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MARLESS (MARine Litter cross-border awarenESS 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

4.1 - 4.1 Educational marine litter programs in schools and eco-schools

WP 4

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PROJECT MARLESS

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CONTENT:

1. Introduction

Implementing marine litter education programs in schools and eco-schools is indeed an effective way to promote responsible management, reduction and prevention of marine litter, as well as the protection of marine ecosystems. Thanks to the Marless Project, students' knowledge, attitudes and behaviors have been developed in these areas, also allowing them to become environmental ambassadors and leaders in their communities. The interdisciplinary approach used ensured that students received a comprehensive marine litter education. Covering a wide range of topics, from scientific and environmental aspects to social and economic implications, students gain a holistic understanding of the issue. This knowledge gives them the tools to make informed decisions and act. Engaging, thought-provoking, and interactive content is a key component of these programs. By making the learning experience enjoyable and practical, you have ensured that students are actively engaged and retain the information they learnt. Activities such as beach interventions, experiments and projects allow students to apply their knowledge in real-world situations and develop critical thinking and problem-solving skills. In addition to educating students, these programs promote cooperation and collaboration between various stakeholders. Students, teachers, parents and senior citizens unite to work towards a common goal of marine ecosystem conservation. This collaboration helps create a sense of ownership and shared responsibility, leading to more effective and sustainable initiatives. By enabling students to act as environmental ambassadors and leaders, these programs have a knock-on effect on their communities. Students were encouraged to promote positive approaches to conservation, advocacy and sustainable development. Through their actions, students inspire others and create positive change that goes beyond the school environment. Overall, implementing marine litter education programs in schools and eco-schools not only provides students with valuable education but also cultivates a sense of stewardship and empowers them to make a difference. By developing their knowledge, attitudes and behaviours, the marless project has contributed to a sustainable future for marine ecosystems and fosters a generation of environmentally conscious individuals

2. Local Context

2.1. Veneto Region

The awareness raising activity was carried out on the beaches in Veneto coast: Sottomarina Beach, Boccasette beach in the protected area of the Po Delta and Ca' Savio beach.
The students of the schools of Padua and Treviso have been involved in cleaning city parks and the embankments of the Piovego canal and the Sile river and have strengthened awareness of how rivers constitute the main transport route for marine waste from the mainland to the sea.
In this way school children have had the opportunity to clean their own territory, understanding the benefits that a healthy environment can give to the whole community.

2.2. UNIDU

The city of Dubrovnik and its surrounding area are known for their stunning natural beauty, with pristine beaches attracting numerous tourists every year. Unfortunately, this influx of visitors often leads to a significant amount of litter and waste being left behind, which has a negative impact on the local environment and ecosystem. Recognizing the importance of addressing this issue, several local clean-up actions on the beaches in the area have been initiated. These efforts aim to not only remove litter but also to raise awareness and educate the public about the importance of responsible waste management and sustainable tourism practices.

2.3. IRENA

Region of Istria is the westernmost county of Croatia which includes the biggest part of the Istrian peninsula (2,820 km^2).

Its coastline is 445 km long with islands making up 539.9 km. Mirroring the bay of Venice across the Adriatic and the Quarnaro Gulf, the region is not far from the Julian Alps. The westernmost point is at Savudrija while the southernmost is near Premantura, on the local promontory of Kamenjak.

The continental plains and valleys are primarily utilized for agriculture, such as growing cereals and vegetables. Closer to the sea, red lands are used for cultivation of grapes, vine, olives, and figs. Agriculture and the production of ecological food, the olive gardens, and the production of quality wines is the focus of Istria's agriculture sector. The coastline and nearby islands are rich in the maquis shrubland (mostly holm oak and strawberry tree). Woods, mostly oak and pine trees, cover a third of the territory. The Brijuni national park and the Učka nature park are well-known natural reservations and legally protected landscapes. This mountain range feeds the rivers and lakes from eastern Istria to the Raša river in the Labinština peninsula. Other interesting localities are Lim Bay, the wood near Motovun, park woods Zlatni Rt and Šijana near Pula, the protected landscape of Kamenjak in the extreme south of Istria, and the reservation Palud with an ornithology near Rovinj. The Brijuni archipelago is an interesting habitat of about 680 plant species and also decorated by the most diverse vegetation and olive groves.

Protected from the north by the mountain chain of Alps as well the inner highland, the climate is Mediterranean and very pleasant with the highest air temperature averaging 24 °C during August The lowest air temperature averages 5 °C in January. Summers are usually warm during the day and cooler near the evening, although strange heat wave patterns are common. The weather ranges from humid to dry with over 10 hours of sunshine daily. Primarily, there is a lot of moisture in the air especially in the coastal towns of Istra such as Poreč, Vrsar, Rovinj, Pula, and others. Temperatures above 10 °C last for more than 240 days a year. Excessive heat (above 30 °C) lasts for three weeks at the most. Despite air temperatures being lower than

those in Dalmatia, the Adriatic Sea is warmer reaching up to 26 °C in August, coldest in March, (9-11 °C), while the freezing even in small, shallow bays is quite rare. There are two kinds of winds - the bora is bringing cold and clear weather from the north in winters, and the southern jugo bringing rain in summer. The maestral is a summer breeze blowing from the inland to the sea. The salinity of the sea water is 0.37%.

