



**WINPOL**  
Interreg Europe



European Union  
European Regional  
Development Fund

## Action Plan Implementation

**Environment and  
Resources Authority  
(ERA)**

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# Nature of the Action:

- Marine litter may be one of the fastest-growing threats worldwide.
- Every year, millions of tonnes of litter end up in the ocean worldwide, causing serious economic, environmental and health degradation.
- Besides coastal-economic activities such as tourism, there are other sources, which are affecting the quality of our waters in terms of waste;
  - Land-based and marine-based possible sources could be littering in urban areas, valleys and watercourses;
  - Illegal dumping and/or accidental dumping at sea from shipping activities.



# Aim of Action Plan:

- The Action Plan will assist Malta in taking on a more holistic approach in its efforts to reduce marine litter and its effects on the marine ecosystems. It will, amongst other benefits:
  - Improve litter management in urban natural areas;
  - Capture litter in the marine environment without the need of active human intervention;
  - Foster awareness within the community and visitors to the site that artificial intelligence can facilitate litter management;
  - Enhance awareness with regards to appropriate waste disposal practices;
  - Assist in improving waste management policies through better management procedures and practices nationwide.

# Main Action:

## ***Floating debris interception devices at sea and inland waters (Seabins)***

### ***Sub-Actions:***

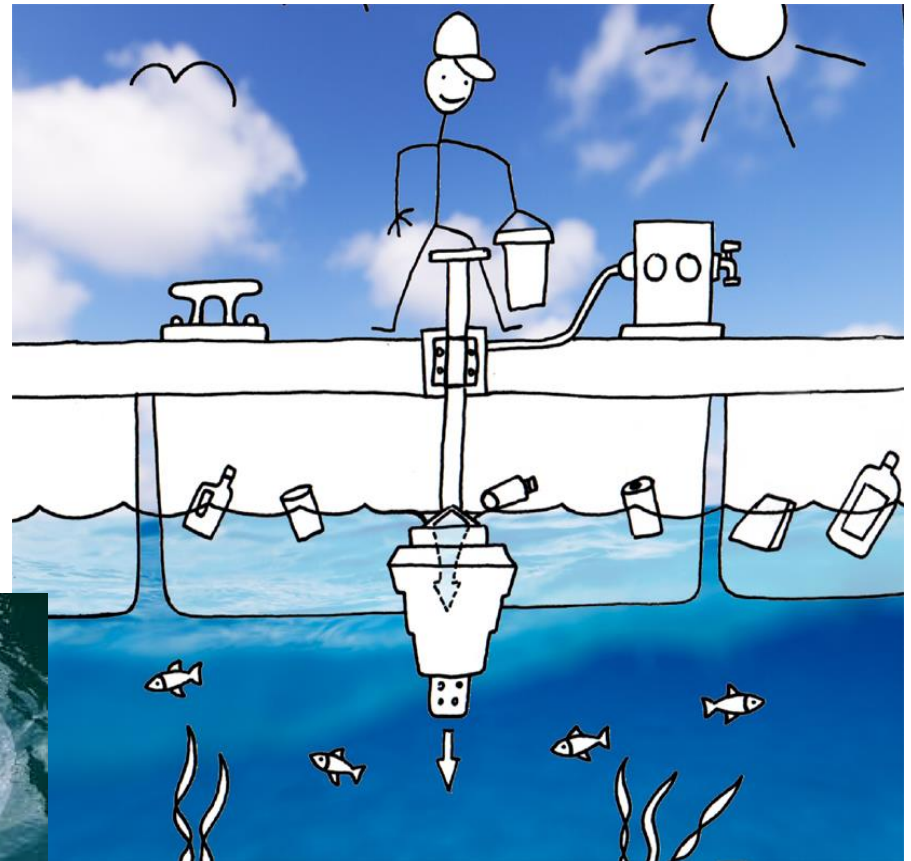
- i. Installation of a new floating debris interception device
- ii. Maintaining current floating debris interception devices at sea
- iii. Data Gathering and Waste Characterisation Exercise

