

Working with the Aquaculture sector to improve Marine Litter management.

Online Webinar • December 11th, 2020

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





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

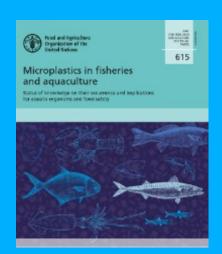


National Sea Centre in Boulognesur-Mer • Local public enterprise, France

Why AQUA-LIT?

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

FAO, technical paper 615, 2017



"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







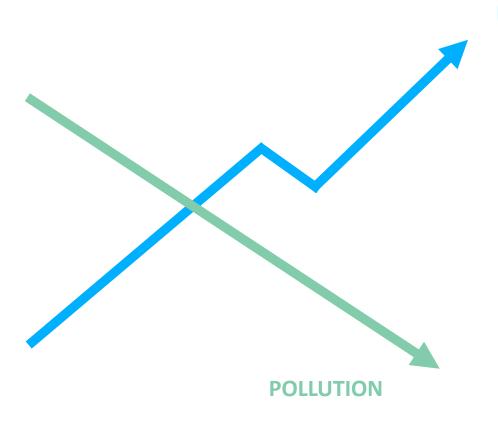
Why AQUA-LIT?

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.





Put simple



PRODUCTION



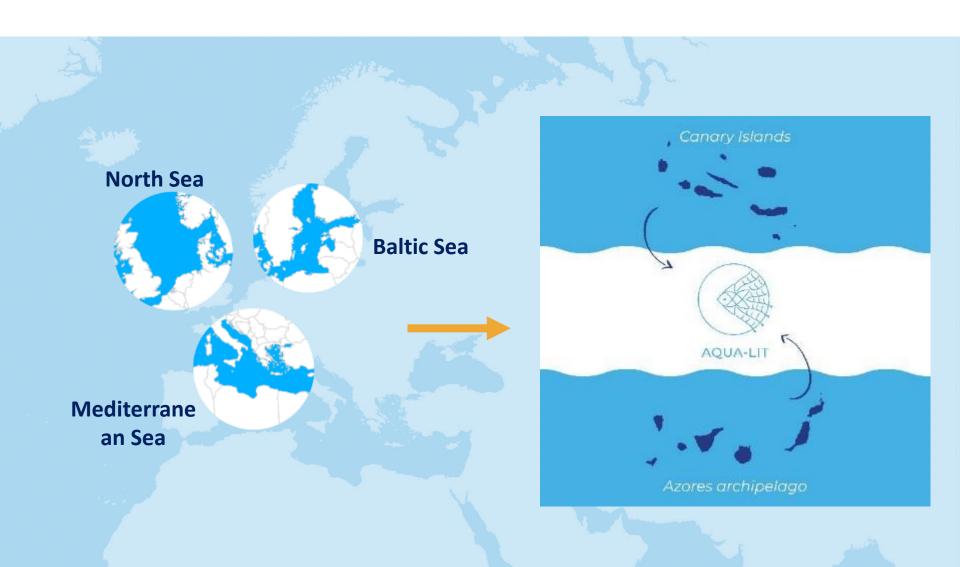


Where?





Where?



What?





Literature research



Aquaculture players



Existing tools

LEARNING LABS



Mediterranean Sea



North Sea



Baltic Sea

A TIDE AGAINST MARINE LITTER TOOLBOX



Prevention &



Monitoring &



Removal &

SCALING UP THE TIDE















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 aquaculture-related 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

[PLASTIC]



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

Tahitians[B11]

Item type
Structure

Material

Plastic

Description:

Plastic structure from oyster cultures

Aquaculture species: Bivalves (mussel)

Aquaculture type: Stake method / longline culture

Source: OSPAR beach litter guidelines nr 30









Item type
Structure

Material Plastic Heavy-duty longlines[B12]

Description:

Sub surface longlines who smaller growth ropes together

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

Source: Niaounakis, 2017

Synthetic ropes

Ropes

Material Plastic

Description:

Synthetic ropes (marily made of polysteel which is a blend of PP and PE, which has a 25 percent higher tensile strength than PP. Although, polyester and PA can be used, they are more expensive and more elathan polysteel)

