



# Monitoring and Mitigation measures

TouMaLi International Conference on “Contribution of sound waste management systems to sustainable tourism and the protection of marine ecosystems”, 9-10th November, Marrakech

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# Why management of Marine Litter is important?

## For the environment and us

### Threat to fauna



### Introduction of invasive species



### Habitat destruction



### Damages to ships and equipment



### Safety and health risk



### Loss of aesthetic



- Decrease the environmental impact on ecosystems
- Secure the proper functioning of ecosystem services
- Avoid health and safety risks
- Decrease our carbon footprint by integrating marine litter management into circular economy concepts

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# Why management of Marine Litter is important?



## For the tourism industry

44% of the Gross Value Added

63% of the employment in Europe (European Commission, 2022)

58% of consumers more aware of the environment (WTTC, 2020).



- 40% annual income  
(Zielinski et al. 2019).



+ US\$120 million by  
eliminating litter (NOAA, 2019).

Decrease impact on local economies  
(fisheries, tourism)



**Beach and sea pollution is  
a threat to the tourism  
economy!**

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# Why management of Marine Litter is important?

## Monitoring

## Linking monitoring to management

Monitoring is the repeated measurement of a characteristic (here marine litter) of the environment, or of a process, in order to detect a trend in space or time. (GESAMP 2019)

Indicator 22: Trends in the amount of litter washed ashore and/or deposited on coastlines.

Indicator 23: Trends in the amount of litter in the water column including microplastics and on the seafloor. (INTEGRATED MONITORING AND ASSESSMENT PROGRAMME OF THE MEDITERRANEAN SEA AND COAST AND RELATED ASSESSMENT CRITERIA, 2017)

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# Measures to reduce beach litter

## Linking monitoring to management

Trends in the amount of litter washed ashore and/or deposited on coastlines<sup>1</sup>.



### Monitoring



Abundances



Spatial & temporal variability



Top litter items



Sources

“Every piece of debris has human fingerprints on it”

(Sheavly and Register, 2007)



Measures



<sup>1</sup> INTEGRATED MONITORING AND ASSESSMENT PROGRAMME OF THE MEDITERRANEAN SEA AND COAST AND RELATED ASSESSMENT CRITERIA, (2017)

# Measures to reduce beach litter

## What can the HORECA sector do?

Escobar-Sánchez et al. In preparation

Study at IOW to assess most effective measures

The top 5 litter items for the TouMaLi partner countries were:

1. Plastic pieces 2.5 – 50 cm
2. Cigarette butts
3. Sweet wrappers
4. Bottle caps
5. Plastic bags (small)

Haseler et al. In preparation

Category	Measures
Clean ups	5
Avoidance of littering	6
Waste reduction	13
Alternatives	4
Management, Policy and Infrastructure	10
Monitoring and Research	6
Involvement of stakeholders	4
Awareness raising and capacity building	8

Interred Med- Act4Litter, 2018; ISOTECH, 2014; Blue Flag, 2021; WWF, 2019; UNEP, 2019; GSTC, 2016; 2019; Facco, 2022

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# Measures to reduce beach litter

## Linking monitoring to management

Higher priority



**Prevention**

***Avoid or stop the damage from occurring***



**Mitigation**

***Decrease the negative impact of pollution***



**Remediation**

***Repair a damage by removing pollutants***



Escobar-Sánchez et al. In preparation

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# Measures to reduce beach litter

## Beach cleaning not a long term solution!



- + Removes litter from the beach
  - + Raises awareness (when involving volunteers)
  - + Simple when not using machinery
  - End-of-pipe measure
  - Litter collected complex to recycle
  - Costly
  - Machinery can harm the habitats
  - Gives sense of relaxation
- **Beach cleaning** is a remediation measure but not real cost-efficient and sustainable long-term solution.

