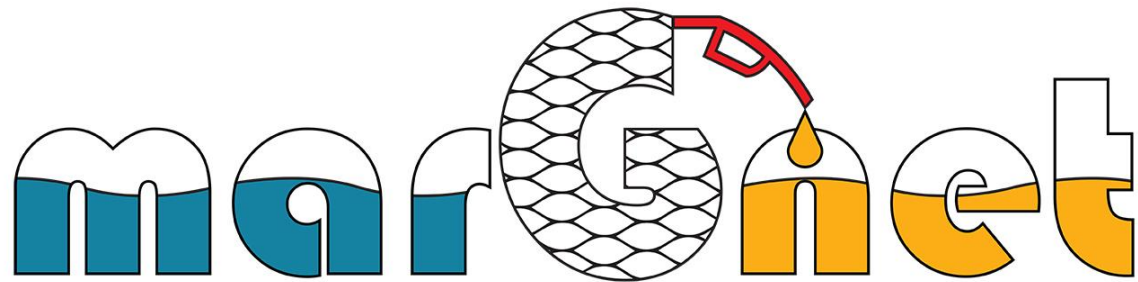


Mapping and recycling of marine litter and Ghost nets on the sea-floor



Co-funded by the European
Maritime and Fisheries Fund

EASME/EMFF/2017/1.2.1.12/S2/05/SI2.789314

Sustainable Blue Economy: Marine Litter

Jelena Basta, Blue World Institute, 2021

CONSORTIUM



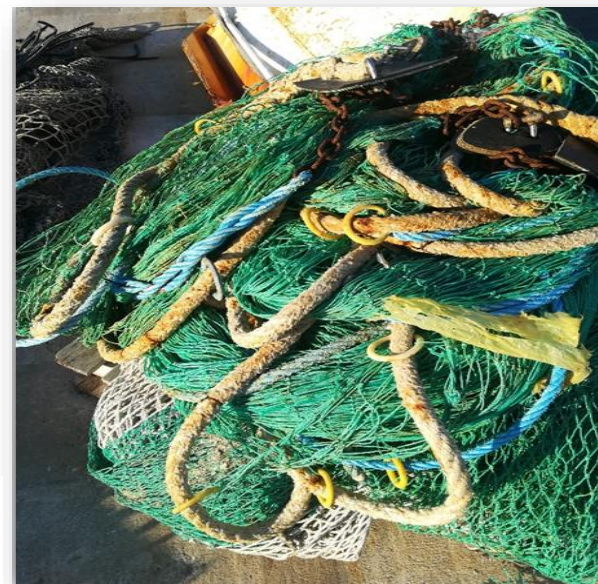
GENERAL OBJECTIVE

To set up and test multi-level solutions oriented to:

- monitor and map marine litter on the sea floor
- prevent, remove and recycle marine litter from sea-based sources

SPECIFIC OBJECTIVE

- To focus on marine litter generated by the fisheries and aquaculture activities – abandoned, accidentally lost and otherwise discarded fishing gears (ALDFG)



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PROJECT LOCATION

2 PILOT SITES:

- VENETO REGION (ITALY) – sandy seabed
- LOŠINJ ARCHIPELAGO (CROATIA) – rocky sea floor