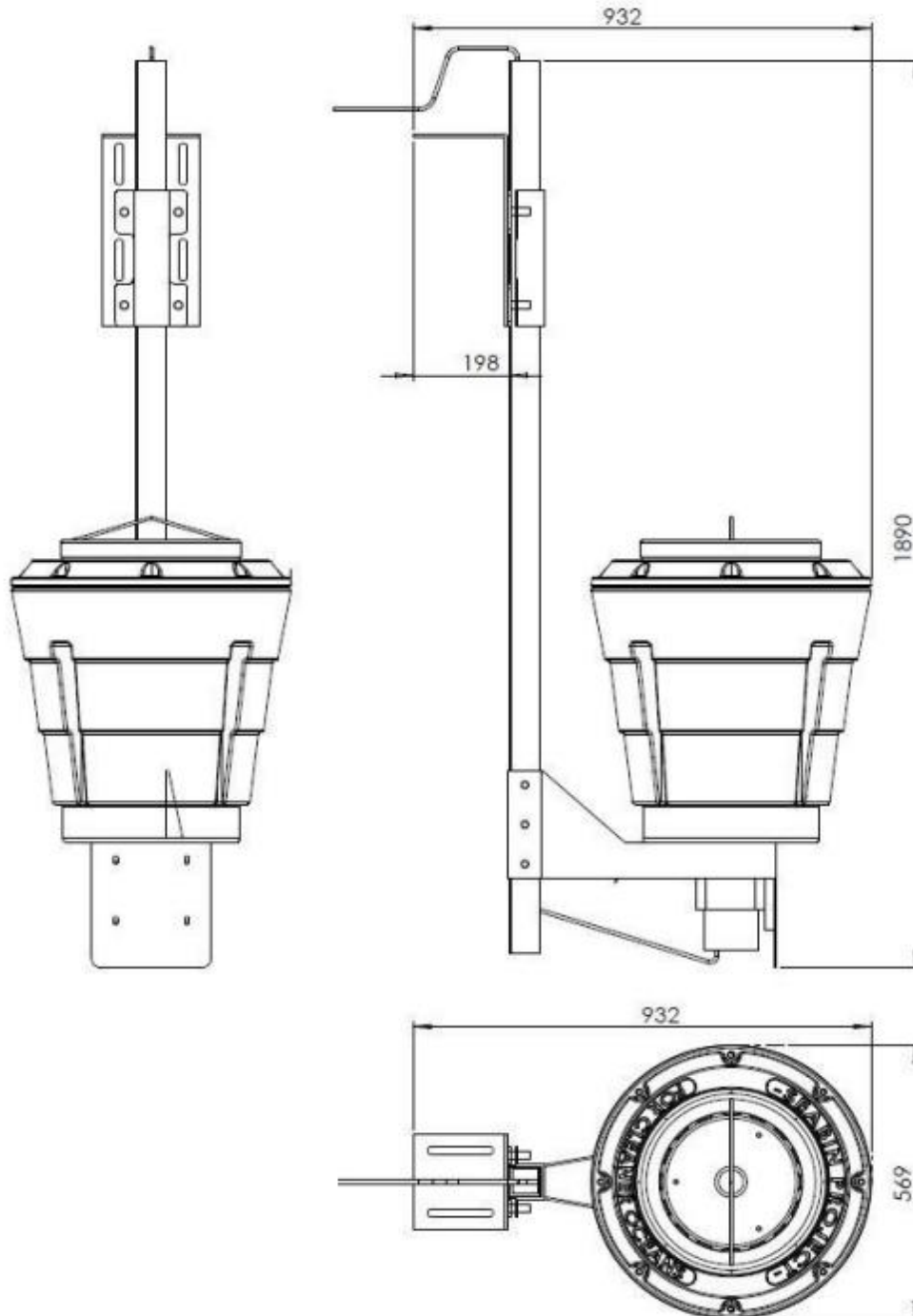




# The Technology:

- The Seabin is designed to be installed in catchment areas of ports and harbours where debris naturally collects due to the flow of water in the area.
- Water is sucked in from the surface and passes through a catch bag inside the Seabin, with the help of a submersible water pump. The water is then pumped back into the sea, leaving litter and debris trapped in the catch bag.





- Each Seabin filters around 25,000L/h (or around 219 million L/ year per bin) of water and captures plastics and fibres up to **2mm in size**, all the way up to jerrycans and large 2L plastic bottles.



# State-of-play:

## ❑ Installation of new Seabin

1. The area where ERA initially envisaged to install the Seabin (i.e. at il-Magħluq ta' Marsascale) is currently being dominated with alga and hence the seabin may likely be clogged. In view of this, Nature Trust Malta, who were one of the stakeholders together with Zibel for this sub-action, dropped out of the Action Plan.
2. The current version of the Seabin (Version 5) is not in production anymore in Europe due to the following:
  - A change in the European manufacturer for the Seabin unit which is still in a transition phase
  - A shortage of pumps for this model related to the ongoing supply chain issues
  - More focus being shifted towards the Version 6 which is due to be launched **next year**

In this regard, ERA **cannot** install such technology as initially planned.

