

2014 - 2020 Interreg V-A
Italy - Croatia CBC Programme
Call for proposal 2019 Strategic

MARLESS (MARine Litter cross-border awareN ESS and innovation actions)

Priority Axis: Environment and cultural heritage; Specific objective: 3.3 - Improve the environmental quality conditions of the sea and coastal area by use of sustainable and innovative technologies and approaches

D 2.2.2 Web/digital tools and materials

2.2. Communication tools, materials and monitoring

WP2

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Activity:	2.2 Communication tools, materials and monitoring
WP Leader:	PP9 IRENA – ISTRIAN REGIONAL ENERGY AGENCY L.T.D.
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1. Introduction

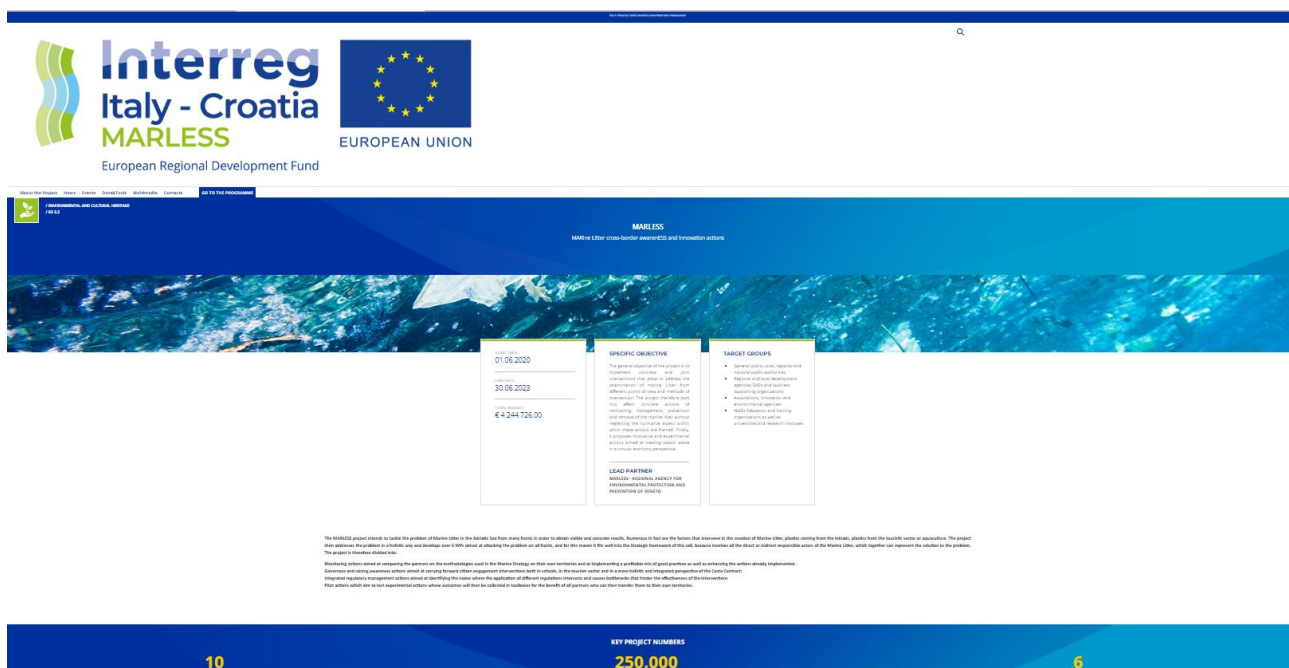
Overall Communication Strategy follows “greening” principles, communication tools and materials used are putting priority to electronic dissemination and foresee printing only if necessary. Accent has been put on web/digital tools and materials that will be used as one of the crucial means for the interaction with target groups.

Results produced:

- a) MARLESS project website; The format provided by the Programme has been constantly updated with produced project content
- b) project portrait – digital flyer in three languages;
- c) short video presenting the project;
- d) digital publications on relevant paper
- e) partners institutional websites were updated with projects information and linked to the project website;
- f) video-tutorials (e-learning pills);
- g) social media communication (Facebook and YouTube)

2. MARLESS project website

The format provided by the Programme has been constantly updated with produced project content. CM (PP9 IRENA) collected interesting news, photos, deliverables and other information's from all project partners and uploaded on the [MARLESS project website](#).