Source: Lusher et al., 2017 and Stachowitsch, 2019

MARINE LITTER INVENTORY



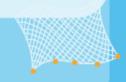
Item type Nets Material Plastic

General nets

Description:

Tangled nets/cord/rope and string + net repair pieces

Source: OSPAR beach litter quidelines nr 33



Plastic netting for cages

Item type Nets Material Plastic



Description:

Made of UV-stabilized polyethylene

Source: Nigounakis, 2017



Item type Material

Floats and buoys Plastic

Markers buoys



Description:

Made of moulded PE and filled with PU or PS for additional buoyancy

Source: OSPAR beach litter guidelines nr 37





MARINE LITTER INVENTORY









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





Strapping material









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Beach

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

Percentage of litter originating from aquaculture and/or fisheries







[0, 5]



[10, 15]



Litter source



☐ Aquaculture/fisheries

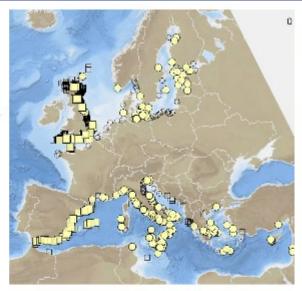
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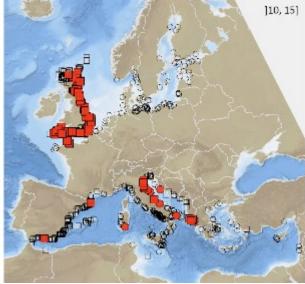
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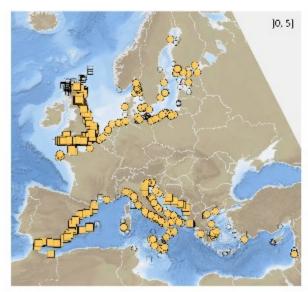
Source: GEBOO; ESRI; OSBAR; HELCOM; Logambiente: Marine LitterWatch; Addamo et al., 2017; De Vroes, 2011; MARNOBA; MCS UK; Morlino et al., 2018; MITECO; Munari et al., 2015; Poeta et al., 2016; Prevenios et al., 2018, Riccato et al., 2015, Vlachoglanni et al., 2017; Vlachoglanni, 2019.

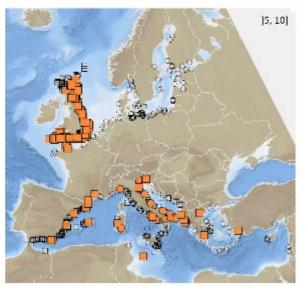


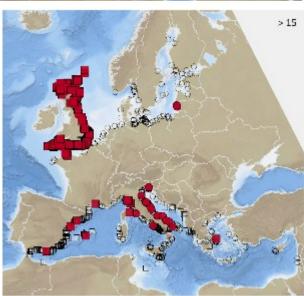














Seabed

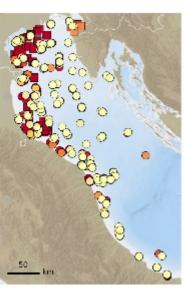
The locations of the seafloor surveys in the North, Baltic and Mediterranean Sea basins and their reported percentage of aquaculture related litter

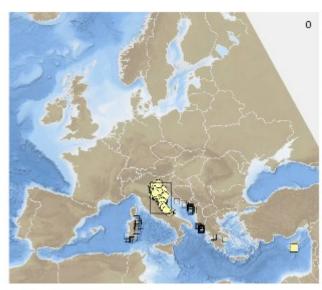
Percentage of litter originating from aquaculture and/or fisheries

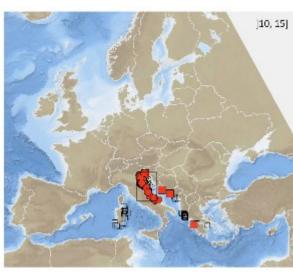
- 0 0
- [0, 5]
- [5, 10]
- [10, 15]
- > 15

