



PROJECT OVERVIEW

February 14th, 2020 Presented by: Mariana Mata Lara, Geonardo Ltd.

Preventive measures for averting the discarding of litter in the marine environment from the aquaculture industry















PROJECT PROFILE

EASME-EMFF funded project
Duration: 01/01/2019 – 31/12/2020
7 partners from 6 different countries
3 Learning Labs + Virtual LL



Mediterranean Sea



North Sea



Baltic Sea





Who?



GEONARDO • SME, Hungary

European Centre for Information on Marine Science and Technology • Non-profit organisation, Portugal



Flanders Marine Institute • Non-profit organisation, Belgium



sustainable projects GmbH • SME, Germany



Instituto Español de Oceanografía • Public body, Spain



Regional Fund for Science and Technology • Public body, Portugal



National Sea Centre in Boulognesur-Mer • Local public enterprise, France

Why AQUA-LIT?

Aquaculture activities **expand globally at** an annual rate of **5.8% since 2000¹** and it is a priority for the **EU to increase the aquaculture production** (4.5 million annual tons by 2030).

"Aquaculture is expected to be the sector that meets future demand for food, predicted to rise by 40 percent by 2030"

The State of World Fisheries and



Aquaculture 2018

¹ The State of World Fisheries and Aquaculture, 2018

"There are no global estimates of the amount of plastic waste generated by the fisheries and aquaculture sector."

FAO, technical paper 615, 2017



 Plastics account for most of debris in the Ocean and 20% of these come from oceanbased sources (like fishing and aquaculture activities).



Inland sources
Ocean-based sources





PRODUCTION







Why AQUA-LIT?

AQUA-LIT thus aims at **increasing the understanding**, **awareness and availability of solutions that tackle marine littering**, so the increase on aquaculture production doesn't imply an increase on marine littering.



How?







research



players



Existing tools



Marine Litter inventory

A **solid knowledge base on marine litter from aquaculture activities**. This database includes information on the main types of debris as well as the quantities in which they occur in the marine environment, identifying specific sources of marine littering coming from aquaculture activities.



Regional maps on aquaculture litter

Sea basin maps generated for visualising information on the geographic position of aquaculture facilities, in combination with the quantitative data of aquaculturerelated litter. These maps are provided for the three sea basins and give an initial indication of the source-sink story of aquaculture-related litter, which are a useful tool for the various stakeholders and policy makers.



MARINE LITTER INVENTORY

DOWNLOADBALE!

MARINE LITTER INVENTORY

[PLASTIC]

AQUA-LIT

The item inventory is a solid knowledge base on marine litter from aquaculture activities which is divided into general [A], specific [B] and other potential [C] items. Each item is characterized by an identification



Description: Sub surface longlines who smaller growth ropes together

Aquaculture species: Bivalves (oyster), brown seaweed Aquaculture type: Longline culture

Source: Niaounakis, 2017

https://aqua-lit.eu/marine-litter-inventory/menu

MARINE LITTER INVENTORY

ONLINE VERSION





General items Used by multiple offshore sectors



Total: 31

- Plastic: 22
- Wood: 3
- Metal: 3
- Textile: 2
- Rubber: 1



■ Plastic ■ Wood ■ Metal ■ Textile ■ Rubber



Specific items Uniquely linked to aquaculture activities



Total: 19

- Plastic: 18
- Wood: 1





Other potential items

Aquaculture items that are not reported in literature or databases



Total: 15

- Plastic: 8
- Metal: 6
- Concrete: 1









Literature research Aquaculture players Existing tools







Literature research Aquaculture players Existing tools

REGIONAL MAPS

- 1 Playa de Bolnuevo
- 2 Playa Isla Plana
- 3 Playa El Portús
- 4 Cala Cortina
- 5 Cala del Barco
- 6 Playa de Calbland
- 7 Spiaggia di Voltri
- 8 Spiaggia Sturla
- 9 Marina di Vecchiai
- 10 Castello Sonnino
- 11 Porto Sant'E
- 12 Pineto
- 13 Fotini 14 - Cohoini
- 14 Schoinias

Caboning

Legend

- Aquaculture facilities
- Seaweed
- Shellfish
- Finfish

The maps are a result of the collection of results from three different databases (OSPAR, HELCOM and Marine LitterWatch) where the information was recalculated per category to average number of **collected items per 100 meter beach**, and was later transformed into its visualization on three regional maps representing the **North Sea, Baltic Sea** and the **Mediterranean Sea** basins.