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# Measures to reduce beach litter

## What can the HORECA sector do?

Tongoy, Chile



Handing out pocket-ashtrays to reduce cigarette butts on beaches

Cigarette butt bins



Praia do Molho, Portugal



Warnemünde, Germany



Source: Swag Brothers



Tunis, Tunisia



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# Measures to reduce beach litter

## What can the HORECA sector do?

Tongoy, Chile



La Serena, Chile



Alexandria, Egypt



Make separate waste bins (for different materials) available at public places (e.g. at beaches)

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# Measures to reduce beach litter

## What can the HORECA sector do?

Rostock, Germany



Implementing a deposit-refund scheme on plastic containers during social events at e.g. beaches or harbours



Promote reusable items, such as (reusable) cups and bags

<https://app.relevo.de/>

Make water refill stations available



Alexandria, Egypt



**01**

App laden

Hol dir die kostenfreie Vytal App auf dein Handy



**02**

Bestellen

Frag nach Vytal und bestelle dein Take Away in Mehrweg



**03**

Ausleihen

Leih dir Vytals kostenfrei & bequem per QR-Code aus



**04**

Abgeben

Genieße und bringe die gereinigten Vytals innerhalb von 14 Tagen zurück

<https://www.vytal.org>

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# Measures to reduce beach litter

## What can the HORECA sector do?

Provide staff training on waste reduction, waste sorting, management, etc



Reduce unnecessary packaging (e.g. by buying in bulks for less packaging)



Source: NUS Blog



Source: Packaging Getaway



Source: Gear Junkie



Source: Hotelier India

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# Measures to reduce beach litter

## What can the HORECA sector do?

Involve local stakeholders in the environmental management of the area, e.g. through round tables or cooperatives



Source: BUND MV



EUROPE | 11 MAY 2017

THE NEED FOR MULTI-STAKEHOLDER COOPERATION TO ENHANCE RESPONSIBLE TOURISM UNDERLINED AT THE 3RD INTERNATIONAL CONGRESS ON ETHICS AND TOURISM

Source: UNWTO (2017)



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# Measures to reduce beach litter

## What can the HORECA sector do?

Make a pledge to achieve sustainable goals, e.g. keep beaches clean, waste reduction, eliminate SUPs, etc

Use ecolabels and certifications at e.g. restaurants, hotels, beaches, etc - globally recognized



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EARTHCHECK



CERTIFICAZIONE QUALITA' ISO 13009



Green Key

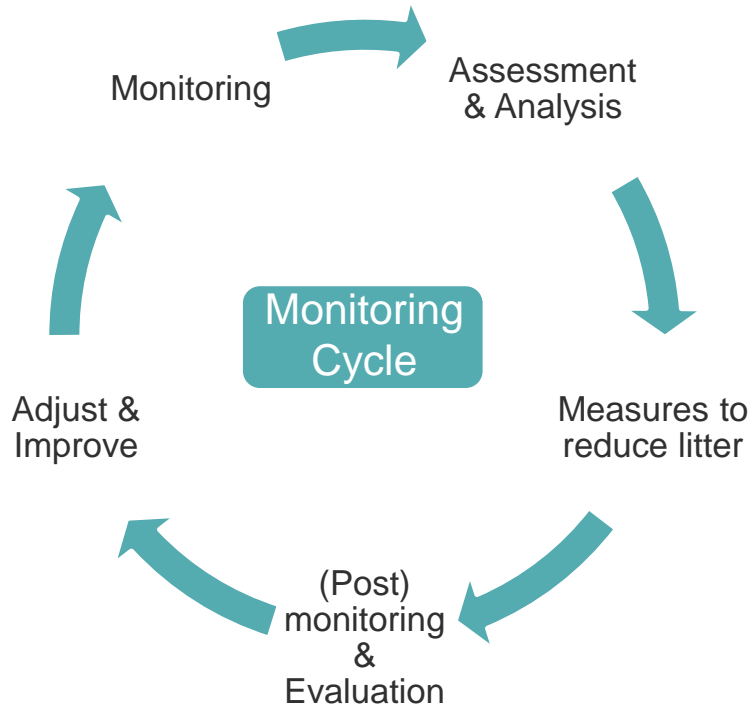


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# Measures to reduce beach litter

## Linking monitoring to management



Longterm-monitoring is needed.

Exit Strategy - A post-project plan is essential.

Further marine compartments need to be investigated, as not all litter is on the beach.



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Thank you for your attention!

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