



# BLUEISLANDS FACT SHEET

Seasonal Variation of Waste  
as an effect of Tourism

**Interreg**   
*Mediterranean* EUROPEAN UNION

 **BLUEISLANDS**



## AIMS OF THE PROJECT

The BLUEISLANDS project aims to identify, address and mitigate the effect of the seasonal variation of waste generated on Mediterranean islands as an effect of tourism.

During the summer season, mediterranean islands host a far greater population. This is beneficial for the local economies, but it also places a great burden on the local infrastructures, especially for waste management systems. By improving knowledge about waste streams, building common guidelines and improving synergies among MED island communities, BLUEISLANDS project aims to promote sustainable tourism patterns and fuel local loops of circular economy.

### How will this purpose be achieved?

The purpose of the project will be achieved through a well-designed methodology that defines the actions to be implemented. In particular, the project is divided into 3 phases.

# 3 PHASES

## METHODOLOGY



### PHASE 1 STUDYING PHASE

#### 01/ Monitoring plastic pollution in MED Islands

Plastic pollution is threatening the oceans, marine animals and even human health. When it is dropped on land, plastic often ends up in the marine system where it disintegrates into small pieces (microplastics; <5mm down to few nanometers) that can easily be integrated to the food web. Beaches represent one of the main gate for plastic to enter the ocean, associated to the current system of mass tourism over the last few decades.



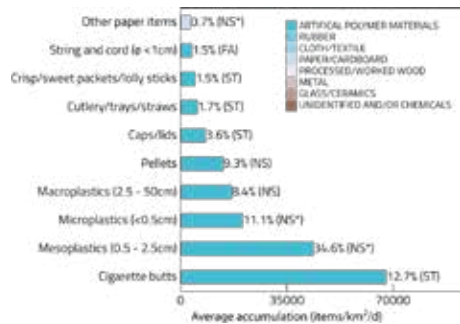
BLUEISLANDS project is assessing the dynamics of marine litter, with a special attention paid to micro and macroplastics, in highly touristic Mediterranean Islands. A survey protocol was specifically designed to periodically monitor the amount and type of marine litter found on three selected beaches (marine litter surveys and sand samples) of each island, as well as in the surface waters running the length of these beaches. The beaches were selected in order to encompass different case-scenario including highly touristic beaches, remote beaches (likely less impacted) and beaches mainly used by locals. These surveys conducted during both the high and low touristic seasons in order to assess the impact of tourism on the generation of waste (including both the micro- and macroplastics) on these beaches.



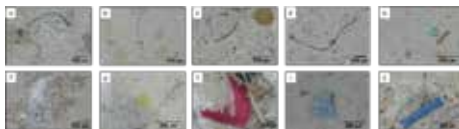


The list of the 10 items with the highest accumulation rates collected on the 8 touristic beaches is presented below. The percentages next to each item refer to their relative abundance with respect to the total collected.

The possible source of the items is given into parenthesis: ST=shoreline, including poor waste management, tourism and recreational activities; FA= fishing and aquaculture; and NS=non-sourced. The asterisk (\*) associated to the non-sourced items (NS) shows that this specific item presents a clear seasonal increase. The color scale (upper right) indicates the type of material.



Despite differences between beaches and islands, all the sand samples analysed were contaminated with microplastics (fibres, microbeads, foams...).



Examples of Microplastics found in the sand.

(a-d) Fibres, (e) Microbead, (f) White Foam, (g-h) Films, (i) Blue fragment, (j) Blue film and blue fragment.  
©Laura Simon Sanchez.

