

# Sustainable Mediterranean

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## Ocean Literacy for All Mediterranean People:

The Ocean We Need for the Future We Want





# Editorial

**T**his issue of *Sustainable Mediterranean* is dedicated to the 2021 Mediterranean Action Day (MAD 2021) campaign of MIO-ECSDE.

An annual activity of MIO-ECSDE, the Mediterranean Action Day gives the opportunity to environmental NGOs to take action in the field and tackle a frontline environmental issue of common interest in the region. There isn't a specific day of the year to plan towards, rather each participating NGO plans its own campaign – it is their 'Day'.

The Annual General Assembly of the MIO-ECSDE Federation decides the theme of each year's Mediterranean Action Day. For the year 2021, marking the launch of the UN Decade of Ocean Science for Sustainable Development (2021 – 2030), it was dedicated to '**Ocean Literacy for all Mediterranean people**', inviting the Mediterranean NGO community to develop initiatives that inspire ocean citizenship and formulate effective actions for the promotion of ocean literacy.

This year, 21 NGOs participated in the 2021 campaign, implementing activities in eleven Mediterranean countries: **Croatia** (EKO KVARNER), **Cyprus** (AKTI), **Egypt** (Arab Office for Youth and Environment - AOYE), **Greece** (Greek Eco Project, iSea, OIKOTOPIA), **Italy** (Circolo Festambiente, Posidonia Project Carloforte, DelTa), **Jordan** (Jordanian Society of Friends of Heritage - JSFH, Land and Human to Advocate Progress - LHAP), **Lebanon** (Makhzoumi Foundation, Human Environmen-

tal Association for Development - HEAD), **Morocco** (Moroccan Club for Environment and Development - CMED), **Spain** (Asociación Hippocampus, Eco-Union, Posidonia Green Project), **Syria** (Syrian Coast Society for Environmental Protection - SCSEP), **Tunisia** (AEKélibia, ASMP Kélibia), while the European Marine Science Educators Association - EMSEA implemented their activity in Croatia, Greece and Italy.

This journal is a tribute to the efforts of these NGOs and their capability and creativity in taking a small seed fund and performing actions with a significant impact. The 2021 Mediterranean Action Day was supported by the EU LIFE Programme (Operating Grant for MIO-ECSDE) and by MIO-ECSDE's own resources.

The participating NGOs had to deal with the COVID-19 pandemic's ongoing implications on top of the usual challenges they have to face in their day-to-day work. Activities had to be adapted and most had to remain restricted to a small number of participants in order to provide safe spaces and fully comply with the measures in place at the time.

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The Mediterranean Sea We Want

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# Ocean Literacy: an overview

Most of us live our lives unaware of how our day-to-day actions affect the health and sustainability of the ocean and its many resources on which we depend. Nor do most of us recognise how the health of the ocean affects our daily lives.

This is what **Ocean Literacy** is about: a **deepened understanding of the ocean’s influence on us and our influence on the ocean**. There are 7 essential principles of ocean literacy (supported by 45 Fundamental Concepts) as shown in Fig. 1.

Reversing the cycle of decline in ocean health and sustainably using the marine resources for sustainable development will require a **paradigm shift** in our lifestyles and a transformation of the way we think and act. To achieve this change, we need new skills, values, and attitudes that lead to more ocean sustainable societies. In this respect, just educating or informing all societal actors about the importance of the ocean is not enough. We need to go beyond ocean science communication and engage the society at large in cascading, comprehensive and continuous actions, pinpointed by informed and responsible decisions on ocean resources and ocean sustainability; while also learning from and building upon local and indigenous knowledge.

As such, ocean literacy is evolving to an ambitious approach in furthering societies’ relationships with the ocean by scaling up actions in all sectors and connecting marine research with education, policy, economy, arts and so forth.



Figure 1. The Seven Essential Principles of Ocean Literacy

# Ocean Literacy at the core of the Ocean Decade

The year 2021 marked the launch of the [United Nations Decade of Ocean Science for Sustainable Development \(2021-2030\)](#) aiming to advance ocean science and sustainable use of the ocean and reverse the cycle of decline in ocean health. The ambition of the Decade of Ocean Science is to mobilize the scientific community, policy-makers, and society at large around a program of joint research and technological innovation to get the ocean back on track. The launch of the Decade has already provided a glimmer of hope and societal actors are already gearing up to make best use of this opportunity to draw attention to the world’s oceans, make a lasting impact on enhancing scientific knowledge, and create improved conditions for sustainable development of the oceans.

