environment of Algeria supported by SWIM-H2020 experts.

Key lessons for WES-BCA countries

- A well-designed one-year dataset, fully aligned with IMAP/MSFD protocols was produced, this can directly be used to structure a long-term CI22 monitoring network to feed future IMAP EO10 reporting. This dataset was in fact submitted to MEDPOL.
- Using the Joint List of Marine Litter Items and GES thresholds from the outset ensures harmonised data collection, prevents the need for subsequent data reprocessing and enables direct use in regional assessments.
- Early identification of top items and main sources helps link monitoring to measures and directly contributed to the national implementation of the Regional Plan for Marine Litter Management in the Mediterranean.

7.3. CI22 BEACH LITTER MONITORING PARTICIPATORY SCIENCE & COMMUNITY-BASED MONITORING (2018–2023)

Context and objectives

This best practice highlights how NGOs and local communities can generate CI22 fit-for-purpose beach-litter data when they work with officially adopted protocols. Two complementary experiences are combined: a multi-country NGO-led participatory science campaign in several Mediterranean EU countries, and a community-based initiative in the Asterousia Biosphere Reserve (south Crete).

Monitoring design (aligned with IMAP CI22 / MSFD TG Litter)

- Beaches were selected along gradients of human pressure (urban vs. remote, proximity to ports and river mouths, tourism intensity), including semi-rural, and remote/natural sites in several Mediterranean countries and the Asterousia Biosphere Reserve.
- Sampling unit: fixed 100 m beach sections, from the waterline to the back of the beach, with GPS-referenced start and end points so the same units/stretch can be revisited.
- Repeated surveys were organised (e.g. two seasonal surveys per year in the participatory science campaign; winter and spring surveys in Asterousia) to capture basic seasonal litter density variation.
- All anthropogenic macro-litter items >2.5 cm were recorded using harmonised CI22 data sheets derived from MSFD TG Litter guidance. The MSFD TG Litter Masterlist and its update Joint List of macrolitter items were used, with short training sessions for volunteers and local partners.

Data processing, QA/QC and indicators

Litter density was calculated as items per 100 m of coastline (and, where applicable, items per m²), and composition was broken down by material and by use/source categories (e.g. single-use plastics, fishing-related, smoking-related). Simple QA/QC procedures included standardised instructions, on-site supervision by experienced coordinators and basic checks of field forms before data entry. The resulting datasets can be used as CI22 inputs and compared with regional GES thresholds.

Governance and roles

The multi-country participatory campaign was coordinated by a network of Mediterranean NGOs and supported by grassroot or national organisations providing technical guidance, training and common tools. In Asterousia, the initiative was embedded in the governance of the biosphere reserve and jointly implemented by the reserve's management body, local schools, community groups and technical experts. This combination of regional coordination and strong local ownership ensured both methodological consistency and high participation.

Key lessons for WES-BCA countries

- The officially adopted CI22 IMAP or MSFD TG Litter protocol (100 m units, >2.5 cm items, standard item list) can be reliably implemented by NGOs and community groups after targeted training.
- Participatory and community-based monitoring can significantly extend spatial coverage and provide policy-relevant data in contexts where institutional monitoring capacity is limited.
- Linking monitoring with awareness and education (e.g. in schools, biosphere reserves) helps translate CI22 results into concrete local actions and long-term behavioural change.

7.4. BEST PRACTICE – CI23 FLOATING LITTER (MACRO AND MICRO) DEFISHGEAR FLOATING PLASTICS IN ADRIATIC WATERS (2013–2017)

Context and objectives

Within the DeFishGear project (2013–2017), a coordinated survey of floating plastics was carried out in the Adriatic Sea, covering gulfs, river outlets and offshore waters in five countries (Italy, Slovenia, Croatia, Montenegro, Greece). The objective was to quantify the abundance, size distribution and polymer composition of floating macroplastics (2.5–100 cm) and microplastics (330 µm–5 mm) using harmonised MSFD TG Litter methods, and to provide a regional reference for CI23 (trends in the amount of litter in the water column, including microplastics).

Monitoring design

- Study areas included populated gulfs (e.g. Venice, Trieste, Split, Kotor, Corfu), coastal channel waters and river outlets, from roughly 100 m to 35 km offshore.
- Each area was visited two to three times over 2014–2015 (autumn–winter and spring–summer campaigns) to capture seasonal variability.
- Floating macrolitter (>2.5 cm) was recorded by visual ship-based surveys following MSFD TG10 guidance, using small vessels (observation height <3.2 m) along pre-defined transects.
- In parallel, manta-net tows were carried out to sample floating microplastics (330 µm–5 mm) using standard MSFD-compatible procedures, with recorded tow length and filtered surface area.