2.4. Friuli Venezia Giulia Autonomous Region

The cleaning-up action involved the **six** secondary schools participating in the **4.1** activity, namely **Secondaria di Primo Grado "Guido Brunner”**, **Scuola Secondaria di Primo Grado "Pietro Addobbati”**, **Scuola secondaria di 1° grado “C. De Marchesetti", Scuola Secondaria di Primo Grado “Giovanni XXIII”, Scuola Secondaria di Primo Grado “Leonardo da Vinci”, Scuola Secondaria di Primo Grado “Guglielmo Marconi”**. Three of the cleaning-up activities were held by the seacoast of the Protected Area of Miramare in Trieste (AMP Miramare), whereas the remaining activities took place by riverbanks respectively at the municipality of Tricesimo, the municipality of Mortegliano, and the municipality of Pozzuolo del Friuli. The aforementioned municipalities are part of the River agreement, an instrument for negotiated and participatory planning of water resources.

Finally, the cleaning-up activities were managed by AMP Miramare, which collaborated in the implementation of **4.1** activities.

2.5. Cetacea Foundation

Cetacea Foundation involved scools and one elder association in the province of Rimini. All clean-up activities were carried out in sandy beaches. All the school’s activities were performed during spring 2022 (from March to April) and the activities with the elder association have been carried out in November 2023. (d4.1.3).

2.6. Puglia Region

The context where the waste collection on the beach took place sees two very important coastal locations. Specifically, the "pier of Adriano" (Lecce) and the free beach of San Cataldo (Lecce), the students of different classes of the Banzi Bazoli school in Lecce have been active throughout the morning on the two sandy beaches, especially with attention in the pier of Hadrian.

3. Deliverable methodology

3.1. 2 steps educational marine litter program addressed to schools eco schools (Deliverable 4.1.1)

For the Marless project, the activities were carried out by the different PPs through environmental education programs, conducted in different regions, with the involvement of different schools. Great collaboration between Arpa Puglia, concessionaires of bathing establishments, Liceo Banzi Bazoli and Liceo Quinto Ennio for the Puglia Region. The second collaboration with IRENA (Istrian Regional Energy Agency) and several primary schools of the Istrian Region. The Cetacea Foundation has also collaborated with various schools in Riccione and Rimini, while the Friuli Venezia Giulia Region with various "Guido Brunner" First Grade Secondary Schools, "Pietro Addobbati" First Grade Secondary School, "C . De Marchesetti", "Giovanni XXIII" Secondary School, "Leonardo da Vinci" Secondary School, "Guglielmo Marconi" Secondary School, UNIDU with schools in Dubrovnick and Srebreno, and ARPA Veneto that involved an overall number of 23 classes and about 580 students of Primary Schools classes IV and V) and at lower secondary schools in the Veneto Region.

In all cases, the programs aimed to raise awareness of marine pollution, focusing in particular on plastics and their impact on marine ecosystems and human health. Students were provided with presentations, visual materials (such as videos and PowerPoint presentations), and hands-on activities. They learned about the aims and objectives of the MARLESS project, sustainable development, macro and micro plastics and the potential effects of plastics on marine ecosystems and human health. Microplastic samples collected during beach clean-up activities were analysed under a microscope to help students understand their production and dispersion processes.

The programs also emphasized the importance of adopting sustainable behaviours and promoting the conservation of marine ecosystems. The students were actively involved in the protection of the marine environment through activities such as collecting microplastic samples and participating in beach clean-up activities.

Going into details, the 2 Steps educational programme developed by the partnership was built as follow:

- class lessons/workshops;
- awareness-raising day with cleaning activities for beaches, parks and green areas.

Of course, different activities were carried out for primary and secondary schools and the specific activities slightly change in the different regions.

For example, in Veneto Region, as a first activity, primary school students were introduced to the concepts inherent in the Marless Project through digital and interactive presentations and then the creation of a book game summary of what they learned. The second day of activity all classmates have shared their creations done the previous day; also, the objectives set out in the 2030 Agenda have been discussed, especially Objectives 12 and 14. As a last activity, sea turtles were created, symbol of the fight against marine litter, with recovery material such as the bottom of plastic bottles.

Differently, with secondary schools was immediately dealt the time taken to degrade some of the waste present in the environment; these were taken from a box containing common objects found at sea or on the beaches. The class discussed the topic of plastic and microplastics present in the daily lives of all of us. Children of the secondary school also made their book – game as manual activity. The goals of the 2030 Agenda were discussed in classes and the "Sea Watcher" app was presented to all students. At the end of the experience of cleaning in the field, students have reworked all the concepts learned in the various days of environmental education through infographics.

The project was integrated with educational activities and workshops within the Boat Show at the Venice Arsenale on May and June 2022. Entertainment, games and observation activities were offered, all centred on the theme of the marine environment, its inhabitants and the promotion of differentiated waste collection and the need to pay attention to the use of non-biodegradable material, reducing its dispersion in the environment.

Aula Magna Banzi Bazoli (Lecce PU)

Clean-up action in Veneto Region

4. Involvement of an Association of elderly people for environmental education (Deliverable 4.1.5)

All the PP project partners took steps to involve the elderly associations, the educational activities concerning the environmental issues of the Marless project were held at the association offices, specifically the issues of the dispersion of marine waste were technically explored. The public proved to be very involved as well as attentive to the environmental issue of waste, and brought to their community the important environmental issues that emerged during the lesson.

Clean-up action of the elder association in Veneto Region.