Litter source

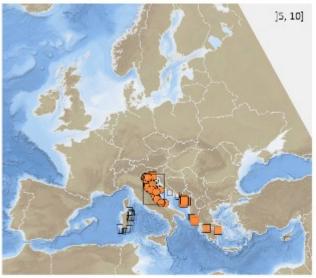
- Aquaculture
- □ Aquaculture/fisheries

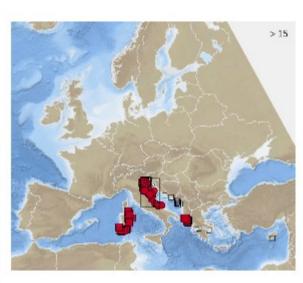








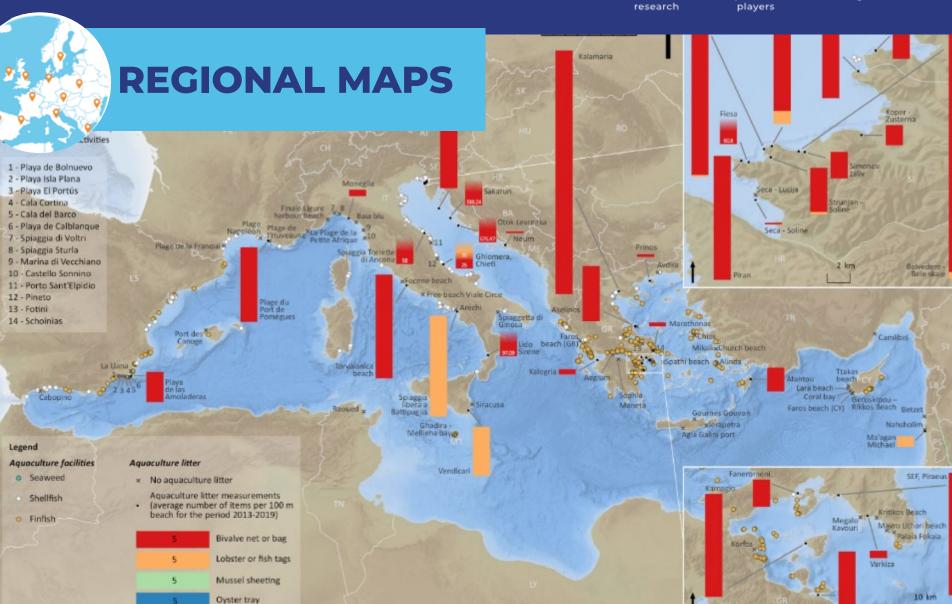














Other general Comments:

- Most of the litter is made by plastic (more
- than 90%)
 - Monitoring programs should be harmonized across regions
- and countries.
 - The maps show data gaps 'the different European basins





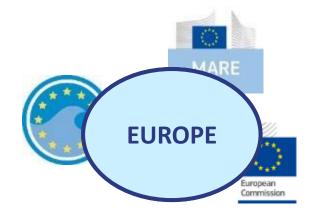


Available policy tools and measures





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







How?