Data processing, QA/QC and indicators

Densities were calculated as items per km² for both macro- and microplastic fractions. Indicators included total abundances and size-class distributions for macroplastics, as well as abundances and polymer types for microplastics. Quality control measures were applied at all stages of the project, including research activities, data collection, recording and digitization, and checking.

Governance and roles

The surveys were implemented by national research institutes and NGOs in each participating country, coordinated by the DeFishGear project team. A common technical specification based on MSFD TG Litter guidance ensured that all partners applied the same definitions, size classes and item categories, and a central group compiled and analysed the data at regional scale.

Key lessons for WES-BCA countries

- Combining visual surveys for macroplastics with manta-net sampling for microplastics provides a coherent picture of floating litter across size classes.
- MSFD TG10-based protocols can be applied from small vessels, allowing countries to start CI23 water-column monitoring with relatively simple means.
- Nearshore–offshore gradients and polymer identification help link monitoring results with land-based sources, wastewater discharges and riverine inputs.
- Early harmonisation of methods and item lists makes it easier to use national data in regional CI23 assessments and threshold-setting processes.

7.5. CI23 SEAFLOOR LITTER DEFISHGEAR ADRIATIC–IONIAN MACROREGION (2013–2017)

Context and objectives

The DeFishGear project (2013–2017) delivered the first harmonised assessment of seafloor macrolitter in the Adriatic–Ionian macroregion, combining bottom-trawl and underwater visual surveys in six countries. The aim was to generate comparable CI23 data (trends in the amount of litter in the water column and on the seafloor) to support EU MSFD Descriptor 10 and UNEP/MAP IMAP EO10 implementation, and to test how existing fisheries surveys and diver-based methods can be used for regular seafloor-litter monitoring.

Monitoring design

- Twenty-one locations (10 areas for visual surveys and 11 areas for trawl surveys) across the Adriatic and Ionian Seas were selected to represent different pressures (urban centres, ports, river mouths, shipping lanes) and environmental settings (depth, sediment type, currents).
- In shallow waters (<20 m), scuba/snorkelling visual surveys were carried out along georeferenced transects, typically 100 m long with a defined transect width.
- At greater depths, bottom-trawl surveys following an adapted MEDITS-like protocol were used, with standardised tow duration and speed to estimate swept area.
- All anthropogenic macrolitter items >2.5 cm were recorded and classified according to MSFD TG Litter / DeFishGear item lists to ensure compatibility with CI23 requirements.

Data processing, QA/QC and indicators

Litter densities were expressed as items/km² and kg/km². Indicators covered total abundance, composition by material and by use/source categories (e.g. fishing-related, shipping, shoreline/recreational). Protocols were built on MSFD TG Litter guidance and the MEDITS manual, with common data sheets, metadata fields and joint training to ensure consistent application across the region.

Governance and roles

National research institutes and fisheries science bodies implemented the surveys as part of DeFishGear, under the coordination of the regional project team. Existing stock-assessment surveys were adapted to collect seafloor-litter data alongside fish data, while divers carried out targeted transects in shallow coastal areas. Centralised data handling and analysis produced a regional picture of seafloor litter for use in MSFD and IMAP processes.

Key lessons for WES-BCA countries

- Existing bottom-trawl surveys for fisheries can, with minor adaptations, be used to collect CI23 seafloor-litter data at relatively low additional cost.
- In shallow (<20 m) waters and sensitive habitats, diver-based visual surveys offer a complementary, non-intrusive method that follows the same classification logic.
- Using the same size thresholds and item lists across trawl and diver-based surveys allows data from different depths and habitats to be combined in a single CI23 indicator.
- Harmonised seafloor-litter data support both national priority-setting (identifying hotspots) and regional GES assessments under IMAP and the MSFD.

7.6. CI23 FLOATING AND SEAFLOOR LITTER WES PILOT SURVEYS IN MOROCCO (2019–2023)

Context and objectives

Under the EU-funded Water and Environment Support (WES) project (2019–2023), Morocco implemented coordinated pilot surveys of floating and seafloor macrolitter in its Mediterranean waters. The main objectives were to generate fit-for-purpose CI23 data on litter in the water column (sea-surface macro-litter) and on the seafloor, to compare results with regional studies, and to inform priority measures under the UNEP/MAP Regional Plan on Marine Litter and IMAP.

Monitoring design

- Study areas included the bays of Tamuda, M'diq and Martil and adjacent coastal waters subject to tourism and urban pressures.
- Floating litter was monitored through ship-based visual surveys of items ≥ 2.5 cm, following MSFD TG10 guidance and using MSFD/Joint List item categories.
- Seafloor macrolitter was assessed through diver-based visual surveys along fixed transects (typically 100 m by a defined width) at shallow depths, with all items > 2.5 cm recorded and, where feasible, collected for onshore sorting.
- Standardised field forms and metadata (date, position, sea state, depth, recent weather) were used in both components to ensure alignment with IMAP CI23 requirements.