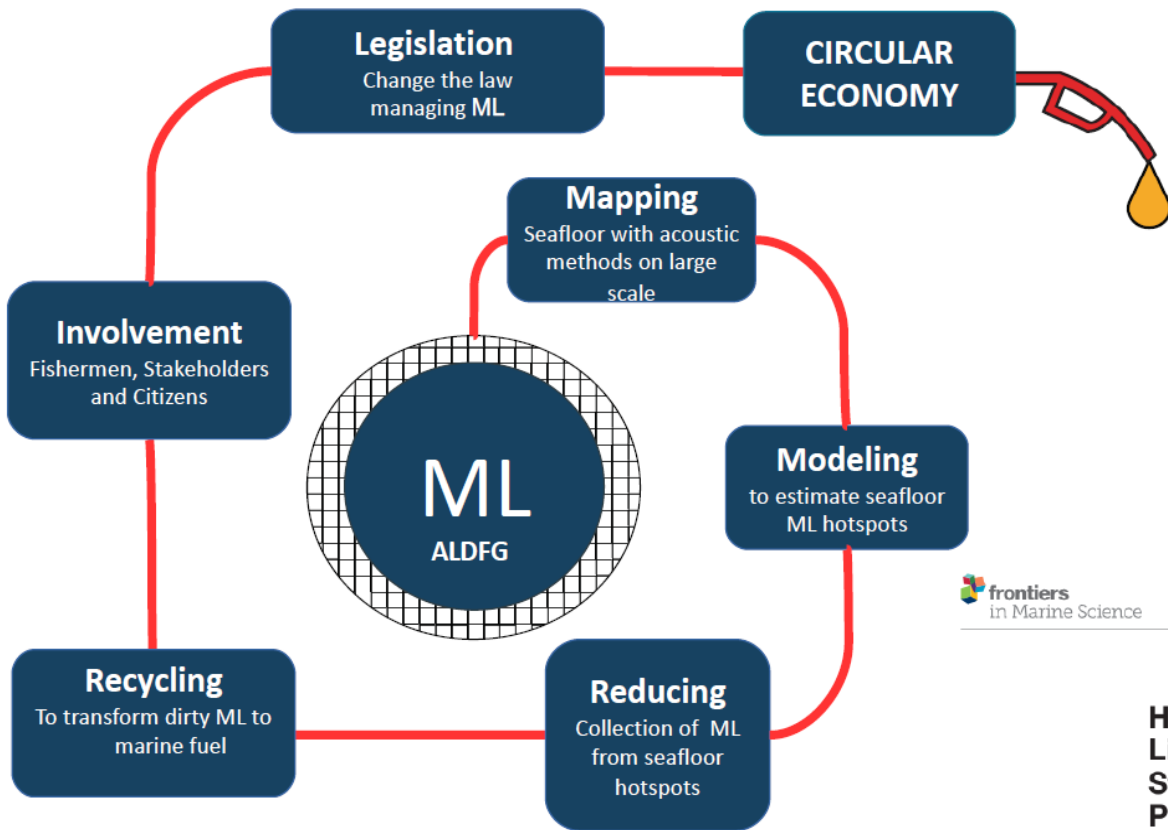
BUDGET AND DURATION

- Costs of the project action - 611.792 €
 - EU contribution granted - 488.575 € (80%)
- From the European Maritime and Fisheries Fund through EASME/CINEA
- Project start 01/01/2019
- Project end 31/12/2020



Co-funded by the European
Maritime and Fisheries Fund

AIMS OF THE PROJECT



frontiers
in Marine Science

REVIEW
published: 30 September 2020
doi: 10.3389/fmars.2020.505134



How to Deal With Seafloor Marine Litter: An Overview of the State-of-the-Art and Future Perspectives

Fantina Madricardo^{1}, Michol Ghezzi¹, Nicoletta Nesto¹, William Joseph Mc Kiver¹, Gian Claudio Faussoni², Riccardo Fiorin³, Federico Ricciato⁴, Peter Charles Mackelworth^{4,5}, Jelena Basta⁶, Francesca De Pascalis¹, Aleksandra Krusi¹, Antonio Petrizzo¹ and Vanessa Moschino¹*

¹ Istituto di Scienze Marine-Centro Nazionale delle Ricerche, Venice, Italy, ² SIMTCL, Srl, Turin, Italy, ³ Laguna Project s.r.l., Venice, Italy, ⁴ Blue World Institute of Marine Research and Conservation – BWI, Veli Losinj, Croatia, ⁵ Institute for Tourism, Zagreb, Croatia