The achievement of the Decade’s objectives relies largely on the new ocean narrative that should be developed and provide context and motivation to reduce ocean pressures, increase ocean resilience, and promote ocean prosperity for generations to come. In this sense, **ocean science communication** and **ocean literacy** are key in influencing behaviours and perceptions of all societal actors to fully implement the Outcome 7 of the Decade: “An inspiring and engaging ocean

where society understands and values the ocean in relation to human well-being and sustainable development”.

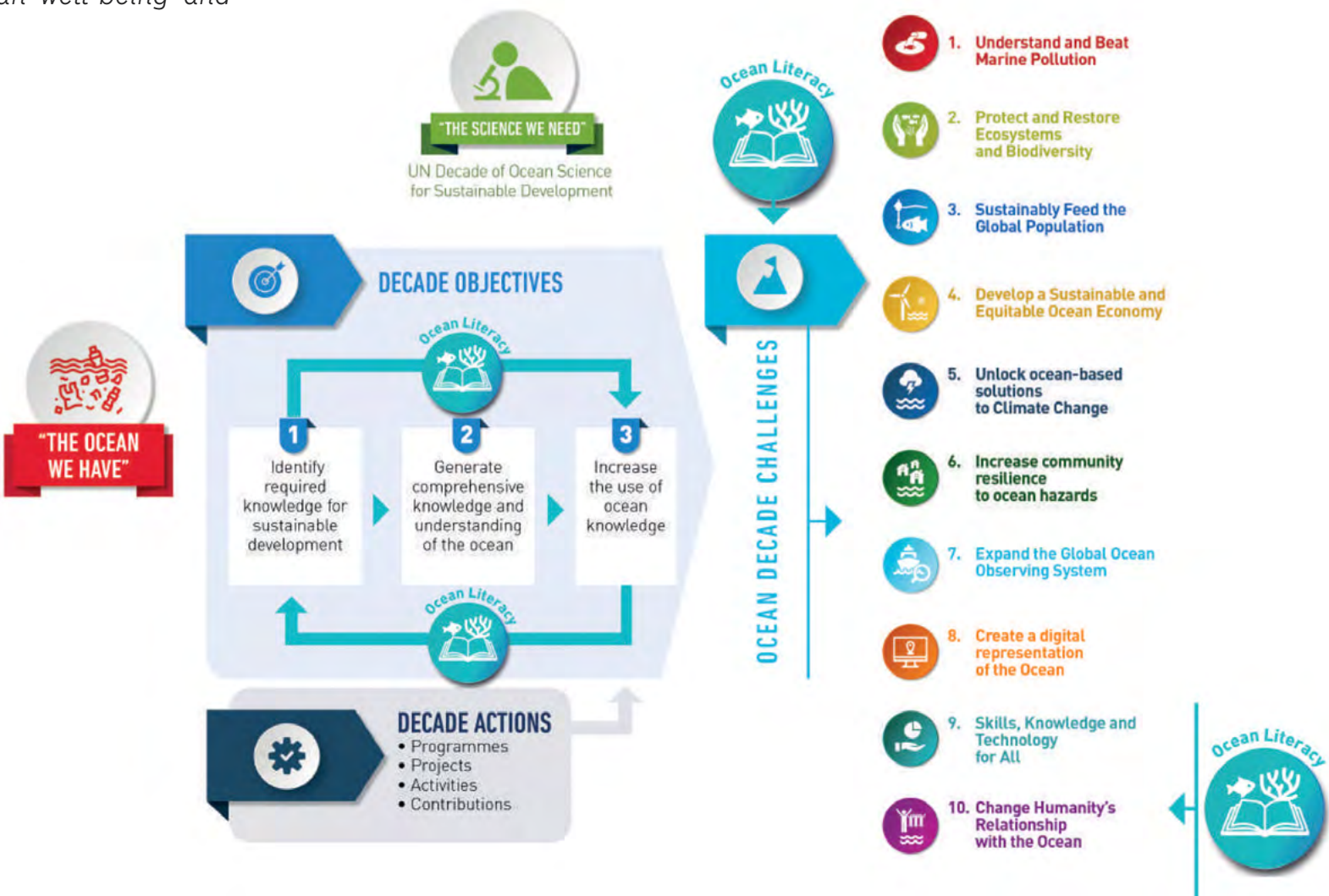


Figure 2. Contribution of Ocean Literacy to the Ocean Decade Objectives, Actions, Challenges and Outcomes. Source: [UNESCO-IOC 2021](#). Adapted from the Implementation Plan @UNESCO.