Data processing, QA/QC and indicators

Floating-litter densities were calculated as items per km^2 , while seafloor-litter densities were expressed as items km^2 and items per 100 m^2 . Composition was analysed by material and by use/source categories (e.g. single-use plastics, packaging, fishing-related gear). Basic QA/QC included training of field teams, standardised protocols and consistency checks of the compiled datasets.

Governance and roles

The pilot surveys were implemented by Moroccan technical institutions and experts under the coordination of the WES project and in close collaboration with national authorities responsible for marine environment protection. Regional experts provided methodological support and ensured alignment with MSFD and IMAP guidance. The results were summarised in a dedicated assessment report and shared with stakeholders to support national decision-making.

Key lessons for WES-BCA countries

- Short, well-designed CI23 pilots can provide valuable baseline information in countries where no previous data exist.
- Applying MSFD/IMAP-compatible size thresholds and item lists from the start ensures that pilot data can be directly used in regional assessments and threshold discussions.
- Combining surface and seafloor surveys helps link visible floating litter to what accumulates on the seabed, supporting a more complete understanding of sources and pathways.
- Diver-based seafloor surveys are particularly useful in shallow tourist bays and nearshore hotspots, which may not be covered by trawl-based monitoring.

7.7. CI24-TYPE BIOTA INGESTION MONITORING DEFISHGEAR FISH INGESTION STUDY (2013–2017)

Context and objectives

Within the DeFishGear project (2013–2017), partners in Italy, Montenegro and Greece carried out a coordinated pilot study on litter ingestion by commercial fish species in the Adriatic–Ionian region. The objective was to test a common protocol for analysing macro-litter in fish gastrointestinal tracts, generate baseline data on ingestion rates and composition, and demonstrate how biota-based indicators can support MSFD Descriptor 10 and CI24 under IMAP (trends in the amount of litter ingested by marine organisms).

Monitoring design

- Fish were collected from experimental and commercial hauls in three subareas: the North Adriatic (Gulf of Venice), the South Adriatic and the NE Ionian Sea around Corfu.
- In total 81 hauls were conducted, covering depths from roughly 10 to nearly 300 m, with some sampling in at least two seasons (e.g. autumn and spring–summer).
- The study documented the presence of marine litter in gut contents of three demersal fish species (*C. linguatula*, *M. barbatus* and *S. solea*), two mesopelagic (*P. erythrinus*, *T. trachurus*) and two pelagic (*S. pilchardus* and *S. japonicus*) from the Adriatic and Ionian Seas.
- A harmonised DeFishGear laboratory protocol was applied for all specimens, including standardised steps for dissection, gut removal and storage prior to analysis.

Data processing, QA/QC and indicators

For each fish, basic biological parameters were recorded, stomach and intestines were removed and examined under a stereomicroscope. All anthropogenic items visible under the microscope (approximately >1 mm) were counted, measured and weighed. Items were classified using MSFD Master List categories (e.g. plastic sheets, filaments, films, granules, foamed plastics, fragments). Indicators included frequency of occurrence (%F – percentage of non-empty guts containing litter), average number of items per gut and the relative contribution of each litter category by number and weight. Clean-lab practices (protective clothing, bench cleaning, minimisation of air currents, use of blanks) were used to reduce contamination, particularly by microfibres.

Governance and roles

National laboratories in the participating countries implemented the protocol on samples collected during existing fisheries surveys and commercial operations, under the coordination of the DeFishGear project team. The shared protocol and harmonised classification scheme ensured comparability between countries and allowed a regional synthesis of ingestion rates for a range of fish species.

Key lessons for WES-BCA countries

- Biota-based ingestion monitoring can often be embedded in ongoing trawl or commercial sampling, limiting the additional effort and cost.
- A clear, shared protocol for sampling, dissection, size thresholds and item categorisation is essential if ingestion data are to be used as CI24-type indicators at regional scale.
- Even relatively low ingestion frequencies are important to document, as they reveal exposure pathways and dominant particle types not visible in beach or seafloor datasets.

8. BASELINE SITUATION FOR COMMON INDICATORS

This section provides a desk-based baseline of the current marine litter monitoring situation in the WES-BCA partner countries, focusing on IMAP Common Indicator 22 (CI22), Common Indicator 23 (CI23) and Common Indicator 24 (CI24). The purpose is to establish a starting point for subsequent stakeholder engagement by identifying: the current level of implementation per indicator, the maturity of national data management and reporting workflows, and the main gaps that require clarification through consultations. The baseline is based on publicly available information and should be treated as preliminary; it will be validated and refined through the stakeholder engagement, questionnaire process, and the Webinar. Table 2 gives an overview of former projects in the WES-BCA countries .