In this case, the approach of the different partners was slightly different, from lecture about the project and the marine pollution up to a direct involvement at the clean-up action with the students. The cooperation between two different generations and the message that was shared raised the awareness and shared different experience between two different people.

Elderly people were involved through their participation in MARLESS exhibition event called "Clean Adriatic Sea for future generations" held in Rovinj, June 2022.

5. Clean-up actions whit schools (Deliverable 4.1.3)

	Position	Estimated area	Number of children	Cleaning duration	Weight	Number of objects
	A	B	C	D	E	F
1	Posizione	Area stimata (m2)	Numero di bambini/ragazzi	Durata pulizia stimata	Peso rifiuti raccolti (g)	Numero oggetti raccolti
2	Molo di Adriano (Lecce)	400	19	1.30 h	1050.0	900
3	Spiaggia Libera di San Cataldo (Lecce)	300	19	2.00 h	1200	1045
4	Srebreno	50	20	1 h	4000	300
5	Dubrovnik	30	30	1 h	3000	200
6	AMP MIRAMARE Trieste	300	20	1.30 h	3136.2	1024
7	AMP MIRAMARE Trieste	300	17	1.30 h	1265	156
8	AMP MIRAMARE Trieste	300	44	1.30 h	2174	477
9	Tricesimo , Leonacco Basso zona Guado per Fontanabona	600	44	1.30 h	10084	192
10	Mortegliano, canale Cormor	500	34	1.30 h	302	17908
11	Pozzuolo, Guado di Via dei Castelli	600	50	1.30 h	10147	494
12	Riccione	200	225	2 hours	N/A	5000
13	Rimini	200	100	2 hours	N/A	3000
14	Rimini	200	320	2 hours	N/A	8000
15	Cattolica	50	5	2 hours	N/A	900
16	Penisula Vižula, Medulin, Region of Istria – Croatia	1400	100	2:30 h	60000	N/A
17	Island Fratarski , Pula , Region of Istria – Croatia	550	50	2:30 h	12000	N/A
18	Maslinica Beach - Rabac, Labin , Region of Istria – Croatia	350	50	2 h	8000	N/A
19	Spiaggia del faro – Jesolo VE	400	40	3 h	N/A	10 BAG
20	Giardino degli ulivi di Gerusalemme – Padova, via Caserta	25000	22	2 hours	N/A	5 BAG
21	Parco dei Girasoli - Padova, via Bainsizza	40000	20	2 hours	N/A	5 - 6 BAG
22	Argine del Piovego - Padova	10000	42	2 hours	N/A	5 - 6 BAG
23	Spiaggia di Boccasette (RO)	4000	40	3 h	N/A	10 BAG
24	Parco San Martino (TV)	280	26	2 h	N/A	3 - 4 BAG
25	Spiaggia di Ca' Savio – Cavallino VE	800	23	2 h	N/A	3 - 4 BAG
26	Spiaggia di Sottomarina (VE)	1300	141	2 h	N/A	24 BAG
27	Spiaggia di Isola Verde - Rosolina VE	N/A	40	2 h	N/A	7 - 8 BAG
28	Argine del Sile (TV)	N/A	40	2 h	N/A	10 BAG
29	TOTALE	88110	1581	51 h	112172	

Table Clean Up Action

5.1. Clean-up actions whit schools Puglia Region

The students have been engaged in beached marine litter research and removal in the targeted areas. Thereafter, the students with the support of Lido Soleluna Staff conducted in-depth classifications of the litter collected as well as quantitative and qualitative analysis using scientific parameters normally adopted in scientific sampling.

Thus, the activities structured as such allowed the students to reflect on the phenomenon of marine litter, acquiring a comprehensive understanding of marine litter's composition, and the time of

decomposition, along with questioning their potential sources, their environmental impact, and the impact on marine species and food chains.

The following table refers to the Banzi Bazoli High School in Lecce. The activity took place on 11 april 2022 and involved the search, removal, classification and qualitative-quantitative analysis of the marine litter collected.

Molo di Adriano	
LOCATION	Molo di Adriano (Lecce)
ESTIMATED TOT. AREA	400 m2
NUMBER CHILDRENs	19
ESTIMATED CLEAN-UP DURATION	1.30 h
ESTIMATED AMOUNT OF WASTE COLLECTED	1050,0 g
ESTIMATED NUMBER OF ITEMS COLLECTED	900
SHORT DESCRIPTION	*Plastic bottles, cigarettes, polyurethane foam, packs of snacks, handkerchiefs, various objects (shoes,, paper, metal materials, glass bottles, cans, fishing gear.*

PICTURES	 

The following table refers to the Banzi Bazoli High School in Lecce. The activity took place on 11 april 2022 and involved the search, removal, classification and qualitative-quantitative analysis of the marine litter collected.

