

ML-REPAIR APP

WP4 – Activity 4.2 - Fishing for litter catches: composition and quantities definition

DELIVERABLE D4.2.2

Partner in Charge: MARE Società Cooperativa

Partners involved: All

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ML-Repair Reducing and preventing, an integrated Approach to Marine Litter Management in the Adriatic Sea – Axis 3 – SO 3.3

European Regional Development Fund

www.italy-croatia.eu



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1 INTRODUCTION

The ML-REPAIR APP was developed by PP2 (M.A.R.E.) with the contribution of PP1 (ISPRA) and PP4 (IZOR) to ensure easy data collection onboard by fishermen of the marine litter accidentally caught in the nets (weight of different marine litter categories, coordinates of the catches etc.) and to provide the possibility to take georeferenced photographs of marine litter.

Some of the fishing vessels participating in the FFL activities were provided with tablets to test the use of the APP. The tablets, through their in-build GPS, allowed the fishermen to collect marine litter coordinates that could be used as a reference to determine the main areas of marine litter accumulation.

Both Croatian and Italian fishing vessels that tested the APP downloaded it on the tablets provided by the project. To use the app, it is necessary to register by entering the registration number and the name of the vessel. The APP is controlled by a back-office page that allows the manager to check the users of the APP, view, delete or modify reports sent by fishing vessels, view collected data, view the photographs taken and create graphs based on the amount of marine litter collected.

2 ML-REPAIR APP development and design

Between January and June 2018, PP2 started the procedure to find a company capable of developing the APP. Three quotes were obtained from three different companies, and the best one was chosen, provided by the company Èdita srl.

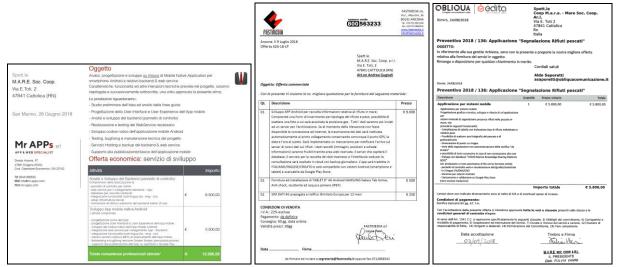


Fig. 1: The three quotes received by PP2 for the development of the ML-REPAIR APP



Successively, the APP design and creation started. PP2 closely collaborated with Èdita srl. (by email and phone) in order to clarify the aim and the characteristics of the APP. On 11th of September 2018, PP2 met Èdita srl company to define the last details of the APP.

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3	Mauro Giorgi		Edita s.r.l.	fim
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Fig. 2: Signature sheet of the first meeting with Èdita srl (11 September 2018)

Based on the information received, Èdita srl started to create the APP, sending periodically the updates to PP2 that monitored the APP development step by step. Èdita srl attended the second project meeting held in Cattolica on 22nd of November 2018 in order to explain the APP functioning and conception to project partners and receive feedback. On December 21st, the APP prototype was complete and ready to be downloaded and tested.

In the following months, the APP was installed on fishermen's tablets and illustrated to them in order to test its functioning. In Cattolica, the APP was presented to fishermen on 11th January 2019, while in Cesenatico it was presented on 2nd of March 2019.

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Fig.4: Signature sheets of the meetings with fishermen in Cattolica and Cesenatico for the APP presentation



The APP was tested on some fishing vessels for a few months in Italy and Croatia and all critical issues were communicated by fishermen to PP2 and the other partners involved in fishing for litter activities (PP1 and PP4). Then, PP2 asked to Èdita srl to modify the APP in order to fix the bugs that emerged during the testing phase. Èdita srl evaluated the changes requested and updated the quote accordingly. PP2 accepted the new quote after consultation with the project leader.

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segnalationi			
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penigiane durante la scatto della fota.)			
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03/09/2018		aure 10	<u></u>

Fig.5: cost estimate for the update of the APP provided by Èdita srl

After this final changes, the new version of the APP was presented by Èdita srl to PP2 in a meeting held in the Èdita srl headquarter on 29th of August 2019.