8.1. REGIONAL SNAPSHOT (HEADLINE FINDINGS)

Across the partner countries, implementation tends to be strongest for CI22 (beach/coastline litter), while CI23 implementation varies depending on access to vessels, divers, or fish stock survey platforms and—where microplastics are included—laboratory capacity and contamination-control procedures. CI24 is typically the least mature and is most feasible where stranding/rescue networks and necropsy capacity exist (often starting with sea turtles). Reporting readiness also varies: even where monitoring activities exist, the ability to consolidate, quality-assure, and submit datasets with complete metadata is often a limiting factor. These hypotheses and patterns are explored in more detail in the country profiles below and will be confirmed through stakeholder engagement.

8.2. DESK-BASED SNAPSHOT OF NATIONAL IMPLEMENTATION STATUS (CI22, CI23, AND CI24) IN WES-BCA COUNTRIES

This short “state of the art” is based on publicly available sources and uses two main proxies:

- whether marine litter datasets have been uploaded to the IMAP Info System (marine litter modules M1 = Beach litter, M2 = Seafloor litter, M3 = Floating microplastics, MLT1 = Ingestion and Entanglement on Marine Turtles) see: <https://imapinfosystem.info-rac.org/app/#/>
- Documented national/project activities (trainings, pilots, programme updates).

8.2.1. ALGERIA

Algeria has been involved in several projects and was engaged in capacity-building and preparatory steps to implement IMAP/RPML monitoring (e.g., dedicated trainings supporting site selection and pilot surveys, and UNEP/MAP workshops supporting IMAP and the Regional Plan on Marine Litter Management) (MIO-ECSDE, 2017). Within the (SWIM-H2020 SM) project (2016–2019), Algeria implemented activities on marine litter that included systematic beach litter surveys and training on standardised survey protocols, laying the groundwork for marine litter monitoring aligned with the Regional Plan (SWIM-H2020, 2019). Within the WES project (2019–2023) national activities on marine litter monitoring and management in Algeria were launched, combining workshops, training for practitioners on beach, and sea-surface and seafloor litter monitoring to generate fit-for-purpose IMAP EO10 data (WES, 2021b). Algerian experts further participated in regional capacity-building activities

in the project H2020 CB/MEP (2009–2014), including training on minimizing marine litter in the Mediterranean and introducing EU MSFD-compatible beach-litter monitoring concepts (Quelle). Algeria was a country of implementation under the Marine Litter MED project (June 2016–Dec 2019) and was involved in pilots on better management of sea-based litter in ports (e.g., improving port reception facilities and delivery of ship-generated waste) (UNEP/MAP, 2025b). Algeria was also a named focus country in Marine Litter MED II (2020–2023) and Marine Litter MED PLUS (2024–2027), which further support EO10 work, including advancing IMAP EO10 monitoring and assessment (e.g., beach litter and floating microplastics) and upgrading indicators (including CI24) (UNEP, 2025a, 2025c). In addition, Algeria was one of the seven beneficiary countries of the EU-funded EcAp MED III project (2020–2023), which aimed to strengthen implementation of IMAP and support the delivery of the data-based 2023 Mediterranean Quality Status Report through harmonized assessment scales and integrated assessment methodologies (UNEP, 2025b). However, in the 20 April 2025 INFO/RAC overview of EO10 reporting, Algeria is not listed among the Contracting Parties that uploaded marine litter datasets to the IMAP Info System (INFO/RAC, 2025).

8.2.2. EGYPT

Egypt was a country of implementation under Marine Litter MED (2016–2019) (Marine Litter MED, 2020). It was also a focus country in Marine Litter MED II (2020–2023) and Marine Litter MED PLUS (2024–2027), which explicitly support progress on EO10, including strengthening monitoring/assessment and upgrading indicators (including CI24), and advancing operation of selected IMAP-based monitoring (e.g., beach litter and floating microplastics) (UNEP, 2025a, 2025c). Under SWIM-H2020 SM (2016–2019), Egypt implemented an assignment on marine litter along the Egyptian Mediterranean coastline, combining pilot beach-litter surveys, capacity-building on survey methodologies and analysis of management options in close synergy with Marine Litter MED (SWIM-H2020, 2019). The WES project (2019–2024) then capitalised on these results by providing further training and technical assistance on marine litter and plastics, including macrolitter surveys (WES, 2021b). Egyptian also participated in regional training and awareness activities under H2020 CB/MEP (2009–2014) (H2020 CB/MEP, 2014). As part of the Plastic Busters CAP project (2021–2023) Egypt implemented project activities explicitly covering the “whole management cycle” from monitoring/surveillance to prevention and mitigation (MIO-ECSDE, 2019). Egypt was also part of the EcAp MED III project (2020–2023), in which national IMAP implementation and IMAP Info System expansion was supported (UNEP, 2025b). In the 2025 INFO/RAC reporting overview, Egypt is listed among the Contracting Parties that uploaded EO10 marine litter datasets to the IMAP Info System (INFO/RAC, 2025), indicating that some level of CI22/CI23 implementation and reporting workflow is in place. For CI24, Egypt is part of ongoing regional work to strengthen and operationalize sea-turtle ingestion/entanglement monitoring capacity (documented via Marine Litter MED PLUS-related actions and trainings) (UNEP, 2025a).