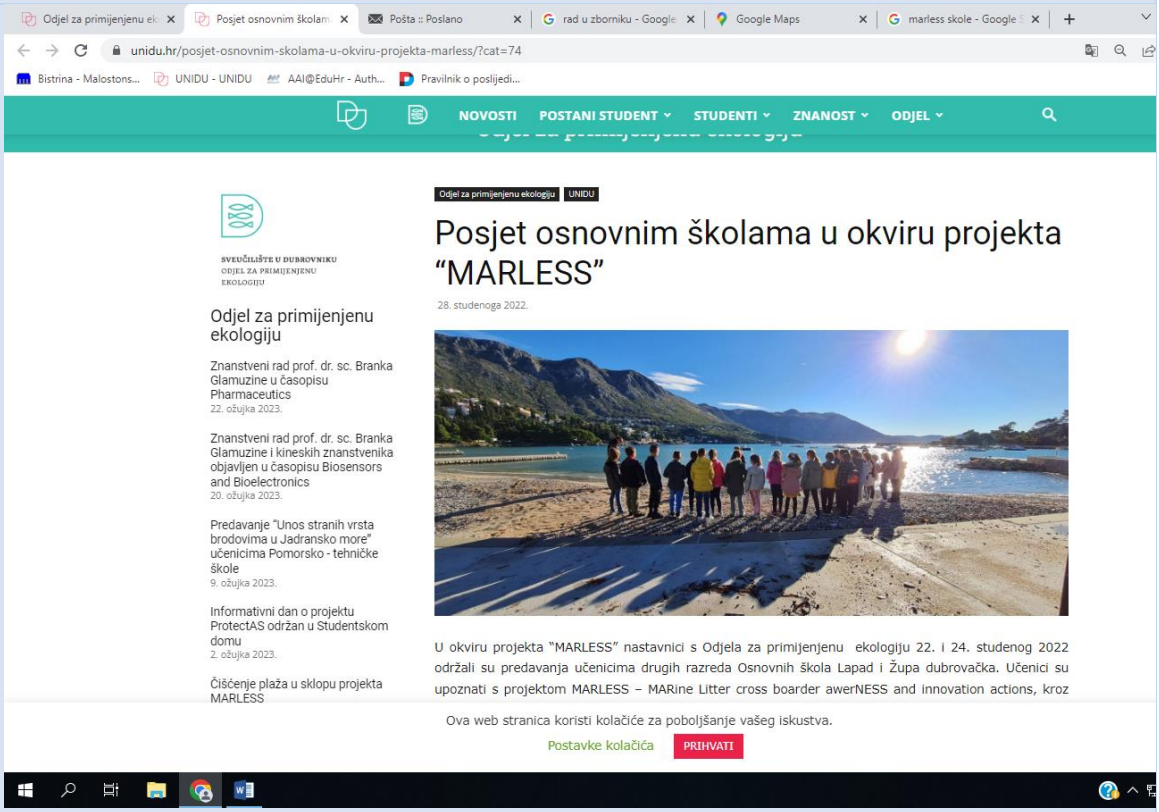
Spiaggia Libera di San Cataldo	
LOCATION	Spiaggia Libera San Cataldo (Lecce)
ESTIMATED TOT. AREA	300 m2
NUMBER CHILDRENs	19
ESTIMATED CLEAN-UP DURATION	2.00 h
ESTIMATED AMOUNT OF WASTE COLLECTED	1200 g
ESTIMATED NUMBER OF ITEMS COLLECTED	1045
SHORT DESCRIPTION	*Plastic bottles, cigarettes, polyurethane foam, packs of snacks, handkerchiefs, various objects (shoes), paper, metal materials, glass bottles, cans, fishing gear.*

PICTURES	

5.2. Clean-up actions whit schools UNIDU

Cleaning up actions with schools are crucial in promoting environmental conservation and cultivating good habits in students regarding waste management. The clean-up action involved identifying areas where waste had accumulated and could threaten the environment, such as parks, beaches, or streets. Schools were involved by making students and teachers aware of the importance of the clean-up action and encouraging them to participate. Participation from students and teachers was impressive, and they volunteered to participate in the clean-up effort. After the clean-up action took place, feedback was gathered from the students and teachers who participated to discuss their overall experience. The feedback was overwhelmingly positive, with most students gaining valuable first-hand experience regarding waste management and environmental conservation. They remarked that participating in a clean-up action had helped raise their awareness of the importance of proper waste disposal and management. Teachers saw the opportunity to integrate the initiative into their lesson plans, creating a more significant impact in both the educational and environmental spheres.

Title (fill one table for each clean-up)	
LOCATION	Srebreno
ESTIMATED TOT. AREA	50m long beach
NUMBER CHILDRENs	20
ESTIMATED CLEAN-UP DURATION	1h
ESTIMATED AMOUNT OF WASTE COLLECTED	4kg
ESTIMATED NUMBER	300

OF ITEMS COLLECTED	
SHORT DESCRIPTION	*Beach clean-up in Srebreno*
PICTURES	

Title (fill one table for each clean-up)

LOCATION	Dubrovnik
ESTIMATED TOT. AREA	30m long beach
NUMBER CHILDRENs	30
ESTIMATED CLEAN-UP DURATION	1h
ESTIMATED AMOUNT OF WASTE COLLECTED	3 kg
ESTIMATED NUMBER OF ITEMS COLLECTED	200
SHORT DESCRIPTION	*Clean-up of beach located in Dubrovnik*
PICTURES	We did not have permission to take pictures

5.3. Clean-up actions whit schools FVG Region

The students have been engaged in beached marine litter research and removal in the targeted areas. Thereafter, the students with the support of AMP Miramare Staff conducted in-depth classifications of the litter collected as well as quantitative and qualitative analysis using scientific parameters normally adopted in scientific sampling.
Thus, the activities structured as such allowed the students to reflect on the phenomenon of marine litter, acquiring a comprehensive understanding of marine litter's composition, and the time of decomposition, along with questioning their potential sources, their environmental impact, and the impact on marine species and food chains.
During the cleaning-up activity, the students were invited to keep some of the meaningful marine litter collected (considering shapes, material, potential lifetime, and hypothetical sources), which will be employed to develop a final work to be exposed at MARLESS Infoday.