NAME AND SUBNAME (NOME & CONGNOME) ENTITY and POSITION (IMPRESA & POSIZIONE LAVORATIVA) SIGNATURE (FIRMA) Andrea Gugnati M.A.R.E. Soc. Coop. ar.L. Andrea Sugnati Andrea Gugnati M.A.R.E. Soc. Coop. ar.L. Andrea Sugnati Mauro Giorgi Èdita sr.L. Andrea Sugnation Scation of the meeting Date	Mana	etto ML-REPAIR "R gement in the Adriatic S 042541 - CUP H71118000	iea			proach to Marine Litter
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Fig.5: Signature sheet of the meeting with Èdita srl



3 ML-REPAIR APP INSTRUCTIONS



<u>Download</u> the ML-Repair APP from Google Play or Google Store (Android)

In this image you can see the access page: if you have an account you can insert the vessel code and password to sign in (*Accedi*). Conversely, you need to register a vessel (*Registrati*).

After signing in, you will be directed to the home page:

	NUOVA SEGNALAZION	E
Inserisci immagini		
	Aggiungi immagir	ne
Aggiungi rifiuti		
Seleziona tipo di rifiuto		KG
	Aggiungi rifiuto	
Note		
	Invia	
+ NUOVA SEGNALAZIONE	SEGNALAZIONI	ACCOUNT

In this page you can:

- Add or take a photo (*Aggiungi immagine*)
- Choose a marine litter category (*Seleziona tipo di rifiuto*)
- Add new marine litter categories (Aggiungi rifiuto)

In the lower part of the APP's page, there is a panel that allows to:

- Insert a new report (*Nuova segnalazione*)
- Look at your submitted or pending reports (*Segnalazioni*)
- Access to your account details (Account)



	NUOVA SEGNALAZIONE	
	Aggiungi immagine	
Aggiungi rifiuti Seleziona tipo di rifiuto	Scatta una foto Carica foto dalla libreria	
Note	Canca foto dalla noteria	
	Invia	
◆ NUOVA SEGNALAZIONE	E SEGNALAZION	Account

When you add a photo (*Aggiungi immagine*) you can either take a new photo (*Scatta una foto*) or upload a photo from the library (*Carica foto dalla libreria*)

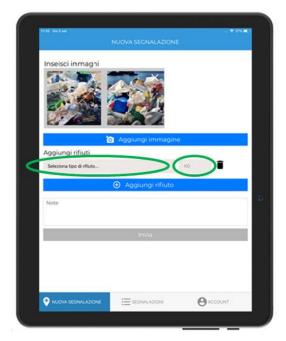


Take a photo



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You can insert more than one photo for each sighting, and you can delete a picture (X)



You can insert the type (*Seleziona tipo di rifiuto*) and the weight (*KG*) of marine litter in these two boxes. When you click in the text box with the sentence "selected type of marine litter" (*Seleziona tipo di rifiuto*) a predefined list will appear



1:54 Gio 5 set	
Back	Select One
Seleziona tipo di rifiuto	
Calze per mitili	
Rete da pesca	
Plastica	
Metallo	
Vetro	
Gomma	
Legno	
Altro (specificare nelle ne	ote della segnalazione)

You can choose a marine litter category among some predefined categories that were previously agreed with fishermen, or conversely add the category "Other" (*Altro (specificare nelle note della segnalazione)*) if you find something that is not present in the list. By selecting "other", you have to write the type of marine litter in the notes.



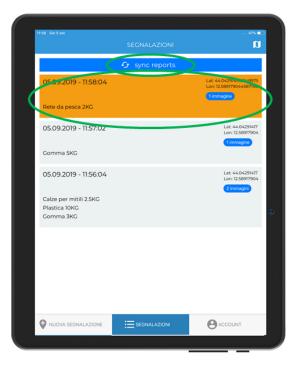
More than one category of marine litter can be entered for each sighting. By clicking on the icon "rubbish bin" you can delete a marine litter category that was wrongly inserted.

After inserting all waste categories and entered the weight for each category, you can send the report



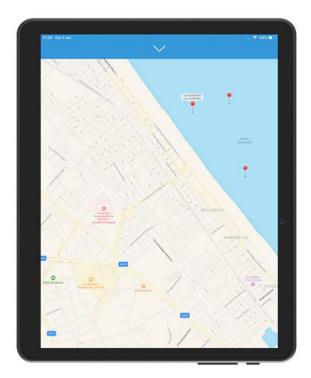
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Plastica		10	
Gomma		3	
•	Aggiungi rifi	uto	
Avvistato tronco pericoloso			
	Invia		

At this point, after clicking "send" (*Invia*), if you have a sim card into the tablet or if you have a wifi connection, the report will be immediately sent to the server. Otherwise, the report will be saved in the "pending" section. By selecting the "report" icon in the panel at the bottom of the page (*Segnalazioni*) you can access all your reports.