8.2.3. ISRAEL

Israel’s Oceanographic and Limnological Research institute (IOLR) publicly documents long-running national monitoring and explicitly includes a “Marine litter” chapter in its monitoring reports (open to the public since 2019), reinforcing that marine litter is institutionally embedded in national monitoring practice (IOLR, 2025). In the SWIM-H2020 SM (2016–2019) project assistance was given to strengthen

environmental monitoring relevant for marine litter (SWIM-H2020, 2019). Beside the WES project (2019–2023), Israel was part of the project Marine Litter MED (2016–2019) (UNEP/MAP, 2025b) and among the focus countries for Marine Litter MED II (2020–2023) (UNEP, 2025c). In Marine Litter MED, Israel was one of the countries where “Adopt-a-Beach” pilots were implemented at seasonal frequency, explicitly aiming to support national beach litter surveying programmes and the finalisation of national monitoring programmes for IMAP CI22 (UNEP/MAP, 2025b). As part of the The EcAp MED III Project (2020–2023) Israel further worked on the implementation of harmonized monitoring based on IMAP and contributed to the 2023 MED Quality Status Report (UNEP, 2025b). Israel is also a focus country of Marine Litter MED PLUS (2024–2027), which advances IMAP EO10 monitoring and assessment (including beach litter and floating microplastics monitoring) and upgrades EO10 indicators including CI24 (UNEP, 2025a). Israel appears in the INFO/RAC 2025 IMAP reporting overview with uploaded datasets across multiple marine litter modules (including CI22/CI23 and also the sea-turtle-related module used for CI24 reporting), indicating comparatively advanced implementation and reporting uptake for EO10 (INFO/RAC, 2025).

8.2.4. JORDAN

Jordan is one of the countries where the Plastic Busters CAP project (2021–2023) was implemented, aiming to strengthen Integrated Coastal Zone Management (ICZM), deliver training activities on marine litter monitoring, assessment and mitigation measures, organise an e-course on marine litter monitoring, conduct four pilot monitoring and assessment campaigns, and contribute to a coastal cities network for a litter-free Mediterranean (UfM, 2022). The WES project (2019–2024) then launched national activities on plastic pollution and single-use plastics, including roadmaps and green-banking approaches for plastic-waste reduction, which, while not IMAP monitoring per se, target key upstream drivers of marine litter that can be linked to CI22/CI23 monitoring sites (WES, 2021a). Jordanian representatives also had the opportunity to participate in regional marine litter capacity-building under H2020 CB/MEP (2009–2014) (H2020 CB/MEP, 2014). Jordan is not a Contracting Party to the Barcelona Convention (UNEP/MAP, 2025a), but participates in Barcelona Convention-related initiatives mainly through exchange of best practices and regional capacity building. Consequently, Jordan does not appear in the INFO/RAC list of Contracting Parties uploading EO10 datasets to the IMAP Info System (INFO/RAC, 2025).

8.2.5. LEBANON

Lebanon was a country of implementation under Marine Litter MED (2016–2019) (UNEP/MAP, 2025b). The project implemented seasonal “Adopt-a-Beach” pilots in Lebanon explicitly supporting beach litter surveying and the national monitoring programme for IMAP CI22. Lebanon is also a focus country in Marine Litter MED II and Marine Litter MED PLUS, which further support EO10 monitoring/assessment and indicator upgrades (including CI24), including selected IMAP-based monitoring such as beach litter and floating microplastics (UNEP, 2025a, 2025c). Lebanon participated in regional capacity-building and education activities under SWIM-H2020 SM (2016–2019), where marine litter was also addressed (H2020 SM, 2019). Under the WES project (2019–2024), Lebanon implemented a dedicated plastic-pollution activities linked to reducing beach and sea-based litter loads (WES, 2022) based on the experience gained through the predecessor projects, the “Sustainable Water Integrated Management and Horizon 2020 Support Mechanism” (SWIM-H2020 SM) project 2016-2019 and the “Sustainable

Water Integrated Management Support Mechanism (SWIM SM) project 2010-2015 (UfM, 2021). Lebanese experts also joined regional training on minimising marine litter implemented under H2020 CB/MEP (2009–2014), which helped to familiarize with common IMAP monitoring approaches (H2020 CB/MEP, 2014). In addition, Lebanon participated in Plastic Busters CAP, which replicated Plastic Busters MPAs approaches in southern Mediterranean countries and delivered hands-on training on monitoring and assessment, an e-course, and pilot monitoring/assessment campaigns (TCNR, 2025). Lebanon additionally benefited from the EcAp MED III project for IMAP implementation and IMAP Info System strengthening (UNEP, 2025b). Regarding the 2025 INFO/RAC overview, Lebanon is listed among the Contracting Parties that uploaded EO10 datasets to the IMAP Info System (INFO/RAC, 2025).