RESULTS

MAPPING

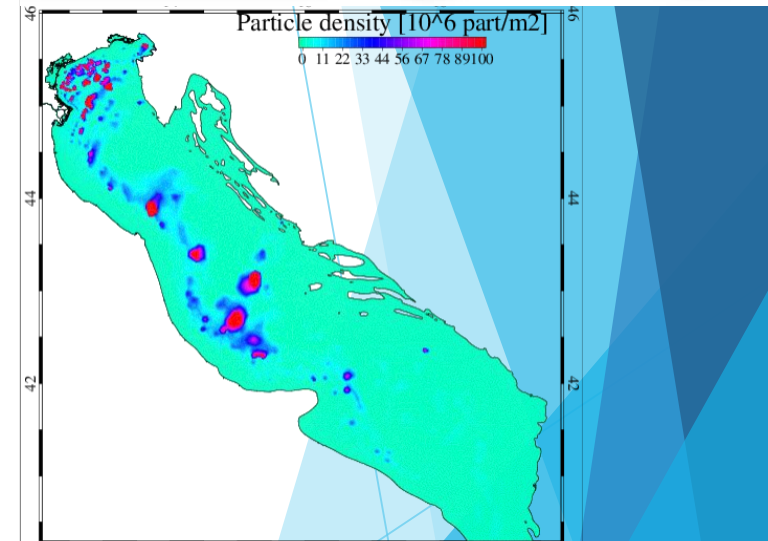
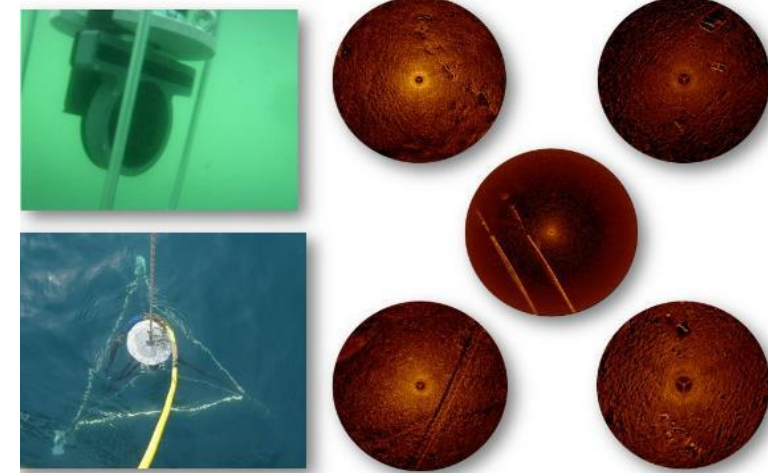
- Development of fast methodology to extensively map the sea-floor using acoustic methods and video
- 2 semiautomatic algorithms developed for automatic ML extractions (ROs)
- Total of 8 km² explored of soft and hard substrates in Italian and Croatian waters

MODELLING

- Development of a modelling tool to estimate the location of potential sea-floor ML hotspots
- Maps of ML hotspots in the Northern Adriatic Sea

REDUCING

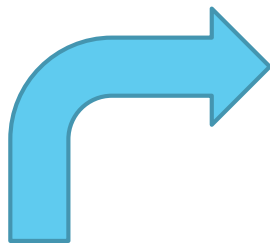
- 36 dives for groundthrouting and removal activities
- More than 100 kg of ML removed using sustainable removal protocols and correctly disposed



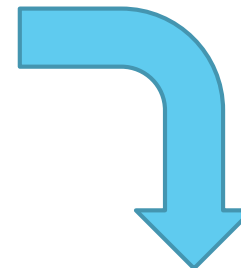
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RESULTS - marGnet RECYCLING

Turn ML into marine fuels



Use the fuel on fishing boats



Reduce dispersed ML



Co-funded by the European
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RESULTS - RECYCLING