By supporting national and local NGOs to carry out ocean literacy related activities, MAD 2021 aimed to reach out to Mediterranean citizens and individuals, inviting them to take effective ocean actions in direct and creative ways, to address one or more of the [10 Ocean Decade Challenges](#). Within the scope of the 2021 Mediterranean Action Day, 21 NGOs opted to carry out impactful activities by adopting different types of ocean literacy action. To present them, we have clustered them loosely in the following groups:

- **Marine citizen science** activities to enable the co-generation of knowledge and understanding of the current health of Mediterranean ocean systems.
- **Integrating arts in ocean literacy** initiatives to reflect the understanding of the dynamic and complex nature of the human-ocean nexus.
- **Clean-up campaigns** to actively engage the public to take action for a clean ocean and identify solutions to mitigate marine pollution.
- **Advocacy, awareness raising and capacity building activities** to ensure that the multiple values and services of the ocean for human wellbeing, culture, and sustainable development are widely understood, and identify and overcome barriers to behaviour change.

MAD 2021 succeeds in showcasing the importance of sharing experiences, information, good practices from 11 countries of the Mediterranean region and also connect Mediterranean ocean literacy actors. Such a wide diversity of ocean literacy initiatives already in place can inspire new approaches and strategies to ocean literacy that are not only locally, but regionally and globally relevant.

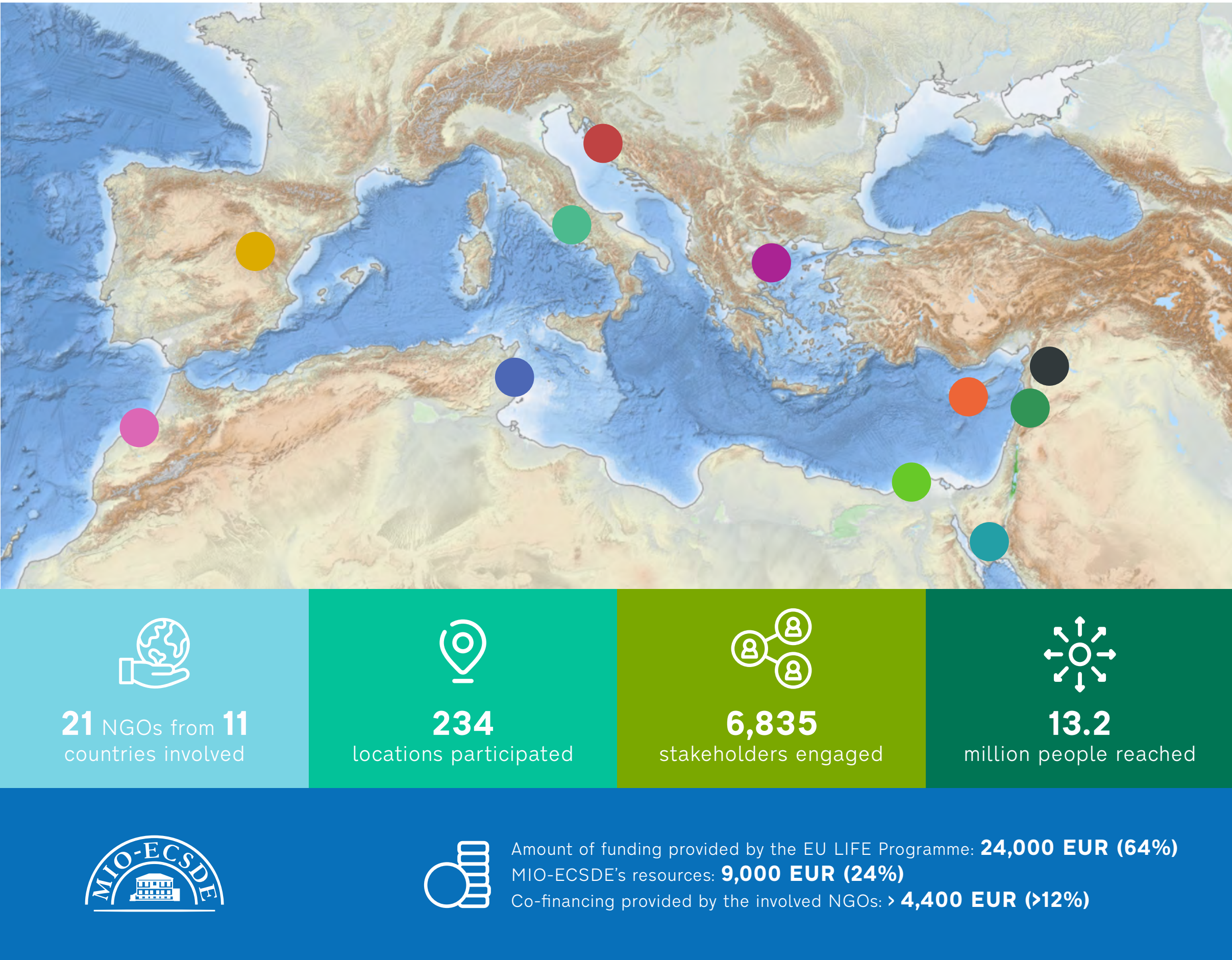


Figure 3. Mediterranean Action Day 2021 on Ocean Literacy in numbers.