STATE OF PLAY







Aquaculture players



Existing tools

LEARNING LABS



Mediterranean Sea



North Sea



Baltic Sea

A TIDE AGAINST MARINE LITTER TOOLBOX



Prevention &



Monitoring &



Removal &

SCALING UP THE TIDE









Policy for less litter

Funding a wave Trar of solutions AC

ve Transferability of AOUA-LIT tide

AQUA-LIT exploitation plan





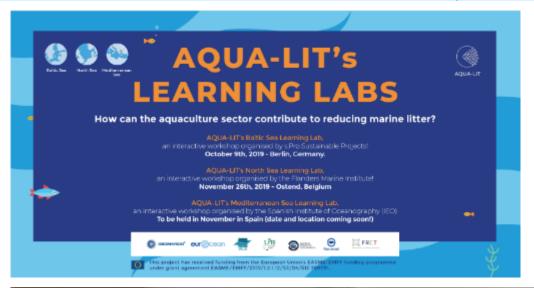




Mediterranean Sea

North Sea

Baltic Sea









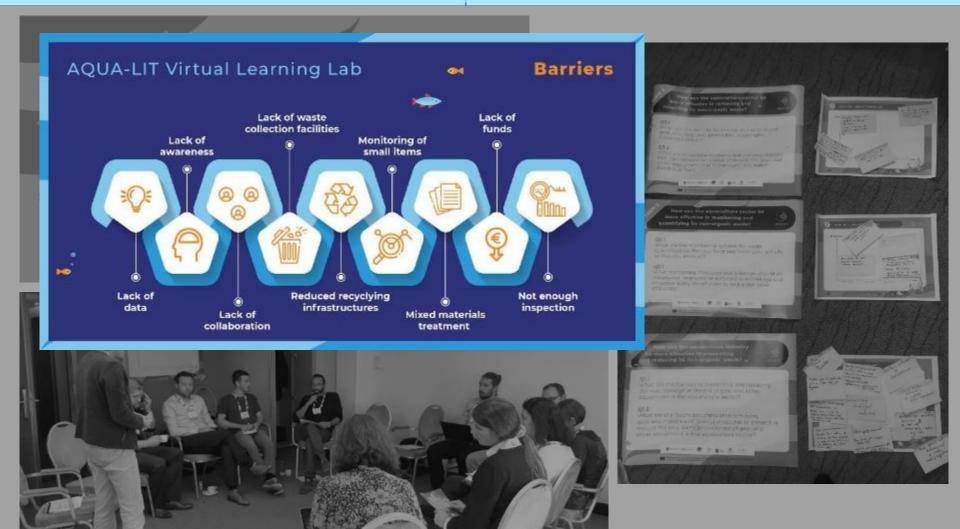




North Sea



Baltic Sea





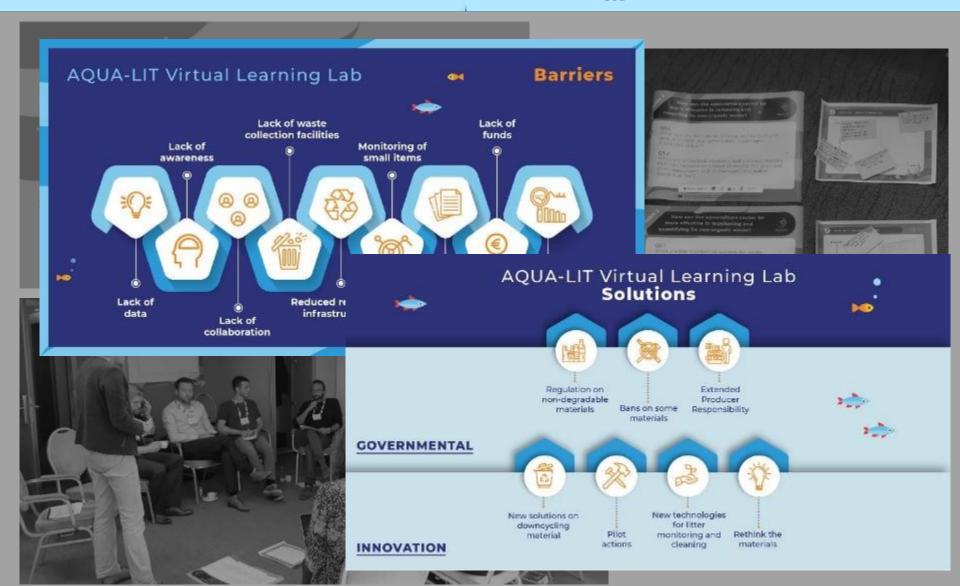




Mediterranean Sea

North Sea

Baltic Sea





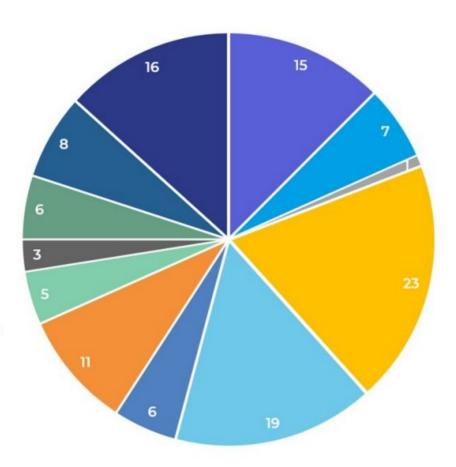
AQUA-LIT aquaculture stakeholders

Learning Labs & Interviews



- Aquaculture farmers (fish, shellfish, seaweed)
- Equipment manufacturers (e.g. of aquaculture gear)
- Engineering, system design and construction companies
- Academic research groups
- Professional clusters, associations and platform representatives
- NGOs

- Governance (including policy makers, implementers and port staff)
- Classification and certification bodies
- Companies processing waste (including waste recycling and incineration)
- Communicators (media, press, science communicators)
- Other (students, consultancy)
- Unknown







What?