The following table refers to **Secondaria di Primo Grado "Guido Brunner"**. The activity was held on 14/11/2022 and involved research, removal, classification, and qualitative-quantitative analysis of the marine litter collected.

Title (fill one table for each clean-up)	
LOCATION	AMP MIRAMARE Trieste
ESTIMATED TOT. AREA	300 m2
NUMBER CHILDRENs	20
ESTIMATED CLEAN-UP DURATION	1.30 h
ESTIMATED AMOUNT OF WASTE COLLECTED	3136,2 g
ESTIMATED NUMBER OF ITEMS COLLECTED	1024
SHORT DESCRIPTION	*Polystyrene, cigarettes, lighters, polyurethane foam, snack packages, toys, tissues, sanitary pads, various objects (shoes and flipflops), paper, metal materials, cork, glass bottles, ceramics, cans, fishing gear, and other items.*
PICTURES	

The following table refers to **Scuola Secondaria di Primo Grado "Pietro Addobbati"**. The activity was held on 12/01/2023 and involved research, removal, classification, and qualitative and quantitative analysis of the marine litter collected.

Title (fill one table for each clean-up)	
LOCATION	AMP MIRAMARE Trieste
ESTIMATED TOT. AREA	300 m2
NUMBER CHILDRENs	17
ESTIMATED CLEAN-UP DURATION	1.30 h
ESTIMATED AMOUNT OF WASTE COLLECTED	1265 g
ESTIMATED NUMBER OF ITEMS COLLECTED	156
SHORT DESCRIPTION	*Polystyrene, plastic bottles, cigarettes, snack packages, batteries, tissues, paper, metal materials, cork, glass bottles, ceramics, cans, and fishing gear.*
PICTURES	

The following table refers to **Scuola secondaria di 1° grado "C. De Marchesetti"** in Sistiana. The activity was held on 17/01/2023 and involved research, removal, classification, and qualitative and quantitative analysis of the marine litter collected.

Title (fill one table for each clean-up)	
LOCATION	AMP MIRAMARE Trieste
ESTIMATED TOT. AREA	300 m2
NUMBER CHILDRENs	44
ESTIMATED CLEAN-UP DURATION	1.30h
ESTIMATED AMOUNT OF WASTE COLLECTED	2174g
ESTIMATED NUMBER OF ITEMS COLLECTED	477
SHORT DESCRIPTION	*Polystyrene, cigarettes, cigarette packs, plastic cutlery, polyurethane foam, snack packages, toys, tissues, various objects (shoes, flip-flops), aluminum, paper, metal materials, cork, glass bottles, ceramics, cans, other items, and fishing gear.*
PICTURES	

The following table refers to **Scuola Secondaria di Primo Grado "Giovanni XXIII"** in Tricesimo. The activity was held on 17/03/2023 and involved research, removal, classification, and qualitative and quantitative analysis of the marine litter collected.

Title (fill one table for each clean-up)	
LOCATION	Tricesimo , Leonacco Basso zona Guado per Fontanabona
ESTIMATED TOT. AREA	600 m2
NUMBER CHILDRENs	44
ESTIMATED CLEAN-UP DURATION	1.30h
ESTIMATED AMOUNT OF WASTE COLLECTED	10084g
ESTIMATED NUMBER OF ITEMS COLLECTED	192
SHORT DESCRIPTION	*Polystyrene, plastic bottles, plastic boxes, ropes, cigarettes, cigarette packs, plastic bags, polyurethane foam, snack packages, toys, tissues, sanitary pads, various objects, shoes, flip-flops, clothing, paper, journals, metal materials, cork, boxes, glass bottles, ceramics, detergent bottles, cans, and paper glasses.*
PICTURES	

The following table refers to **Scuola Secondaria di Primo Grado "Leonardo da Vinci"** in Mortegliano. The activity was held on 27/03/2023 and involved research, removal, classification, and qualitative and quantitative analysis of the marine litter collected.

Title (fill one table for each clean-up)	
LOCATION	Mortegliano, canale Cormor
ESTIMATED TOT. AREA	500m2
NUMBER CHILDRENs	34
ESTIMATED CLEAN-UP DURATION	1.30h
ESTIMATED AMOUNT OF WASTE COLLECTED	302
ESTIMATED NUMBER OF ITEMS COLLECTED	17908g

SHORT DESCRIPTION	*Polystyrene, plastic bottles, plastic boxes, ropes, cigarettes, cigarette packs, plastic bags, polyurethane foam, snack packages, toys, tissues, sanitary pads, various objects, shoes, clothing, paper, journals, metal materials, cork, boxes, glass bottles, ceramics, detergent bottles, cans, fishing gear, tetra packs.*
PICTURES	

The following table refers to **Scuola Secondaria di Primo Grado "Guglielmo Marconi"** in Pozzuolo del Friuli. The activity was held on 13/03/2023 and involved research, removal, classification, and qualitative and quantitative analysis of the marine litter collected.