8.2.6. MOROCCO

Morocco is listed as a country of implementation under Marine Litter MED (2016–2019) and as a focus country under Marine Litter MED II (2020–2023) (UNEP, 2025c; UNEP/MAP, 2025b). In Marine Litter MED, Morocco implemented seasonal “Adopt-a-Beach” pilots that supported IMAP CI22 (beach litter) monitoring programme development, and it also implemented Fishing-for-Litter pilots (an at-sea litter reduction measure linked to understanding litter accumulation/hotspots). Under SWIM-H2020 SM (2016–2019), Morocco carried out pilot marine litter monitoring and assessment using standardised IMAP methods and seasonal surveys to characterise macro-litter and identify targeted management options that fed into a national marine litter action plan (SWIM-H2020 SM, 2019). The WES project (2019–2024) subsequently launched a national activity on marine litter assessment (including beach and at-sea surveys, training and peer exchange), supporting baseline consolidation and planning in line with the Regional Plan and IMAP EO10 (WES, 2024b). Moroccan authorities also took part in regional training under H2020 CB/MEP (2009–2014), which promoted harmonised marine litter monitoring and management approaches (H2020 CB/MEP, 2014). Morocco is also a focus country of Marine Litter MED PLUS (2024–2027), which explicitly advances IMAP EO10 monitoring and assessment, including selected IMAP-based monitoring programmes for beach litter and floating microplastics, and upgrades to EO10 indicators including CI24 (UNEP, 2025a). Morocco additionally participated in EcAp MED III, which boosted IMAP implementation and expanded the IMAP Info System (UNEP, 2025b). Morocco appears in the INFO/RAC 2025 IMAP reporting snapshot with uploaded datasets for the core marine litter monitoring modules corresponding to CI22 (beach litter) and CI23 (seafloor litter; floating microplastics) but no sea-turtle data is shown for CI 24 (INFO/RAC, 2025) which should be explored during stakeholder engagement. In parallel, Morocco operates the long-running Programme National de Surveillance de la Qualité des Eaux de Baignade et du Sable des Plages du Royaume, which includes a beach-litter component following UNEP/MAP protocols: since 2020, the programme has covered around 60 beaches (38 Atlantic and 22 Mediterranean) with two litter-typology campaigns per year (spring and autumn), generating a national dataset on beach macro-litter composition and trends that directly supports and complements IMAP CI22 implementation (MTEDD, 2023, 2022, 2021, 2020). Further research on beach litter pollution was conducted during the TouMaLi project (Haseler et al., 2025).

8.2.7. PALESTINE

As Palestine is not a Contracting Party to the Barcelona Convention (UNEP/MAP, 2025a), participation in IMAP-related processes is typically framed around exchange of experience and capacity building rather than formal reporting obligations. Under WES (2019–2024), a national activity on plastic-waste management and single-use plastics was supporting the development of strategies and regulatory tools that, while not monitoring in themselves, are closely linked to future reductions in beach and sea-based litter loads (WES, 2024a). Palestinian stakeholders also participated in regional marine litter training under H2020 CB/MEP (2009–2014), gaining exposure to Mediterranean monitoring methodologies and good practices (H2020 CB/MEP, 2014). Under the Plastic Busters CAP framework, organizations from the Palestinian Authority joined the 2023 “Clean Up the Med” campaign, a 16-country, citizen-based beach clean-up and awareness initiative targeting marine litter across the Mediterranean (EU Neighbours, 2025). More broadly, Palestine is developing programmes and activities to fight marine plastic pollution, often with support from the World Bank, as part of wider regional efforts in the MENA region (World Bank, 2021). Palestine does not appear in the INFO/RAC lists of Contracting Parties uploading EO10 marine litter datasets to the IMAP Info System (INFO/RAC, 2025).