A toolbox against marine litter addressing:



Prevention & Reduction



Monitoring & Quantification

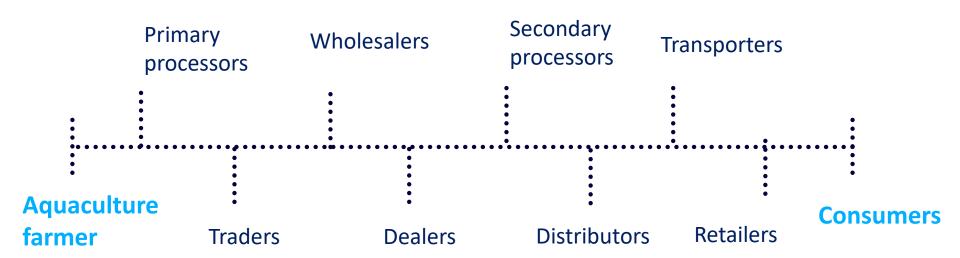


Removal & Recycling



For whom?

Everyone along the aquaculture chain





TIDE AGAINST MARINE LITTER TOOLBOX



SOLUTIONS & MEASURES

PORT FACILITIES

FUNDING OPPORTUNITIES

SUBMIT INFORMATION

MARINE LITTER
INVENTORY

POLICY
RECOMMENDATIONS

https://aqua-lit.eu/toolbox





For example,



Install professional collection systems like specialised motorboats, cleaning vessels or innovative passive catchers placed outside the farm (depending on currents).



Technical support

Relevant type of aquaculture:









Image: Dronaguatech

Related Barriers:

- More research is needed concerning the recycling options of used nets.
- Very little or no information exchange and dialogue about innovative solutions of waste management (i.e. common sourcing/funding/monitoring/best practice replication) and new materials with higher recyclability.
- Provisions of the SUPD are yet not implemented on national level.



"What a great way of starting the weekend!

It's beautiful, very very beautiful"



"The toolbox is impressive, I like how you placed the abbreviations for a quick recognition of terms. It really looks great"



"Waaaawwww! HOW COOL IS THAT. Very very very fantastic work!! Congrats to you all!"

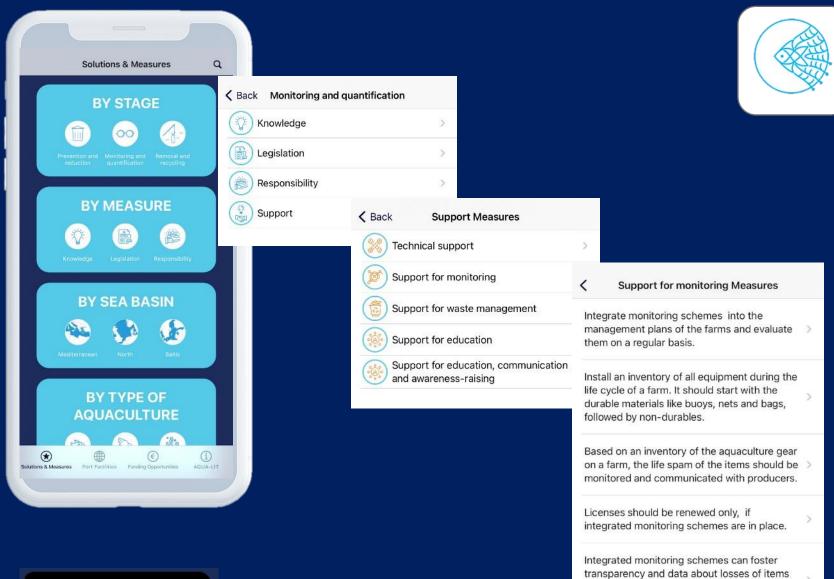


"Big congrats on this superb work! It looks great!"



"Congrats once more on the superb toolkit and the app - it looks great and I am sure it will be useful, both for the regulators and industry"





could be published regularly. This could improve the image of the sector in the public.



≺ Support for monitoring Measures



SOLUTION

Improve compatibility of datasets among countries or regions (for example, through the standardization of sampling methods and quality assurance of the data) and translating research activities into monitoring (e.g. for litter and noise).