## Possible Way Forward

- ERA carried out discussions with the stakeholder Zibel (who will assist the Authority in supplying the unit) to identify a new location and a new technology which serves the same functionality as the current version of seabin. Funding will still be sourced by ERA.

## Potential Location:

- No other Natura 2000 site was identified to fit the requirements needed to successfully install a new unit (i.e. an enclosed area which is not subject to harsh weather conditions).
- The next best option is to install the unit either in a **Marine Protected Area (MPA)** or in an area covered by the Water Framework Directive ((Directive 2000/60/EC). In this regard, ERA would still deliver similar objectives as initially planned - i.e. Develop measures aimed to increase awareness about littering and about the importance of keeping sensitive areas/water bodies free from litter. – *Location to be determined.*



## Potential New Technology- Same Functions:



- The unit attracts and engulfs all solid or liquid waste floating on the water surface.
- Totally silent, it is placed at the water's edge and/or on floating pontoons where the marine waste is identified.
- It can contain up to 100kg of waste.



## □ Maintaining current Seabin Units

- This sub-action is co-founded by ERA and the Ministry for the Environment, Energy & Enterprises through a Memorandum of Understanding (MoU) set up with the eNGO Žibel.
- The pandemic delayed certain tasks and works which were agreed upon;
  - **e.g. of delayed tasks:**
    - Certain sea-bins required new parts. Maintenance was postponed due to shipping issues of such parts.
- The AP initially highlighted that there were thirteen (13) sea-bins installed around the islands. There are now twenty-three (23), however currently only seven (7) are operational. The status of the other units is as follows:
  - Some require service – *Maintenance delayed due to shipping delays and unavailable parts.*
  - Some are awaiting re-activation – *Delayed due to site-specific issues such as awaiting works on docks to be finished.*

## How the current Seabins are being maintained?

- The bins are checked three times (3) a week.
- The eNGO Zibel goes on site of each unit and takes out the catch bag.
- The catch bag is weighed and an online form supplied by the eNGO Zibel is filled out accordingly (by phone).
- Once submitted, the relevant stakeholders are automatically updated with the recorded data in a cloud-based mobile and desktop messaging app.
- The waste caught in the catch bag is then disposed of in a safely manner as required by national regulations.



## Data recording from cleaning of units:

Seabin Location	Marina Di Valletta 1	Marina Di Valletta 2	Creek Marina (near black pearl)	Creek Marina (near restaurant)	Manoel Island Pontoon A	Manoel Island Pontoon B	Manoel Island Pontoon C
Cleaning Date	6/5/2022	6/5/2022	20/04/2022	26/04/2022	22/04/2022	22/04/2022	22/04/2022
Weight of Debris	0.00kg	0.00kg	1.9kg	0.00kg	2.4kg	6.6kg	5.9kg
Cleaning Date	12/5/2022	12/5/2022	22/04/2022	30/04/2022	26/04/2022	26/04/2022	26/04/2022
Weight of Debris	0.00kg	0.00kg	18.32kg	9.6kg	1.9kg	4.5kg	7.8kg
Cleaning Date			26/04/2022	2/5/2022	30/04/2022	30/04/2022	30/04/2022
Weight of Debris			10.10kg	3.9kg	0.00kg	0.00kg	3.7kg
Cleaning Date			30/04/2022	6/5/2022	2/5/2022	2/5/2022	2/5/2022
Weight of Debris			6.7kg	12.6kg	0.00kg	0.00kg	0.00kg
Cleaning Date			2/5/2022	12/5/2022	6/5/2022	6/5/2022	6/5/2022
Weight of Debris			4.2kg	23.2kg	0.00kg	0.00kg	3.7kg
Cleaning Date			6/5/2022		12/5/2022	12/5/2022	12/5/2022
Weight of Debris			9.1kg		4.6kg	1.5kg	2.7kg
Cleaning Date			12/5/2022				
Weight of Debris			8.3kg				

\*Current active sea-bins: Marina Di Valletta 1 & 2, Creek Marina (near black pearl & restaurant), Manoel Island Pontoon A, B & C.