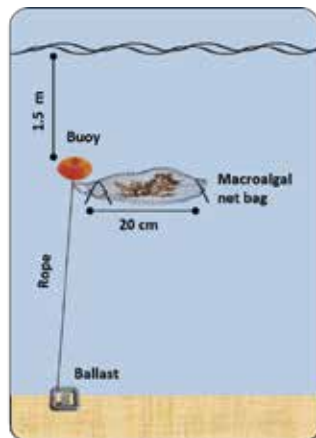


## 02/ Mitigating wastewater impact and anthropogenic nutrients

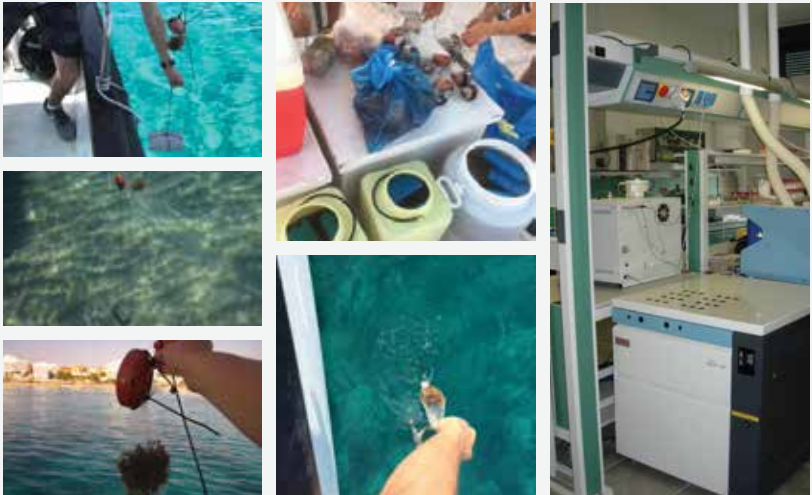
BLUEISLANDS is developing a monitoring system to investigate the quality of coastal seawater through short-term macroalgae deployments. The experiments were carried out in three Mediterranean islands (Cyprus, Sicily (IT) and Rhodes (Greece)) before, during and at the end of the touristic season.

In all three islands, macroalgae collected from a pristine site were deployed for 3 days within small nylon net bags, in a high-tourist site (Paralimni, Giardini Naxos and Faliraki beach) and in a control site with very low flux of tourists (Cavo Greco, Fondaco Parrino and Afandou beach).

Macroalgae bags were kept at a depth of -1-1.5 m from the sea surface to ensure an optimal solar radiation for macroalgae metabolism. Environmental variables were contextually measured through a multimeter probe. At the end of the experiment, macroalgae were collected for further laboratory analysis ( $\delta^{15}N$ ).



Final results will provide information about the exposure of macroalgae to anthropogenic nutrients across the seasons, allowing to highlight the temporal variation of the impact of tourism on seawater quality. The output will be georeferenced maps that will be easily-readable for stakeholders and policymakers, showing the occurrence, extent and seasonal variation of plumes of nutrients of human origin, and hence providing an efficient system for coastal seawater quality monitoring in coastal touristic destinations.



Preliminary results showed only a slight enrichment of anthropogenic nutrients in the studied coastal areas and especially in highly touristic sites, and a limited influence of anthropogenic activities on nutrient input in coastal seawater.

Although no dramatic extent of anthropogenic input was detected in the investigated sites, suggesting that management of wastewater seems to be efficient also during the tourist peak, specific strategies can be proposed and adopted in order to further limit input of anthropogenic nutrients in the marine coastal areas, which so far seem mainly driven by the presence of bathers and recreational boats.

### 03/ Waste characteristics study

The collection of primary data about sources of waste, frequency, type and volume and tourism presence started in June 2018 till October 2018.

The aim of waste characterization study was to define waste seasonal variation in measurable and comparable quantities and quality in relation to tourism.



### 04/ Building scenarios

Data, collected from all partners on Municipal Solid Waste generation and tourist wave variation, will be collated, evaluated and form the basis of a comprehensive report showcasing the issue under examination, essentially proving that there is indeed an issue, a problem which must be addressed.

Based on the report prepared from the results derived from all 8 islands a multidimensional tool will be formulated, encompassing action plans, addressing all major aspects of the issue at hand, including partner special characteristics and needs, through which this common problematic phenomenon can most effectively be addressed.

After discussing the results of the tool with the partners a final report will be prepared proposing the most effective means to deal with the issue under examination for each one of the 8 islands including some light pilot activities.



## PHASE 2

### DEVELOPING ACTION PLANS - TESTING

BLUEISLANDS project will realize feasibility studies for investments in strengthening and amending of projects to protect valuable insular areas, together with local guidelines to support the implementation of seasonal waste variation management plans coordinating all institutional partners. Furthermore, Rhodes island will establish a Mobile Recycling Center and monitor its efficiency around the year so to transfer to the other partners the experience and outcomes. This elaboration will also involve HORECA sector, public or other waste/sewage/water treatment operators.

As a final outcome of the guidelines document, BLUEISLANDS project is expected to produce proposals for amendments in existing legislation in six National Authorities of Mediterranean islands.