MEASURE

Category

Support

Type

Support for monitoring

RELEVANT TYPE OF AQUACULTURE











AQUA-LIT



Support for monitoring Measures

RELEVANT TYPE OF AQUACULTURE



Fish



Shellfish



Seaweed

RELEVANT SEA BASIN



RELEVANT STAGE



Monitoring and quantification

RELATED BARRIERS

The (national/regional) monitoring programmes from the national governments are currently not sufficient as a knowledge base for the aquaculture sector.

Countries are focusing on their national apporaches instead of enhancing transboundary cooperation.

Weak political will. HELCOM does not have a monitoring programme on marine litter caused by aquaculture yet.











Solutions & Measures

AQUA-LIT

TIDE AGAINST MARINE LITTER TOOLBOX



SOLUTIONS & MEASURES

PORT FACILITIES

FUNDING OPPORTUNITIES

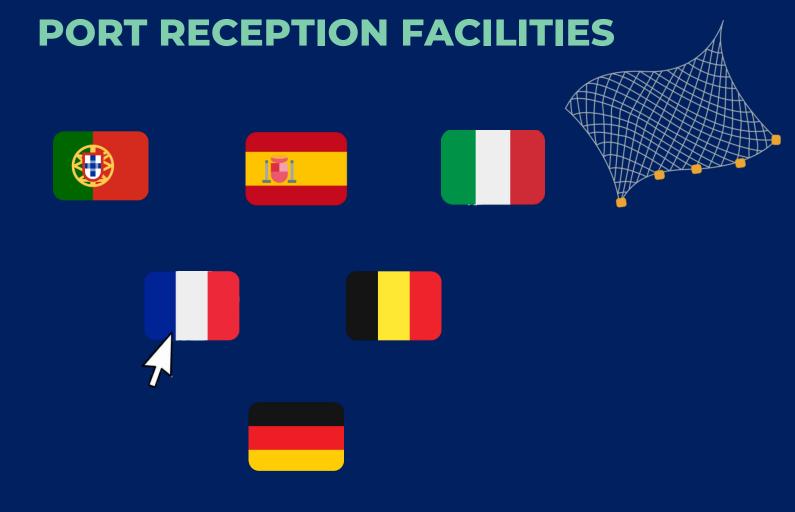
SUBMIT INFORMATION

MARINE LITTER INVENTORY

POLICY
RECOMMENDATIONS



TIDE AGAINST MARINE LITTER TOOLBOX





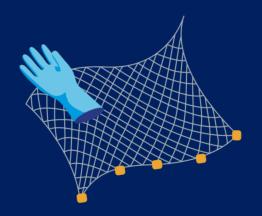


TIDE AGAINST MARINE LITTER TOOLBOX

PORT RECEPTION FACILITIES



- Boulogne-sur-mer
- o Calais
- Dunkerque
- o Rouen
- Le Havre
- Brest





TIDE AGAINST MARINE LITTER TOOLBOX



Dunkerque

Type of waste

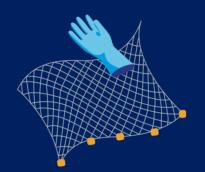
Domestic waste, food scraps, wood, paper, cardboard, glass, oil fliters, batteries, fluorecent tube, paint bucket, solvents, ashes, oil, polluted fuel, polluted waters

Is there a fee?

No information available

Is there any limitation (e.g. forbidden type of waste)

For liquid waste, the ship must get in touch with aprooved companies. The port doesn't directly manage liquid waste. For dangerous waste, the port must be advised. For medical waste, the ships must contact an aprooved company



Where can I find more information?