8.2.8. TUNISIA

Tunisia is included as a country of implementation under Marine Litter MED (2016–2019) and as a focus country under Marine Litter MED II (2020–2023) (UNEP, 2025c; UNEP/MAP, 2025b). In Marine Litter MED, Tunisia hosted pilots on better management of sea-based litter in ports (including improving reception facilities and ship-generated waste delivery in ports/marinas). Through the WES project (2019–2024), Tunisia has received targeted assistance on plastic pollution and single-use plastics (e.g. plastic-free coastal initiatives and better plastic-waste management), directly addressing drivers of marine litter along the Tunisian coast (WES, 2023). Tunisian experts also participated in regional training on minimising marine litter under H2020 CB/MEP (2009–2014), which introduced harmonised beach-litter monitoring concepts (H2020 CB/MEP, 2014). Within the TouMali project (2021–2025), six beaches were surveyed in 2023 at three-month intervals, following an approach comparable to CI22 (beach litter) (Slimane et al., 2025). Tunisia participated in Plastic Busters CAP (2021–2023), which provide training on monitoring and assessment, e-courses, and pilot projects regarding monitoring/assessment campaigns (MIO-ECSDE, 2019). Tunisia is also a focus country under Marine Litter MED PLUS (2024–2027), which explicitly advances IMAP EO10 monitoring and assessment (including beach litter and floating microplastics monitoring) and upgrades EO10 indicators including CI24 (UNEP, 2025a). Within the EcAp MED III project Tunisia further focused on IMAP implementation and IMAP Info System strengthening. (UNEP, 2025b). In the 2025 INFO/RAC overview, Tunisia is listed among the Contracting Parties that uploaded EO10 datasets to the IMAP Info System (INFO/RAC, 2025).

8.3. FORMER PROJECTS IN WES-BCA COUNTRIES

TABLE 2 FORMER PROJECTS IN THE WES-BCA PARTNER COUNTRIES WITH FOCUS ON MARINE LITTER.

<i>Project / Initiative</i>	<i>Period</i>	<i>Main contributions to CI22</i>	<i>Main contributions to CI23</i>	<i>Main contributions to CI24</i>	<i>WES-BCA countries directly involved</i>
<i>H2020 CB/MEP</i>	2009–2014	Regional training on beachlitter monitoring; MSFD concepts; awareness.	Conceptual multi-compartment view; no systematic CI23.	None (pre-IMAP biota indicator).	Most WES-BCA countries via regional trainings.
<i>SWIM-SM</i>	2010–2015	Governance and capacity-building on water/pollution; groundwork for ML monitoring.	Indirect (broader pollution work).	None (pre-IMAP biota indicator).	Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine, Tunisia.
<i>SWIM-H2020 SM</i>	2016–2019	Pilot 100 m beach-transects; seasonal surveys; methods and training.	Preparatory work on sea-based sources and multi-compartment assessment.	None directly; macro-litter and governance focus.	Algeria, Egypt, Morocco (pilots); Jordan, Lebanon, Tunisia, Palestine (regional TA).
<i>Marine Litter MED I</i>	2016–2019	'Adopt-a-Beach' pilots; harmonised protocols; design of CI22 programmes.	Seafloor/sea-based pilots (ports, fishing-for-litter).	Scoping of species/approaches; basis for CI24.	Algeria, Egypt, Israel, Lebanon, Morocco, Tunisia.
<i>Plastic Busters MPAs</i>	2016–2022	Harmonised beach-litter protocols in MPAs.	Floating and seafloor litter protocols; some micro-litter.	Biota-impact protocols (ingestion/entanglement) in MPAs.	Mainly northern Med; methodological reference.
<i>ACT4LITTER</i>	2017–2019	Snapshot beach-litter assessments; MPA action plans.	Indirect via MPA measures.	None (management-focused).	Northern Med MPAs; methodological reference.
<i>WES (Water and Environment Support)</i>	2019–2024	TA for marine litter/plastics; beach-litter pilots; training.	Support for multi-compartment monitoring in some countries.	Indirect via upstream plastic reduction and governance.	Algeria, Morocco (pilots); Egypt, Israel, Jordan, Lebanon, Palestine, Tunisia.
<i>Marine Litter MED II</i>	2020–2023	Operationalisation of CI22; link to Regional Plan measures.	Support to seafloor/surface monitoring; IMAP/MSFD alignment.	Operationalisation of CI24; baselines, thresholds, protocols.	Algeria, Egypt, Israel, Lebanon, Morocco, Tunisia.

<i>EcAp MED III</i>	2020–2023	Support to IMAP CI22 implementation; data flows to IMAP Info System.	Strengthening EO10 data submission; input to 2023 MED QSR.	Support to MLT1 data standards and strategies (turtles).	Algeria, Egypt, Israel, Lebanon, Libya, Morocco, Tunisia.
<i>Plastic Busters CAP</i>	2021–2023	Hands-on CI22 training; pilot surveys in southern Med.	Pilot multi-compartment surveys (beach, surface, seafloor).	Initial training on biota-impact monitoring.	Egypt, Jordan, Lebanon, Tunisia.
<i>TouMaLi (Tourism & Marine Litter)</i>	2021–2026	Macro-/mesolitter monitoring on tourist/urban beaches; hotspots.	Limited; shoreline focus.	None (pressure/management focus).	Egypt, Morocco, Tunisia.
<i>Marine Litter MED PLUS</i>	2024–2027	Support to IMAP-based beach-litter monitoring.	Support to floating microplastics and seafloor litter; data flows.	Upgrade of EO10 incl. CI24; turtle-impact strategies.	Algeria, Egypt, Israel, Lebanon, Morocco, Tunisia.