During the summer period 2019, the tool will be implemented with selected action plans for each participating island, while the efficacy of each action plan will be evaluated.

Eventually, a final report entailing all derived data and experience will showcase the most efficient and successful ways to turn a difficult and burdensome issue for MED islands' communities into a means fueling the establishment of circular economies while preserving and perpetuating sustainable tourism to the Mediterranean.



## PHASE 3

### TRANSFERRING

The expected outcomes of transferring phase are:

- > Baselines for Knowledge transfer
- > Impact Analysis-the direct and indirect economic impact after the implementation of efficient waste management
- > Interregional Workshops for experience exchange and capacity building
- > On line tool for decision makers (mainly for local authorities)
- > Next Steps Plan- identify the key implications of the emerging project outputs & to create the opportunity to build on the project findings,through their own networks&beyond





# BLUEISLANDS MID-TERM CONFERENCE & CHARTER OF COMMITMENTS



In the framework of the BLUEISLANDS project, the conference “Towards a circular economy and sustainable tourism on islands”, was hosted on 11 April 2018 at the European Parliament by the SEARICA Intergroup and jointly organized with ACR+. It provided a platform to discuss a shared path towards material resource resiliency, circular economy and sustainable tourism on islands.

On this occasion, several local authorities and Members of the European Parliament signed the BLUEISLANDS and URBAN-WASTE’s ([urban-waste.eu](http://urban-waste.eu)) “Charter of commitments for sustainable material resources management and circular economy”.

**The Charter now has been signed by:** the SEARICA’s Chair Gesine Meissner, Vice-chairs Michela Giuffrida and Tonino Picula, and SEARICA’s members Cláudia Monteiro De Aguiar and Davor Škrlec; the Department of Environment of Cyprus (DOE), the Catalan Waste Agency (ARC), the Region of Crete, the Consell de Mallorca, Agence du Tourisme de la Corse (ATC), Municipality of Lisbon, Mykonos, Nicosia, Ponta Delgada, Puerto de la Cruz, Rhodes, the agency Wasteserv Malta.

## Charter of commitments for sustainable material resource management and circular economy



Project co-financed by the European Regional Development Fund

European cities and islands are some of the world's **greatest tourism destinations**. The socio-economic impact of tourists and visitors is extraordinary and tourism, with the economic and employment opportunities it creates, has become a key factor in local policies and planning.

At the same time, tourism brings a range of negative externalities, including high levels of **unsustainable resource consumption** and **seasonal waste production**. Figures show that during high season some of the tourist cities and islands have to cope with a residing population reaching from two to ten times their usual number of inhabitants. These challenges create inconveniences in waste management while **litter threaten the preservation and conservation of ecosystem services** - sea, beaches, natural parks - offered by tourist destinations, that are at the basis of the attractiveness of tourist cities and islands.

For these reasons, we, European public authorities of touristic areas, assert our **shared vision towards a more sustainable tourism** and to **improve waste management plans in order to cope with seasonal variations**. We adopt the **Charter of Commitments for Sustainable Material Resources Management and Circular Economy** as a significant step toward this direction, and we will therefore work to:

**Reduce waste generation by tourists and tourism service providers**

**Improve the management of waste generated by tourism and resource efficiency, by promoting short cycles and local, sustainable consumption**

**Involve all relevant local and regional stakeholders in collaborative and mutual learning activities**

**Raise awareness on reducing marine litter**

**Raise awareness of tourists and help them to act responsibly and in a sustainable way**

**Share our vision and promote exchange of good practices with other touristic cities, regions and islands**





## WEBINARS

The BLUEISLANDS project offered to its partners and other interested stakeholders four free capacity building webinars focusing on:

- ✓ Circular Economy
- ✓ Integrated Coastal Zone Management (ICZM)
- ✓ Life Cycle Assessment (LCA)
- ✓ Sustainable Tourism



Among the conclusions of the webinars were the need to act on three main pillars for more sustainable tourism and better waste management:

**Social level:** to raise awareness of the population by involving local actors and working together with a territorial intelligence approach; to change the consumers' habits and demands.

**Political level:** to ban some practices such as plastic bags, plastic straws, etc.

**Innovation approach:** to implement innovative technologies in waste management which can contribute to the circular economy.

### More information:

<https://blueislands.interreg-med.eu/news-events/news/detail/actualites/recordings-of-blueislands-capacity-building-webinars-are-available/>



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