The screenshot displays the MARLESS project website interface. At the top, it features the logos for Interreg Italy - Croatia MARLESS and the European Union. Below the logos, there is a navigation menu and a search icon. The main content area is titled "MARLESS" and "MARLESS Liter cross-border awareness and innovation actions". It includes a large image of a beach with plastic waste in the water. Below the image, there are three columns of information:

- START DATE:** 01.06.2020
- END DATE:** 30.06.2023
- BUDGET:** €4,244,706.00

The **SPECIFIC OBJECTIVE** section states: "The general objective of the project is to improve awareness and understanding of the problem of marine litter and its impact on the environment. The project involves the development of a series of activities aimed at raising awareness of the problem of marine litter and its impact on the environment, and at promoting the adoption of measures to prevent and reduce marine litter." The **TARGET GROUPS** section lists: "General public, tourists, local authorities, businesses, schools, universities, NGOs, etc." The **LEAD PARTNER** is listed as "MARLESS COORDINATING AGENCY FOR ENVIRONMENTAL PROTECTION AND PROMOTION OF ENERGY".

At the bottom of the website, there is a blue bar with the following statistics:

- 10** (on the left)
- KTY PROJECT INDICATORS**
- 250.000** (in the center)
- 6** (on the right)

Figure 1. MARLESS project website

4. Short video presenting the project

1 short video presenting the project was developed by PP9 – IRENA and will be uploaded on project website and disseminated following project events. Videos is also available at [MARLESS YouTube page](#).

Video gives information's about; marine litter and presents project objectives, expected results and project partnership.



Figure 3. Short video presenting the MARLESS project

5. Digital publications on relevant paper

Publication issue at “MICRO 2022 ON-LINE ATLAS EDITION, PLASTIC POLLUTION FROM MACRO TO NANO” by PP7 Ruđer Bošković Institute.

Article: Assessment of microplastic particles ingested by *Mytilus galloprovincialis* along the Adriatic coast

Description: One of the most widespread pollutant and an emerging threat to marine ecosystem are microplastic particles (MPs) smaller than 5mm in size (Mercogliano et al., 2021). After MPs being ingested by an organism via filter feeding or predation they can cause changes in feeding and reproductive behavior but also have a toxic effect due to pollutants and other harmful compounds adsorbed on the surface of MPs (Bajt, 2021) which puts the ecosystem food chain at risk. MPs have been detected in mussels and fish around the world and many other marine organisms. Due to their broad geographical distribution and easy accessibility, mussels have been widely used for biomonitoring studies in the marine environment (Pizzurro et al., 2022). As filter feeding organisms, mussels process large volumes of water (7-8 L on average) and consequently accumulate and concentrate surrounding pollutants (Bajt, 2021). They provide a suitable amount of tissue for analysis and are easily collected (Pizzurro et al., 2022). For this research, mussels *Mytilus galloprovincialis*, were sampled in 6 different stations located in the Adriatic Sea in the framework of the INTERREG IT-HR MARLESS pilot project with a total of 176 analyzed mussels. Samples were digested with acid and extracted with saturated sodium chloride solution. The solution was then filtered on a filter which was examined under the stereomicroscope. MPs were categorized by shape, size and color. MPs are found in all the sampled regions. The results showed that the average frequency of MP occurrence (%F) is 80% with an average numerical abundance (%N) of 3 MP per mussel. Filaments are found to be the most prevalent group followed by plastic fragments while pellets were found only in one sample.

Author: Fornažar Marija, Stinga Perusco Victor, Baricevic Ana, Maric Pfannkuchen Daniela, Kogovsek Tjasa, Pfannkuchen Martin, Smodlaka Tankovic Mirta.



Figure 5. MICRO 2022 cover

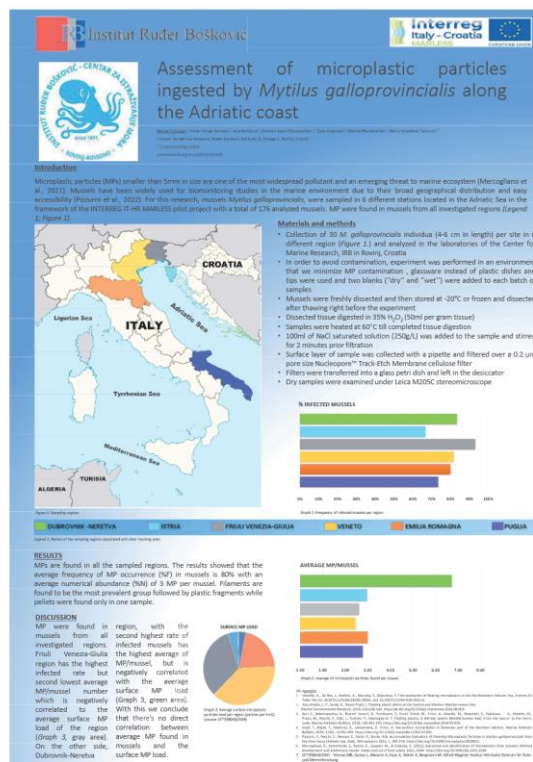


Figure 6. Assessment of microplastic particles ingested by *Mytilus galloprovincialis* along the Adriatic coast

6. Partners institutional websites

Partners institutional websites were updated with projects information and linked to the project website.