https://www.spd-calais.com/fr



TIDE AGAINST MARINE LITTER TOOLBOX



SOLUTIONS & MEASURES

PORT FACILITIES

FUNDING OPPORTUNITIES

SUBMIT INFORMATION

MARINE LITTER INVENTORY

POLICY
RECOMMENDATIONS



FUNDING OPPORTUNITIES



EU-level



National level



Grants & Investors



Trans-regional



TIDE AGAINST MARINE LITTER TOOLBOX

FUNDING OPPORTUNITIES

a Basin - Show all -			Geographical Scope - Show all -				
Acronym	Name	Country	Objective	Target	Key Themes	Sea-basin	Programm
BMBF FONA - Coordinated Programme	Federal Ministry of Education and Research (BMBF) - Research for Sustainable Development Coordinated Programme	Germany	The framework programme "Research for Sustainable Development" (FONA) implements the national sustainability strategy and is part of the Federal Government's Hightech Strategy. The strategy aims to ensure that Germany remains a technological leader, while promoting sustainability and climate protection.	researchers	monitoring	Baltic Sea	P
DFG Coordinated Programme	German Research Society - Coordinated Programme	Germany	The DFG offers funding opportunities for eligible research institutions in Germany for collaborative projects that combine research with the development of specialist or institutional core areas or structures.	researchers	marine litter movement	Baltic Sea	ø
BMBF	Federal Ministry of Education and Research (BMBF)	Germany	With the High-Tech Strategy 2025, the BMBF is creating the conditions for research and innovation to develop in an environment characterised by creativity, agility and openness. To this end, the funding programme is setting thematic priorities and focusing efforts on fields that show particular dynamism, have great potential for growth and employment, and exhibit a high need for innovative solutions to pressing issues like marine litter.	researchers, industry	properties of different plastic types	Baltic Sea	Ø
JBA	Federal Environmental Agency (UBA)	Germany	Tendering programme for environmental projects; one focus is on the achievement of GES under the MSFD related to marine litter, another is on circular economy and the reduction of marine litter.	researchers	monitoring, marine litter movement	Baltic Sea	P
BMEL	Federal Ministry of Food and Agriculture (BMEL)	Germany	The programme combines research, technologies, ecology and economy for new biotechnologies and an innovative bioeconomy with a focus on new products derived of renewable raw materials and the reduction of microplastics.	researchers	impact of plastic on marine environment	Baltic Sea	P
	Eundación Biodiversidad - Programa Pleamar	Spain	FEMP funding. Pleamar is intended to support between 2014 and 2020 around 200 projects that contribute to the protection of marine biodiversity, the practice of more sustainable fishing and aquaculture activities, the reduction of unwanted catches and the reinforcement of the management of the marine protected areas. The co-financing of around 70 consultancies on environmental matters and around 35 collaboration and networking projects between scientists and agents of the sector is also foreseen.	Consultancies, research centers and other agents	Fishing innovation, aquaculture innovation, fishing and aquaculture networking support, protected areas, litter and awareness	n.a.	Ð





Furthermore

Policy for less litter SCALING UP THE TIDE OS Funding a wave Transferability of AQUA-LIT of solutions AQUA-LIT tide exploitation plan



Policy recommendations

A set of **58 important**recommendations were developed to be considered by the aquaculture sector in the future. In addition, it was also possible to identify the eight main gaps to overcome the discarding of litter in the marine environment related to the aquaculture industry.

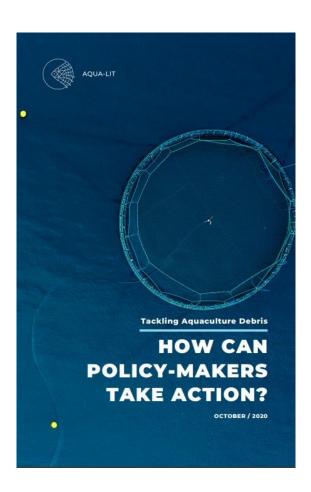
https://aqua-lit.eu/toolbox/action-plans-and-policy-recommendations



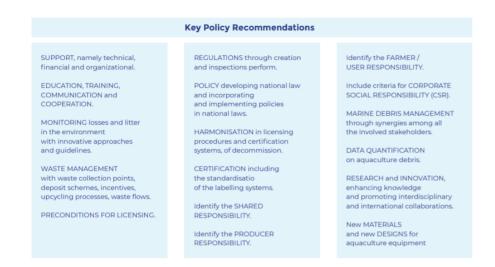




Policy recommendations



Also, a summarized version of the full policy recommendations report was made through an infographic in order to make the engagement and digestion of information easier.



https://aqua-lit.eu/toolbox/action-plans-and-policy-recommendations



Example Policy Recommendations



> FINANCIAL SUPPORT:

Increase financial support to incentive the development and implementation of sustainable innovative design of materials and equipment, waste collection services, and recycling initiativ



MONITORING SUPPORT:

Develop guidelines for monitoring programmes based on the Life Cycle Analysis of the materials and the infrastructures put in place.