Title (fill one table for each clean-up)	
LOCATION	Pozzuolo, Guado di Via dei Castelli
ESTIMATED TOT. AREA	600 m2
NUMBER CHILDRENs	50
ESTIMATED CLEAN-UP DURATION	1.30h
ESTIMATED AMOUNT OF WASTE COLLECTED	10147g
ESTIMATED NUMBER OF ITEMS COLLECTED	494
SHORT DESCRIPTION	*Polystyrene, cigarettes, cigarette packs, plastic bags, polyurethane foam, snack packages, toys, tissues, sanitary pads, various objects, shoes, other pieces of clothing, paper, journals, metal materials, cork, glass bottles, ceramics, ropes, cans, fishing gear, plastic bottles, ropes.*
PICTURES	

5.4. Clean-up actions whit schools Fondazione Cetacea

During beach clean-up actions, students had the objective of collecting, counting, and cataloging all the waste found on the beaches, following a simplified protocol for cataloging. The classes involved in these actions were the same ones that were engaged in the classroom lessons. Some classes created websites to share their experience. All students showed significant interest and participation in the activities and in finding a solution to the issue of marine litter.

Secondary school A. Volta – F. Fellini, Clean-up	
LOCATION	Riccione
ESTIMATED TOT. AREA	200 m beach length
NUMBER CHILDRENs	225
ESTIMATED CLEAN-UP DURATION	2 hours
ESTIMATED AMOUNT OF WASTE COLLECTED	We didn't estimated the total amount of ML collected, but the most abundant categories are cigarettes and other plastic materials.
ESTIMATED NUMBER OF ITEMS COLLECTED	5000 objects collected
SHORT DESCRIPTION	*The cleaning activities took place near the port of Riccione, lasting for two hours during the first week of April 2022.*

PICTURES	

Secondary school A.Serpieri, Clean-up

LOCATION	Rimini
ESTIMATED TOT. AREA	200m
NUMBER CHILDRENs	100
ESTIMATED CLEAN-UP DURATION	2 hours
ESTIMATED AMOUNT OF WASTE COLLECTED	We didn't estimated the total amount of ML collected, but the most abundant categories are cigarettes and other plastic materials.
ESTIMATED NUMBER OF ITEMS COLLECTED	3000 objects collected
SHORT DESCRIPTION	*The cleaning activities took place in Rimini, lasting for two hours during the first week of April 2022.*

PICTURES	

Lower secondary school A.Berola, Clean-up

LOCATION	Rimini
ESTIMATED TOT. AREA	200m
NUMBER CHILDRENs	320
ESTIMATED CLEAN-UP DURATION	2 hours
ESTIMATED AMOUNT OF WASTE COLLECTED	We didn't estimated the total amount of ML collected, but the most abundant categories are cigarettes and other plastic materials.
ESTIMATED NUMBER OF ITEMS COLLECTED	8000 objects collected

SHORT DESCRIPTION	*The cleaning activities took place near the port of Rimini, lasting for two hours during the last week of March 2022.*
PICTURES	

Università civica, elder association, Clean-up	
LOCATION	Cattolica
ESTIMATED TOT. AREA	50m
NUMBER PEOPLE	5
ESTIMATED CLEAN-UP DURATION	2 hours
ESTIMATED AMOUNT OF WASTE COLLECTED	We didn't estimated the total amount of ML collected, but the most abundant categories are cigarettes and other plastic materials.
ESTIMATED NUMBER OF ITEMS COLLECTED	900 objects collected
SHORT DESCRIPTION	*The cleaning activities took place near the port of Cattolica, lasting for two hours during the last week of November 2022.*
PICTURES	

5.5. Clean-up actions with schools IRENA

CLEAN-UP ACTIONS WITH ECO-SCHOOLS - PENISULA VIZULA, MEDULIN	
LOCATION	Penisula Vižula, Medulin, Region of Istria – Croatia
ESTIMATED TOT. AREA	Estimated 1400 m of coastal area was cleaned.
NUMBER CHILDRENs	100 children
ESTIMATED CLEAN-UP DURATION	2:30 h
ESTIMATED AMOUNT OF WASTE COLLECTED	60 kg
ESTIMATED NUMBER OF ITEMS COLLECTED	Senior students, representatives of the eco group of the Elementary School Dr. Mate Demarina from Medulin, performed a simplified procedure for categorization and quantification of marine waste in order to identify sources of marine litter. On the corridor about 200 m long and 4 m wide (beach width), among other waste, they found 206 smaller pieces of plastic waste. And it is a piece of plastic per meter of beach length.
SHORT DESCRIPTION	On Thursday, April 28, 2022, on the Vižula peninsula in Medulin, the first of the planned eco-actions of cleaning beaches with eco-schools was organized. The action, with the coordination of IRENA and CIM, was attended by students of the Elementary School Dr. Mate Demarina from Medulin and the Banjole Regional School. The students were deployed to six locations and after a brief introduction to the objectives of the action and demonstration sorting exercises, they started a one-hour action of cleaning the coastal area of the peninsula. About 120 participants took part in the event. The action took place in such a way that the collected waste was immediately disposed of in colorful bags intended for plastic, metal, paper and other waste. After the action, an overview of the collected waste and weighing by different categories was done. In this short time,

	over 60 kg of various waste was collected, of which almost half is plastic waste. Most of the waste found was up to 10 cm in size, and there could be found Percors of straws, protective masks, pieces of fishing nets and plastic wrap. Items made of glass, metal, paper and other materials accounted for a smaller share. In addition to small items, some larger items were found, such as tires, plastic and styrofoam boxes, as well as broken plastic deck chairs. The cleaning action, in addition to the benefits of cleaning the coastal area, aimed to show the students involved and the general public how much waste can really be found on the global coast of our coast and further raise this place Short movie about action: https://www.youtube.com/watch?v=zYr bvR7cU