- Over 250 Kg overall material processed during project period
- More than 100 Kg of actual ML from Venice Lagoon processed, including fishing nets
- Overall average products yield ML→fuels ~45/50 wt%
 - Remaining is split between flammable gas (LPG) 21 wt%; and solid residue (char) 29 wt%
 - Through a simple triage is possible to get more than 60% yield (by excluding not plastic materials)
- Products:
 - Light fuel: blend for gasoline (~20/25 wt%)
 - Low Sulfur Marine Gas Oil (MGO) DMA ISO8217 compliant (~50/60 wt%)
 - IFO180 (~5/8 wt%) RMF ISO8217 compliant
 - Water (~10 wt%)
- No dangerous emissions levels detected:
 - 8 substances monitored: C₅H₁₂, H₂S, HCl, SO₂, NH₃, HF, CO, HCN
- Approx. Avoidance of 0,75 ton CO₂eq/ton MGO*

*From third party survey



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RESULTS

INVOLVEMENT

- Fishermen involvement through questionnaires, infographic & video presentations, clean ups
- Involvement of citizens and stakeholders through public events, exhibitions, clean ups
- Dissemination of project at large scale events (ECOMONDO and FAIR)
- Agreement with the Municipality of Chioggia to test the prototype at the Fishmarket (Feb, 2021)

LEGISLATION

- Involvement of relevant political stakeholders to overcome legislative barriers
- Relevant decision makers participated at marGnet events for policy makers – Mid Term and Final events and demonstration events
- Huge media appearances will hopefully lead to legislative changes



Co-funded by the European Maritime and Fisheries Fund

Innovazione Gruppo di lavoro all'Arsenale

Dalla plastica recuperata in acqua nascerà un combustibile marino

RICERCA

VENEZIA Il mare e l'oceano, bello e pulito, che appaiono nei nostri sogni spesso in realtà nascondono una vera e propria discarica sui fondali. Perché ogni minuto, ogni giorno, l'equivalente di un camion pieno di plastica finisce nelle acque degli oceani, provocando la morte di oltre 700 specie di animali che sono vittime dell'inquinamento da plastica: tartarughe, uccelli, pesci, balene e delfini lo scambiano per cibo e muoiono per indigestione o soffocamento. Solo per fornire un dato, secondo Greenpeace con tutta la plastica presente ad oggi negli oceani potremmo fare 400 volte il giro della Terra. Parte da Venezia un progetto che durerà due anni e che si propone di mappare i fondali di una parte delle

ricercatori dell'Istituto di Scienze Marine afferente al Consiglio Nazionale della Ricerca (Cnr-Ismar) insieme a tre ricercatori croati, una delegazione di piccole medie imprese italiane ed esperti in riciclo e in comunicazione: disseminazione nel settore ittico che insieme porteranno avanti il progetto "marGnet", finanziato dal fondo Easme (European maritime and fisheries funds) per la sostenibilità della Blue Economy. Le azioni del progetto si muovono secondo una logica circolare: la mappatura delle plastiche al fondo, il loro recupero e il loro riciclo. Il progetto metterà a punto un sistema per mappare in modo estensivo e a costi ridotti le plastiche accumulate sui fondali in modo da facilitare la pianificazione dei loro recupero per ridurre l'inquinamento



ARSENALE Nella foto i ricercatori che stanno portando avanti l'innovativo progetto

RICERCATORI ED ESPERTI ITALIANI E CROATI AL LAVORO INSIEME PER TROVARE UNA SOLUZIONE

di rifiuti marini sul fondale. Questo permetterà la mappatura estensiva a costo contenuto della detriti al fondo e quindi permetterà una maggiore conoscenza del problema e di redigere uno studio più efficiente per il suo recupero sostenibile. A seguire, il la-