Project partners:

[LP - REGIONAL AGENCY FOR ENVIRONMENTAL PROTECTION AND PREVENTION OF VENETO](#)

[PP1 – THE MINISTRY OF ECONOMY AND SUSTAINABLE DEVELOPMENT](#)

[PP2 - AUTONOMOUS REGION FRIULI VENEZIA GIULIA](#)

[PP3 – REGIONAL DEVELOPMENT AGENCY DUBROVNIK-NERETVA COUNTY–DUNEA](#)

[PP4 - CETACEA FOUNDATION](#)

[PP5 – UNIVERSITY OF DUBROVNIK](#)

[PP6 – ALMA MATER STUDIORUM –UNIVERSITY OF BOLOGNA](#)

[PP7 –INSTITUT RUĐER BOŠKOVIĆ](#)

[PP9 – IRENA – ISTRIAN REGIONAL ENERGY AGENCY L.T.D.](#)

[PP10 - APULIA REGION](#)

[PP11 - REGION OF VENETO](#)



Projekt MARLESS (MARine Litter cross-border awareNESS and innovation actions) provodi konkretne i zajedničke intervencije usmjerene na rješavanje problema morskog otpada na Jadranskom moru s različitih gledišta i metode intervencije. Projekt će stoga implementirati razne akcije praćenja, upravljanja, prevencija i uklanjanje morskog otpada. Također, provesti će se kampanja za podizanje svijesti i aktivnosti obuke upućene različitim akterima (školama, hotelijerima, građanima itd.) te će se provesti niz eksperimentalnih pilot projekata koji će biti usmjereni na pronalaženje učinkovitih rješenja za uklanjanje i tretman morskog otpada.

MARLESS se financira kroz Program prekogranične suradnje Italija-Hrvatske 2014-2020. (engl. Cross Border Cooperation Programme Italy-Croatia 2014-2020.) te će se provoditi u periodu od 01.06.2020. do 31.12.2020. godine. Ukupni budžet projekta je 4.244.726,00 €, dok je IRENA-i Istarskoj Regionalnoj Energetskoj Agenciji odobreno 269.003,00 €, od čega 85% sredstava financira Program Italija-Hrvatska, a preostalih 15% se osigurava vlastitim sredstvima.

Osim IRENA-e, u projektu sudjeluje još 11 partnera iz više regija sjevernog i južnog Jadrana. Glavni partner je Regionalna agencija za zaštitu okoliša i prevenciju iz Veneta (Regional Agency For Environmental Protection and Prevention of Veneto), a u projektu još surađuju regije Veneto, Friuli Venezia Giulia, Apulia i Emilia-Romagna, Sveučilište u Bolonji te nevladina organizacija Cetacea Foundation s talijanske strane, dok hrvatske partnere čine Ministarstvo gospodarstva i održivog razvoja, Centar za istraživanje mora Instituta Ruđer Bošković, Sveučilište u Dubrovniku i Regionalna razvojna agencija Dubrovačko-neretvanske županije te Istarska županija – Odjel za održivi razvoj koji ima ulogu pridruženog partnera. Navedeni hrvatski i talijanski partneri će zajedno surađivati kako bi definirali projekte strateške važnosti za obje zemlje, među kojima je otpad u moru prepoznat kao jedan od ključnih problema.

IRENA, koja u projektu ima ulogu voditelja projektnih komunikacijskih aktivnosti, će kroz provedbu medijske kampanje i organizaciju raznih regionalnih i prekograničnih događaja usmjeriti na povećanju svijesti o problematici otpada u moru i golemim rizicima koje ono donosi. Također, IRENA će u sklopu projekta raditi edukativnim materijalima, provoditi edukacije i akcije čišćenja s Eko-školama, provoditi akcije za senzibiliziranje turističkog sektora kroz s aktivnim uključivanjem koncesionara plaža u projektne aktivnosti i izraditi skicu Piana za gospodarenje otpadom u rijekama.