PICTURES

CLEAN-UP ACTIONS WITH ECO-SCHOOLS - ISLAND FRATARSKI	
LOCATION	Island Fratarski , Pula , Region of Istria – Croatia
ESTIMATED TOT. AREA	Estimated 550 m of coastal area was cleaned.
NUMBER CHILDRENs	50
ESTIMATED CLEAN-UP DURATION	2:30 h
ESTIMATED AMOUNT OF WASTE COLLECTED	12 kg
ESTIMATED NUMBER OF ITEMS COLLECTED	-
SHORT DESCRIPTION	On April 28, 2022, the second action was held on May 3, 2022, on the Fratarski Island. In the action, with the coordination of IRENA, students from the Elementary School Kaštanjer, Pula and Elementary School Monte Zaro, Pula participated. The students were deployed in two corridors and after a brief introduction to the objectives of the action and demonstration sorting exercises, they started a short action of cleaning the coastal area of the island. About 50 participants took part in the event. The action took place in such a way that the collected waste was immediately disposed of in colorful bags intended for plastic, metal, paper and other waste. After the collection, the students performed a detailed monitoring of the collected waste, where they counted the collected waste by different categories and subjects. The analysis showed that most of the collected waste was related to plastic waste such as pieces of broken bags, corks, cigarette butts, ear sticks, ropes, pieces of styrofoam and many other items. In addition to plastic, waste from various materials could be found, such as pieces of metal, fishing hooks and, unfortunately, many pieces of glass from broken bottles. In this short time, 12 kg of various waste was collected, emphasizing that only smaller pieces of waste were collected. The clean-up action, in addition to the benefits of cleaning the coastal area, aimed to show the students involved and the general public how much waste can really be found on our

	coast and further raise awareness of this global problem. After the cleaning action, the students visited the Uljanik Pula Underwater Activities Club, where the club representatives had a brief introduction to diving equipment and invited the students to start diving. Among other things, there was talk about what can be found under the sea, so among the beautiful marine environment we can find many pieces of waste that ended up there by the irresponsible behavior of people. Short video about the event: https://www.youtube.com/watch?v=DhtT76_aEBI

PICTURES	

CLEAN-UP ACTIONS WITH ECO-SCHOOLS - RABAC	
LOCATION	Maslinica Beach - Rabac, Labin , Region of Istria – Croatia
ESTIMATED TOT. AREA	Estimated 350 m of beach was cleaned.
NUMBER CHILDRENs	50
ESTIMATED CLEAN-UP DURATION	2 h
ESTIMATED AMOUNT OF WASTE COLLECTED	8 kg
ESTIMATED NUMBER OF ITEMS COLLECTED	-
SHORT DESCRIPTION	The last action was held on May 9, 2022 in Rabac, together with the sixth-grade students of the Matija Vlačić Elementary School from Labin. The students were deployed in two corridors and after a short acquaintance with the goals of the action and demonstration sorting exercises, they started a short action of cleaning the beach. The aim of the action was to show students that unfortunately, although it seems to us that the beaches in tourist centers are very clean, a detailed examination can find different types of smaller pieces of waste. The action took place in such a way that the collected waste was immediately disposed of in colorful bags intended for plastic, metal, paper and other waste. After the collection, students conducted a detailed review where they weighed the collected waste by different categories and counted the collected items in order to determine the origin of waste, ie whether it was generated locally or arrived by sea currents. The largest share of waste was related to items made of various types of plastic, and among other things, a large amount of cigarette butts, ear sticks, pieces of styrofoam, broken bags, fishing equipment and many other items were found. In particular, a very large amount of cigarette butts was recorded throughout the beach, which indicates the irresponsible behavior of beach visitors. The clean-up action, in addition to the benefits of cleaning the coastal area, aimed to show the students involved and the general public how much waste can really be found on our coast and further raise awareness of this global problem.

5.6. Clean-up actions with schools ARPA Veneto

LOCATION 1	**Spiaggia del faro – Jesolo VE**
ESTIMATED TOT. AREA	400 m x 100 m
NUMBER CHILDRENs	40 students – 4 e 5 classe Scuola Primaria Rodari di Jesolo VE
ESTIMATED CLEAN-UP DURATION	3 h
ESTIMATED AMOUNT OF WASTE COLLECTED	5/6 bags
ESTIMATED NUMBER OF ITEMS COLLECTED	10
SHORT DESCRIPTION	Contenitori di plastica, tin cans, paper towels, plastic bags
PICTURES	
LOCATION 2	Giardino degli ulivi di Gerusalemme – Padova, via Caserta

ESTIMATED TOT. AREA	25.000 mq
NUMBER CHILDRENs	22 students - Classe 4A Scuola primaria Zanibon Padova
ESTIMATED CLEAN-UP DURATION	2 hours
ESTIMATED AMOUNT OF WASTE COLLECTED	5 bags of waste
ESTIMATED NUMBER OF ITEMS COLLECTED	-
SHORT DESCRIPTION	Snack papers, packaging, plastic bottles, carnival confetti.
PICTURES	 