SUPPORT WASTE MANAGEMENT

Establish waste collection points for aquaculture gear disposal in the port reception facilities and promote upcycling process and incentivise recycling and upcycling







SUPPORT FOR EDUCATION AND COLLABORATION

Increase communication on good practices, environmental awareness among stakeholders, and clean up initiatives.



> LICESING:

Include information on quality standards of materials, technical studies, and waste management plans in the license application processes



REGULATIONS:

Create a specific European/sectorial Single-Use-Plastic regulation and Extended Producer Responsibility scheme regulation for fisheries and aquaculture







> RESPONSIBILITY

Identify the role and responsibility of all the stakeholders involved in the waste management process and financial incentives to companies with good waste management



HARMONISATION:

Harmonise certification systems, including waste management plans



> KNOWLEDGE:

Increase knowledge related to the aquaculture marine debris and, to improve and increase the current marine debris data quantification and methodologies



> INNOVATION:

Incentivise research and implementation of new sustainable innovations



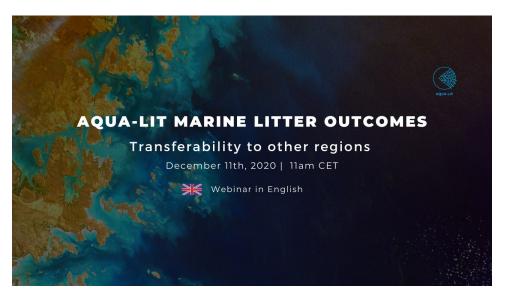


Furthermore

SCALING UP THE TIDE Policy for **AQUA-LIT** Transferability of Funding a wave less litter exploitation plan AQUA-LIT tide of solutions



Transferability



A series of webinars were created to pass our tools and resources useful for other regions that were not the focus of the project.

A webinar in <u>Spanish</u> was carried out targeting the Canary islands and its aquaculture context.



Another one was carried out in Portuguese for the Azores islands and continental Portugal.

And one last one in English for all other regions.



Furthermore

SCALING UP THE TIDE



Policy for less litter



of solutions



Funding a wave Transferability of AQUA-LIT tide





Exploitation plan

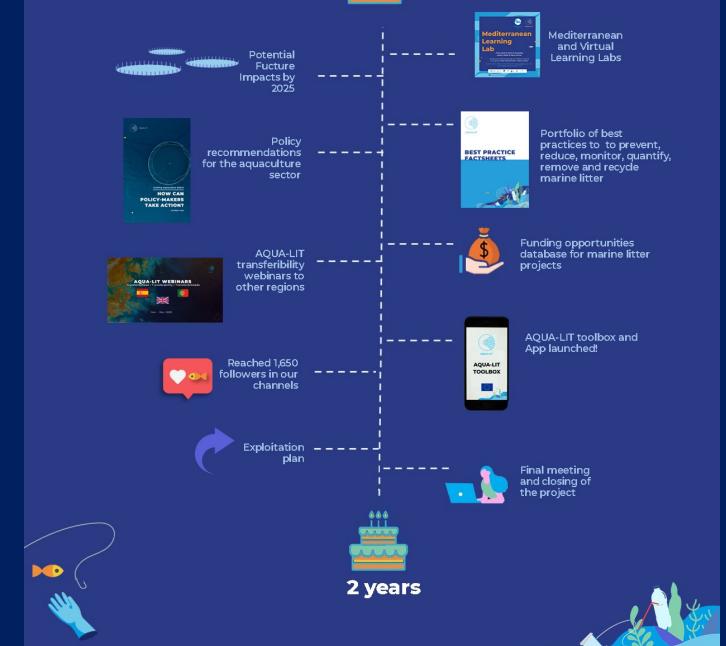
- Describes how five of the main results of AQUA-LIT can be exploited or further developed after the termination of the project. Being these results:
 - 1. Learning Lab methodology
 - the Toolbox "Tide Against Marine Litter"
 - 3. Review of Players at Play
 - 4. Compendium of Available Tools and Measures, and
 - 5. The Marine Litter Inventory)

The plan can be consulted at https://aqua-lit.eu/resources/deliverables



AQUA-LIT's summary of activities





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www.aqua-lit.eu



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