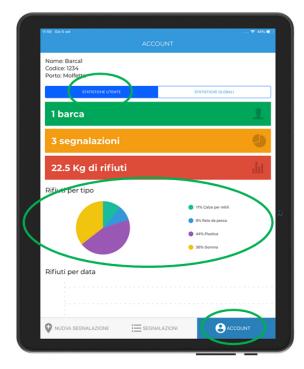


This is the page where all sightings are recorded. The reports that were not already sent are highlighted in yellow. They will be sent to the server once you connect to wifi or a telephone net (if you have a sim card) by clicking "sync reports".





Reports can be viewed on Google Maps directly from the tablet/smartphone.



In the Account page, you can view the data collected by the boat that is using the APP (*Statistiche utente*)



11:59 Gio 5 set	
ACCOUN	
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19 segnalazioni	e
62 Kg di rifiuti	di
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Rifiuti per data	
40	
VUOVA SEGNALAZIONE	

But also the data related to all other registered fishing vessels (*Statistiche globali*)

4 ML-REPAIR APP DATA

The reports sent by the fishing vessels over the 9 months were all collected on a specific back office web page that manages the reports, giving the possibility, thanks to filters, to have immediate and specific data relating to the individual vessel, to the individual port or to the total of participating vessels, regardless of the port (Fig. 6)

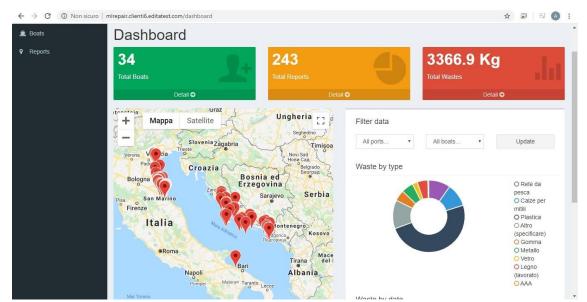


Fig. 6: Back office home page. In the upper part of the page are indicated the number of the vessels subscribed, the number of reports received and the kg of marine litter collected. On the map you can see the icons positioned in the points where the data were send. On the right of the map the graphic with the percentage of the type of marine litter collected (the black part **plus** the blue one are plastic, corresponding to 60% of the fished marine litter).



During the 9 months of testing, 17 fishing vessels belonging to the REPAIR project have registered on the APP. More than 200 reports were sent through the APP and data corresponding to approximately 2000 kg of marine litters were collected.

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Reports			
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	Message		
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	Detail		Qta (kg)
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	Metallo	Ŧ	2
	Calze per mitili	Ŧ	2
	Altro (specificare)	Ŧ	3

Fig. 7: Example of a report received on the back office page

The APP will remain available for future projects on the marine litter and will be downloadable for free on google play store by all those who wish to use it or even just view it, at the following link:

https://play.google.com/store/apps/details?id=it.edita.mlrepair&hl=it.

The purchase of the tablets was made by the partners after an online market survey. The cost of the tablet, in relation to its technical characteristics, was one of the lowest on the market.





Fig.8: Purchased tablets for the selected fishermen

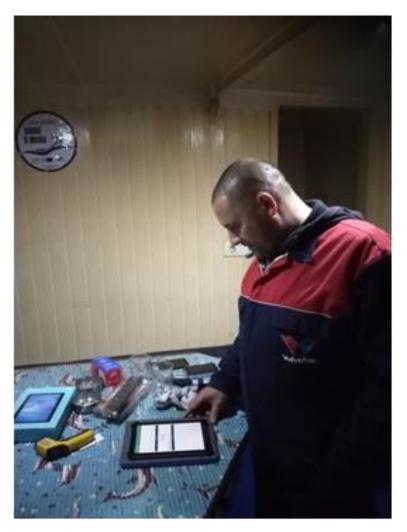


Fig. 9. Fishermen Ivan Vidović (f/v Diniva) when receiving the tablet and learning how to use the APP