LOCATION 3	**Parco dei Girasoli - Padova, via Bainsizza**
ESTIMATED TOT. AREA	40.000 mq
NUMBER CHILDRENs	20 students - Classe 4B Scuola primaria Zanibon Padova
ESTIMATED CLEAN-UP DURATION	2 hours
ESTIMATED AMOUNT OF WASTE COLLECTED	5 bags
ESTIMATED NUMBER OF ITEMS COLLECTED	5/6
SHORT DESCRIPTION	Plastic caps, Snack papers, Cigarette butts
PICTURES	 

LOCATION 4	**Argine del Piovego - Padova**
ESTIMATED TOT. AREA	10.000 mq
NUMBER CHILDRENs	42 studenti – classi 1 B e 1C Scuola secondaria di primo grado Mameli di Padova
ESTIMATED CLEAN-UP DURATION	2 hours
ESTIMATED AMOUNT OF WASTE COLLECTED	3 bags of waste
ESTIMATED NUMBER OF ITEMS COLLECTED	5/6
SHORT DESCRIPTION	Plastic caps, Snack papers, packaging
PICTURES	

LOCATION 5	**Spiaggia di Boccasette (RO)**
ESTIMATED TOT. AREA	4.000 m x 100 m
NUMBER CHILDRENs	40 studenti – SP G. Marconi Loreo + SP Mons. Tiozzo Porto Viro
ESTIMATED CLEAN-UP DURATION	3 h
ESTIMATED AMOUNT OF WASTE COLLECTED	9 bags
ESTIMATED NUMBER OF ITEMS COLLECTED	10
SHORT DESCRIPTION	Contenitori di plastica (es detersivi, shampoo), spray bottles, ciabatte, giocattoli ,materiale plastico derivante dalla pesca
PICTURES	

LOCATION 6	Parco San Martino (TV)
ESTIMATED TOT. AREA	200m x 140 m
NUMBER CHILDRENs	26 students – classe 1 Scuola Primo Maggio di Treviso
ESTIMATED CLEAN-UP DURATION	2 h
ESTIMATED AMOUNT OF WASTE COLLECTED	2 bags
ESTIMATED NUMBER OF ITEMS COLLECTED	3/4
SHORT DESCRIPTION	Bottle caps, Snack papers, paper towels
PICTURES	

LOCATION 7	Spiaggia di Ca' Savio – Cavallino VE
ESTIMATED TOT. AREA	800 m x 100 m
NUMBER CHILDRENs	23 students – classe 1A – Scuola Secondaria di primo grado Cavallino Treporti VE
ESTIMATED CLEAN-UP DURATION	2 h
ESTIMATED AMOUNT OF WASTE COLLECTED	2 bags of waste
ESTIMATED NUMBER OF ITEMS COLLECTED	3/4
SHORT DESCRIPTION	Lattine, bottiglie di plastica, contenitori di cibo (es patatine, biscotti)
PICTURES	

LOCATION 8	**Spiaggia di Sottomarina (VE)**
ESTIMATED TOT. AREA	1300 m x 100 m
NUMBER CHILDRENs	141 - Scuola secondaria di primo grado IC Chioggia VE
ESTIMATED CLEAN-UP DURATION	2 h
ESTIMATED AMOUNT OF WASTE COLLECTED	24 bags of waste
ESTIMATED NUMBER OF ITEMS COLLECTED	
SHORT DESCRIPTION	*Oggetti di plastica, contenitori, pezzi di ceramica o vetro, bastoncini cotton fioc,*
PICTURES	

LOCATION 9	**Spiaggia di Isola Verde - Rosolina VE**
ESTIMATED TOT. AREA	
NUMBER CHILDRENs	40 studenti classe I e II Scuola secondaria di primo grado Sant'Anna- IC Chioggia VE
ESTIMATED CLEAN-UP DURATION	2 h
ESTIMATED AMOUNT OF WASTE COLLECTED	7/8 bags
ESTIMATED NUMBER OF ITEMS COLLECTED	
SHORT DESCRIPTION	*Oggetti di plastica, bastoncini cotton fioc, contenitori, frammenti di ceramica e vetro*
PICTURES	

LOCATION 10	Argine del Sile (TV)
ESTIMATED TOT. AREA	
NUMBER CHILDRENs	40 students – Classi 2B e 2F Scuola secondaria di primo grado IC Casale sul Sile TV
ESTIMATED CLEAN-UP DURATION	2 h
ESTIMATED AMOUNT OF WASTE COLLECTED	10 bags of waste
ESTIMATED NUMBER OF ITEMS COLLECTED	
SHORT DESCRIPTION	Cigarette butts, plastic bottle, packaging

PICTURES	

6. Conclusion

Summarizing the activities carried out in the context of the MARLESS Project, we have obtained positive results and the students have been actively involved. It is particularly important that the students are well informed about the marine litter problem and feel a responsibility to act as a future generation.

The active involvement of students and teachers is a key element for the success of educational programs of this kind. It is encouraging to know that the teachers actively participated in the activities and that both they and the students responded positively.

Through these activities, students have gained in-depth knowledge of marine litter and its influence on marine ecosystems. It is equally important that they have developed a greater awareness of the problem and of the importance of acting in daily life to reduce the impact of marine litter. This type of environmental education provides new generations with the tools necessary to become active players in preserving the marine environment and promoting sustainable behaviour.

Continuing to involve students and promoting environmental education is essential for creating a more aware society committed to environmental protection.