8.4. REPORTING STATUS FOR EO10 IN WES-BCA COUNTRIES IN THE INFO/RAC SYSTEM

For Marine Litter cluster, 17 Contracting Parties (Albania, Bosnia and Herzegovina, Croatia, Cyprus, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Egypt, Malta, Montenegro, Morocco, Slovenia, Spain, Tunisia, Turkey) have uploaded 147 datasets for Ecological Objective 10, of which 73 are compliant or valid. It should be remarked that only 6 dataset have been published by Contracting Parties (INFO/RAC, 2025). So not all datasets are available and were able to be evaluated here. An overview of WES-BCA countries and uploaded data can be found in

Table 3.

TABLE 3 IMPLEMENTATION OF IMAP CONFORM MONITORING IN THE WES-BCA PARTNER COUNTRIES REGARDING THE DIFFERENT COMMON INDICATORS.

Country	Contracting Party to Barcelona Convention	IMAP EO10 reporting status (INFO/RAC 2025)	M1 Beach litter	M2 Seafloor litter	M3 Floating microplastics
<i>Algeria</i>	Yes	Not listed among CPs with uploaded EO10 datasets in INFO/RAC 2025 snapshot.	No data uploaded (as of INFO/RAC 2025)	No data uploaded (as of INFO/RAC 2025)	No data uploaded (as of INFO/RAC 2025)
<i>Egypt</i>	Yes	Referenced in INFO/RAC text as one of the 17 CPs that uploaded EO10	TBC (datasets mentioned, module-	TBC (datasets mentioned, module-level detail unclear)	TBC (datasets mentioned, module-level detail unclear)

		datasets, but not shown in graphical groups.	level detail unclear)		
<i>Israel</i>	Yes	Shown in 'Marine Litter Cluster – Group 02' graph with multiple sampling years across M1, M2, M3 and MLT1.	Yes (multiple sampling years)	Yes (multiple sampling years)	Yes (substantial time series)
<i>Lebanon</i>	Yes	Shown in 'Marine Litter Cluster – Group 02' graph with sampling years for M1, M3 and MLT1.	Yes (several sampling years)	No sampling years visible in INFO/RAC 2025 chart	Yes (some sampling years)
<i>Morocco</i>	Yes	Shown in 'Marine Litter Cluster – Group 03' graph with sampling years for M1, M2 and M3.	Yes (multiple sampling years)	Yes (some sampling years)	Yes (some sampling years)
<i>Tunisia</i>	Yes	Shown in 'Marine Litter Cluster – Group 03' graph with sampling years for M1, M2 and M3.	Yes (multiple sampling years)	Yes (multiple sampling years)	Yes (multiple sampling years)
<i>Jordan</i>	No	Not a Contracting Party; no IMAP EO10 reporting obligations and no datasets in IMAP Info System.	N/A	N/A	N/A
<i>Palestine</i>	No	Not a Contracting Party; no IMAP EO10 reporting obligations and no datasets in IMAP Info System.	N/A	N/A	N/A

9. CONCLUSION

This background document is intended to serve as a practical reference and concept note for the next steps of the WES-BCA activity on marine litter monitoring and reporting: Support for WES-BCA PCs in the Mediterranean for the monitoring and reporting programs for marine litter prevention and mitigation.

It provides the technical and institutional framing for a structured dialogue with WES-BCA partner countries on how to implement and operationalize IMAP EO10 indicators (CI22, CI23 and CI24) in practice. The findings from the questionnaires linked below, together with insights from the Regional WES-BCA Webinar on Mediterranean monitoring and reporting programs for marine litter prevention and mitigation, scheduled for 3 February 2026, will collectively inform the Regional Assessment Report on Marine Litter Monitoring and Reporting currently under preparation.

This assessment will include country profiles, a regional synthesis, an analysis of cross-cutting issues, action-oriented recommendations, and a proposed project concept to support further implementation and capacity-building in the WES-BCA region.

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Links for the questionnaires:

[Questionnaire A – National Coordination and Reporting \(Policy / IMAP Leads\)](#)

[Questionnaire B – Beach / Coastline Litter Monitoring \(CI22\)](#)

[Questionnaire C1 – Seafloor Litter Monitoring \(CI23\)](#)

[Questionnaire C2 – Floating Microplastics Monitoring \(CI23\)](#)

[Questionnaire C3 – Biota Impacts \(Candidate CI24 – Marine Turtles\)](#)

[Questionnaire D – Data Management and IMAP Info System \(EO10\)](#)