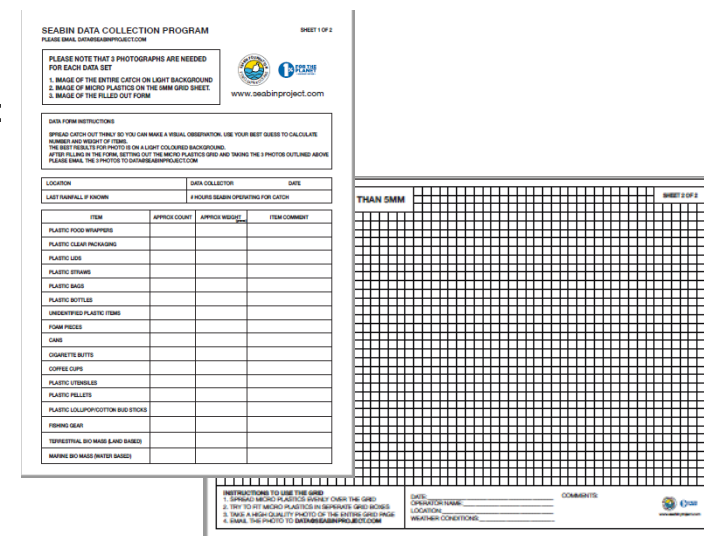






# □ Waste Characterisation Exercise

- An analysis report with images, weights, sizes and an approximate count of all the waste items collected from the active Seabin units will be provided.
- These weights will be recorded in a database and passed through Google Data Studio in order to visualize the data in a logical fashion.
- Unfortunately, due to the issues highlighted in sub-action 2, the waste characterisation exercise was halted for just a few months. We should receive the first characterisation data in **June**, when the quarterly report is submitted (covering April – June).
- The report should contain the following information:
  - Seabin collection of 3-month report
  - Images/photos of waste collected;
  - Seabin Data collection form
  - Provision of seabin data characterisation (raw and analysed data).



**SEABIN DATA COLLECTION PROGRAM**  
PLEASE EMAIL DATASEABINPROJECT.COM

PLEASE NOTE THAT 3 PHOTOGRAPHS ARE NEEDED FOR EACH DATA SET

1. IMAGE OF THE ENTIRE CATCH ON LIGHT BACKGROUND
2. IMAGE OF MICRO PLASTICS ON THE 5MM GRID SHEET
3. IMAGE OF THE FILLED OUT FORM

www.seabinproject.com

**DATA FORM INSTRUCTIONS**

APPROXIMATELY 100 ITEMS. BE SURE TO MAKE A VISUAL OBSERVATION. USE YOUR BEST JUDGMENT TO CALCULATE NUMBER AND WEIGHT OF ITEMS. THE BEST PRACTICE IS TO WEIGH THE PLASTIC ON A SCALED BACKGROUND. AFTER PLACING IN THE FORM, SETTING OUT THE MICRO PLASTICS GRID AND TAKING THE 3 PHOTOS OUTLINED ABOVE. PLEASE EMAIL THE PHOTOS TO DATASEABINPROJECT.COM

LOCATION: \_\_\_\_\_ DATE: \_\_\_\_\_

LAST TOWN/CITY: \_\_\_\_\_ # PEOPLE/SEABIN OPERATING FOR CATCH: \_\_\_\_\_

ITEM	APPROX COUNT	APPROX WEIGHT	ITEM COMMENT
PLASTIC FOOD WRAPPERS			
PLASTIC CLEAN PACKAGING			
PLASTIC LIDS			
PLASTIC STRAWS			
PLASTIC BAGS			
PLASTIC BOTTLES			
UNIDENTIFIED PLASTIC ITEMS			
FOAM PIECES			
CANS			
CIGARETTE BUTTS			
COFFEE CUPS			
PLASTIC UTENSILES			
PLASTIC PELLETS			
PLASTIC LULLAPPOCOTTON BAG STICKS			
FISHING GEAR			
TERRESTRIAL BIO MASS (LAND BASED)			
WADING BO MASS (WATER BASED)			

**INSTRUCTIONS TO USE THE GRID**

1. SPREAD MICRO PLASTICS CAREFULLY OVER THE GRID
2. TRY TO FIT MICRO PLASTICS IN SEPARATE GRID BOXES
3. TAKE A HIGH-QUALITY PHOTO OF THE ENTIRE GRID IMAGE
4. EMAIL THE PHOTO TO DATASEABINPROJECT.COM

DATE: \_\_\_\_\_ COMMENTS: \_\_\_\_\_

CREATOR NAME: \_\_\_\_\_ LOCATION: \_\_\_\_\_ WEATHER CONDITIONS: \_\_\_\_\_

THAN 5MM

SHEET 2 OF 2



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**Thank you!**