Više informacija na : www.italy-croatia.eu/marless

MARLESS MARine Litter cross-border awareNESS and innovation actions
CAPonLITTER - Capitalising good coastal practices and improving policies to prevent marine litter
CITY MINDED - City Monitoring and Integrated Design for Decarbonisation
COASTENERGY - Blue Energy in ports and coastal urban areas
Joint_SECAP - Joint strategies for Climate Change Adaptation in coastal areas
HAPPEN - Holistic Approach and Platform for the deep renovation of the med residential built Environment
iDEAL - DEcision support for Adaptation pLan
FIRECE - Innovative Financial Instruments for industry low carbon energy transition in Central Europe
SUPPORT - Local Governments in Low Carbon Strategies
ENERJ - Joint Actions for Energy Efficiency
MAESTRALE
E-RESPLAN - Innovative Educational Tools for Energy Planning
EH-CMap - Advanced Training on Energy Efficiency in Historic Heritage
TERRE - TERritory, enERgy & Employment
LEGEND - Low Enthalpy Geothermal ENergy Demonstration cases for Energy Efficient building in Adriatic area

Figure 7. Example of projects information on institutional website (PP9 – IRENA)

7. Video-tutorials e-learning pills for replication of the actions and good practices

During project duration 7 video-tutorials e-learning pills for replication of the actions and good practices were developed between project partners. All materials are available from [project website](#) and [MARLESS YouTube channel](#).

1) LP – ARPA Veneto prepared one video regarding [monitoring of sea water quality](#).



Figure 8. Monitoring of water samples (LP – ARPAV)

2) 3) 4) PP6 – ALMA MATER STUDIORUM –UNIVERSITY OF BOLOGNA in cooperation with PP4 - CETACEA FOUNDATION prepared three Video-tutorials e-learning pills related to WP6 pilot actions; 2) [Water drone for microplastic collection](#), 3) [Pyrolysis actions](#) and 4) [Fishing for litter action](#).



Figure 9. Water drone for plastic collection (PP6 – University of Bologna)

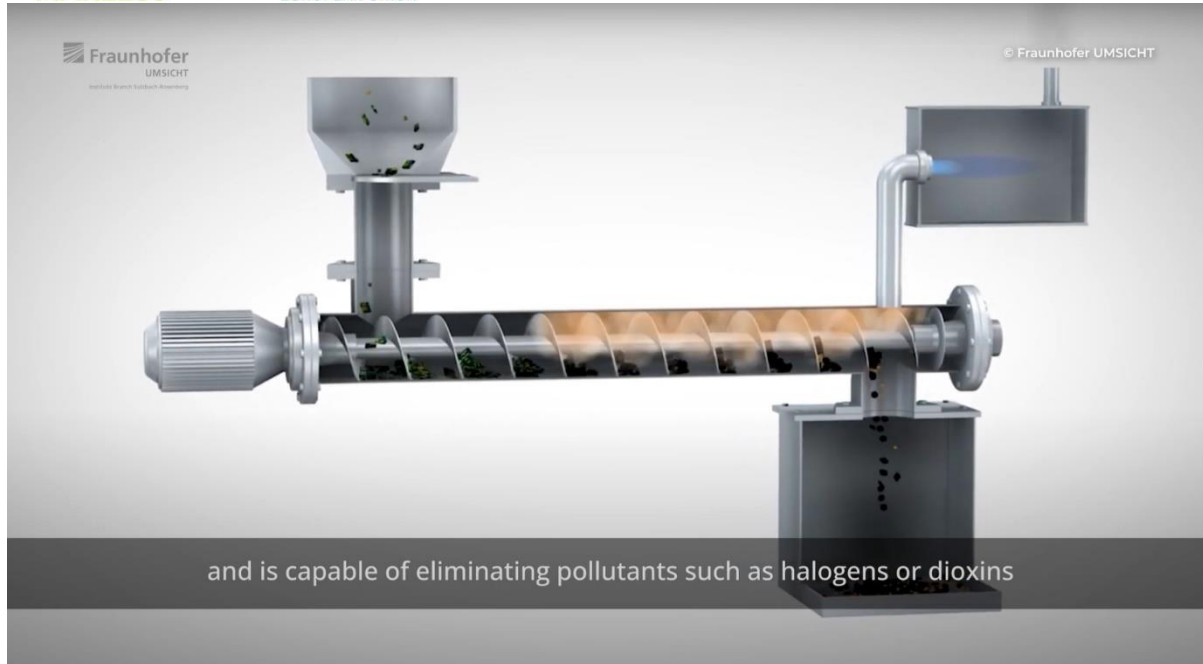


Figure 10. Pyrolysis (PP6 – University of Bologna)



Figure 11. Fishing for litter action (PP4 – CETACEA FOUNDATION)

5) PP5 – UNIVERSITY OF DUBROVNIK prepared Video-tutorials e-learning pill related to their robotic pilot – [Collection of surface marine litter using Unmanned Surface Vehicle \(USVs\)](#).