Aquaculture litter measuremen
 (average number of items per 1
 beach for the period 2013-2015



Vegalo (avouri Palain Fokai Varkiza





Literature research Aquaculture players Existing tools



Distribution of aquaculture facilities and aquaculture related beach litter in the Greater North Sea.

- Shellfish facilities and debris are mainly found in the English Channel and Southern North Sea
- ➔ Finfish facilities and debris are primarily located and recovered in the Northern North Sea, Skagerrak and Kattegat







Literature research Aquaculture players Existing tools







Literature research

Aquaculture players Existing tools





Distribution of aquaculture facilities and aquaculture related beach litter in the Baltic Sea.







Literature research Aquaculture players Existing tools

The monitored beaches in the North, Baltic and Mediterranean Sea and their reported percentage of aquaculture related litter.



Beach litter → 12.33%

Percentage of litter originating from aquaculture and/or fisheries

- Only absolute values available
- 0 [0, 5]
- 0]5, 10]
- |10, 15]
- > 15

Litter source

- Aquaculture/fisheries
- Aquaculture

Created: 2019-10-10

Projection: Europe Lambert Conformal Conic Source: GEBCO; ESN; OSPAR; HELCOM; Legambiente; Marine LitterWatch; Addamo et al., 2017; De Vrees, 2011; Merlino et al., 2018; Munari et al., 2015; Poeta et al., 2016; Prevenios et al., 2018; Riccato et al., 2016; Vlachogianni et al., 2017; Vlachogianni, 2019





Literature research

Aquaculture players Existing tools



Floating litter 🗲 11.25%

Projection: Europe Lambert Conformal Conic Source: GEBCO; ESRI; Di-Meglio et al, 2017; Vlachogianni et al., 2017





Literature research

Aquaculture players

Existing tools



Seafloor litter → 14.75%

Projection: Europe Lambert Conformal Conic Source: GEBC0; ESRI; Cau et al., 2017; Fortibuoni et al., 2019; Ioakeimidis et al., 2014; Melli et al., 2017; Riccato et al., 2016; Strafella et al., 2015; Vlachogianni et al., 2017





Literature research Aquaculture players

GLOBAL

UNEP

REGIONAL

OSPAR

COMMISSION

JSAIR

trategy for the

atic and Ionian Region

Existing tools

GERMANY Schloss Elmau

Available policy tools and measures



Overview of the global, regional, European and national action plans and documents that contain measures to reduce or avoid marine litter from the aquaculture sector





Examples



reduction

CleanSea – Summary of Marine Litter Policy Options

Use of alternative materials in aquaculture (e.g. cotton mussel socks).

OSPAR Commission – Marine Litter Regional Action Plan

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Monitoring & quantification

Identify the options to address key waste items from the fishing industry and aquaculture, which could contribute to marine litter, including deposit schemes, voluntary agreements and extended producer responsibility.



Removal & recycling

European Commission – DG Environment

Remove financial disincentives to bringing waste ashore including marine litter found at sea (litter retention). **Port reception facilities** play an important role and can be complemented with **national recycling and disposal systems** for items that require special processing such as nets and gear made from composite materials.

How?









Where?



Learning Labs







Mediterranean Sea North Sea

Baltic Sea



Learning Labs





North Sea

NORTH SEA | AQUA-LIT LEARNING LABS



Mediterranean Sea

EFFICI

 Baltic Sea

How can the aquaculture sector contribute to reducing marine litter in the North Sea?

Aspacelines is the feature growing fixed producing sector in Europe, with as securit expansion conof DN in the tart three detackets. With this growth rate, down is an expectatively for such a borring indumity to set as a spectrary on fighting markets (the set production growth and the maximum and location during and a set as processing on fighting and the set of the set

Therefore, the AUUA-LIT project is developing a toolbox of solations for preventing, reducing, removing and negoting are cryptic water that the separatives inductry would be able to implement.

NORTH SEA CONTEXT

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Vhat are the (technical) innovative solutions, usiness models and (policy) measures to prevent duce the loss, damage or discard of gear and ther equipment in the aquaculture sector?

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Learning Labs







Mediterranean Sea North Sea

Baltic Sea









What? A toolbox against marine litter addressing:





What? A toolbox against marine litter addressing:

Existing, upcoming and already implemented tools, case studies, best practices, a database and links between stakeholders in different regions.





How?





Furthermore

SCALING UP THE TIDE





For whom?

Everyone along the aquaculture chain



FIND OUT MORE!

www.aqua-lit.eu