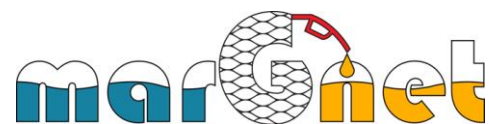
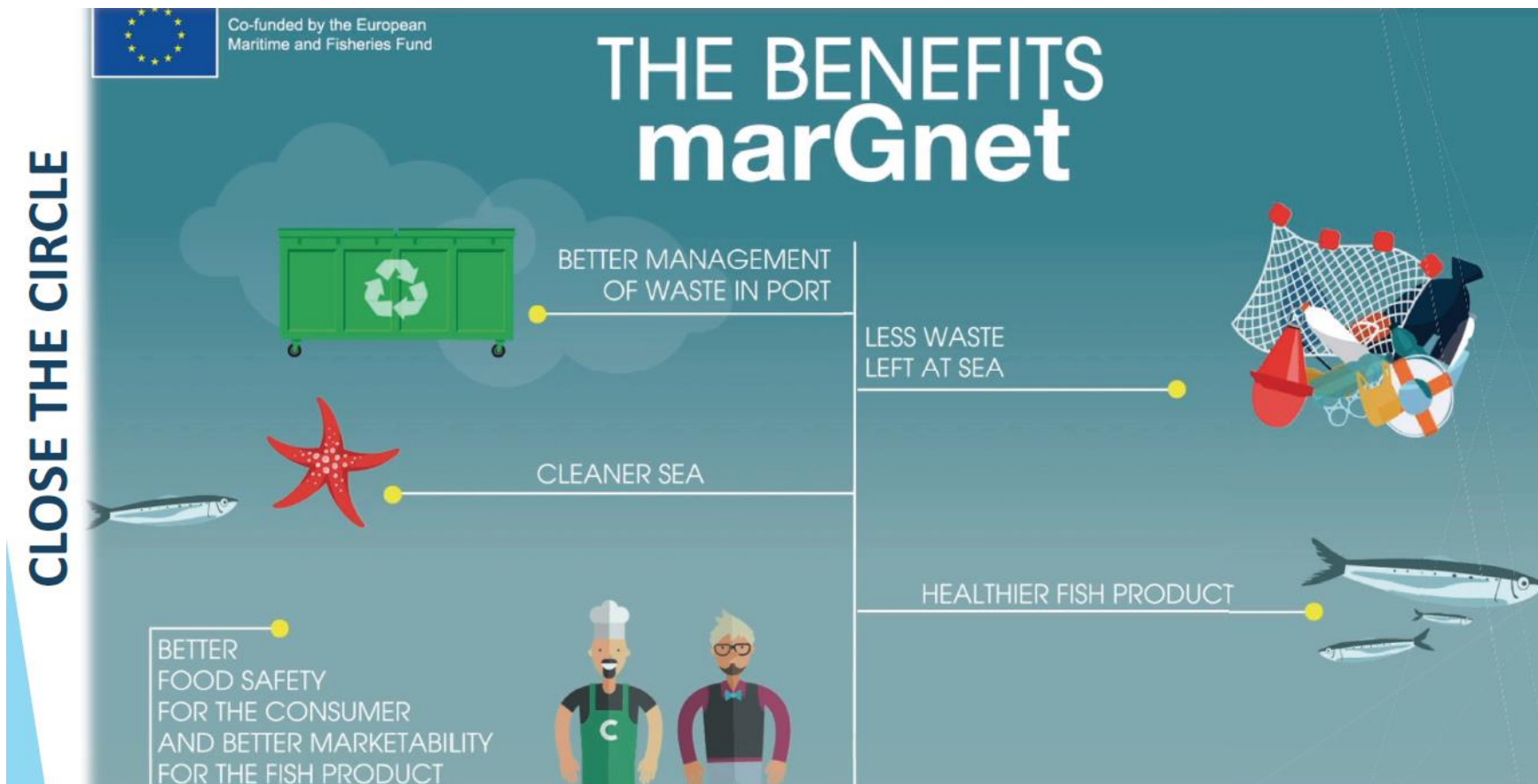


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Thank you!

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www.margnet.eu