Figure 11. Collection of surface marine litter using Unmanned Surface Vehicle (USVs)
(PP5 – University of Dubrovnik)

6) PP2 - AUTONOMOUS REGION FRIULI VENEZIA GIULIA prepared [Interactive guide for insiders related to marine litter issue.](#)



Figure 12. Interactive guide for insiders related to marine litter issue.
(PP2 – FVG)

7) PP9 IRENA prepared video materials related to [info days \(WP2\)](#), [educational activities, clean up actions \(WP4\)](#) and [underwater clean-up actions and monitoring of marine litter \(WP3\)](#).



Figure 13. Video-tutorials e-learning pills – educational activities, clean up actions and monitoring (PP9 – IRENA)

8. Social media communication (Facebook and YouTube)

Social media communication was done through [MARLESS Facebook](#) and [MARLESS YouTube Channel](#). Pages were regularly uploaded with new interesting content; news related to ML, photos and galleries, info from project events, e-pills, interviews, videos, web documents, etc.

Social pages were moderated by PP9 – IRENA with inputs from all other project partners.

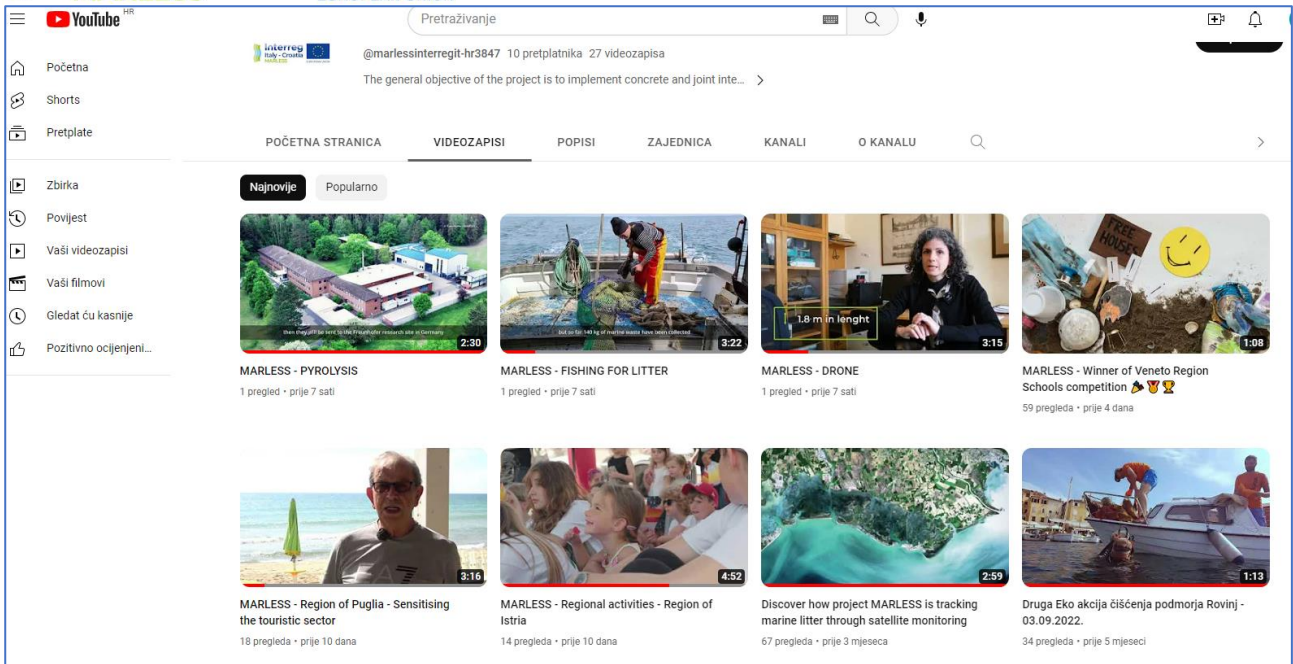


Figure 14. MARLESS YouTube Chanell preview