Photo Credits: iSea

# Marine Citizen Science

**iSea (Greece) held a Bioblitz event at Axios Delta National Park to enrich the biodiversity database of the area.**

The coastal protected area of Axios Delta is a biodiversity hotspot protected under the Natura 2000 network with incredible natural beauty that is highly impacted by anthropogenic activities and its proximity to the nearby urban fabric. To spark the interest of citizens to the unique and threatened local flora and fauna and promote the concept of citizen science to effectively document biodiversity, a full-day Bioblitz event was organized using the iNaturalist platform, managed in Greece by iSea.

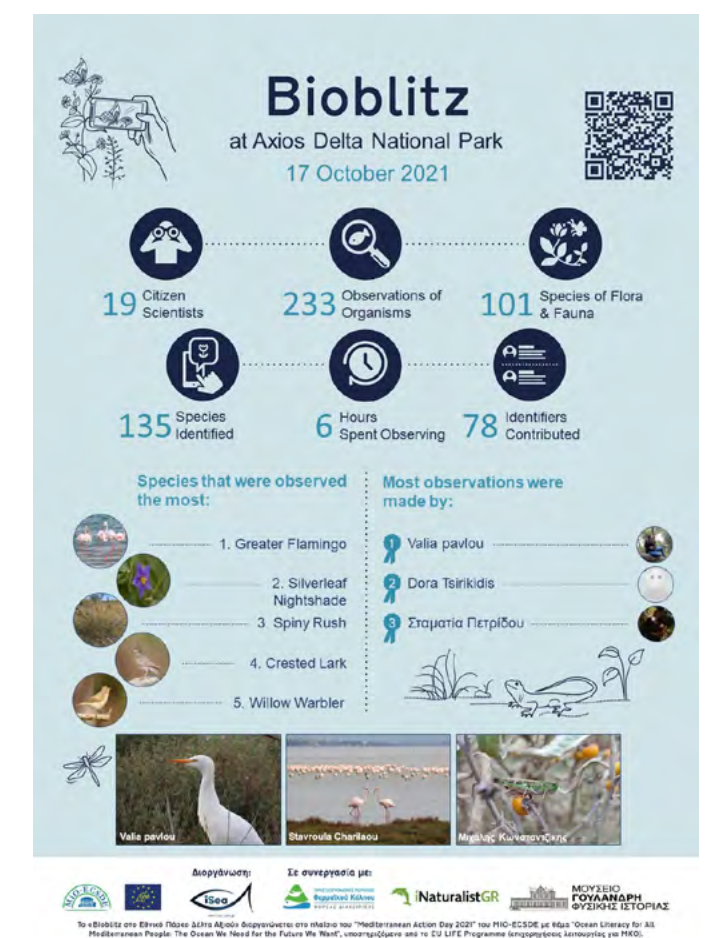
Bioblitzes are events for mass documentation and identification of species, providing the opportunity to “take a snapshot” of the biodiversity of that specific region. The event gathered 40 interested young citizens from nearby cities. For the purposes of the event, a specific data collection project dedicated to the Bioblitz was created on the iNaturalistGR platform where 233 observations were logged, leading to the registration of 45 new species at the Axios Delta National Park.

Participating citizens “Bioblitzing”, locating and recording their surroundings / Photo credits: iSea



Prior to the Bioblitz event, a webinar was organized during which 9 experts offered to some 43 participants their insights on the ecological, social and financial importance of the Axios Delta National Park's biodiversity and ecosystems, introduced them to the concept of citizen science and the use of iNaturalistGR and finally provided guidelines about the Bioblitz event.

The participants witnessed the degradation of the coastal area, identified solutions to address such challenges, reconsidered their behavior and day-to-day habits to reduce their impact on the ocean, and provided scientists, policymakers and management authorities with valuable data that will help them to better understand and ultimately protect marine ecosystems.



The results of the Bioblitz event at Axios Delta National Park / Source: iSea



**ASOCIACION HIPPOCAMPUS (Spain) developed a biota identification resource guide to facilitate documentation of Mar Menor’s marine biodiversity.**

Mar Menor is one of the Mediterranean’s biggest saltwater lagoons. Years of mismanagement, marine pollution, unsustainable urban development and farming practices have deteriorated its habitats and impacted the rich biodiversity of its protected waters.

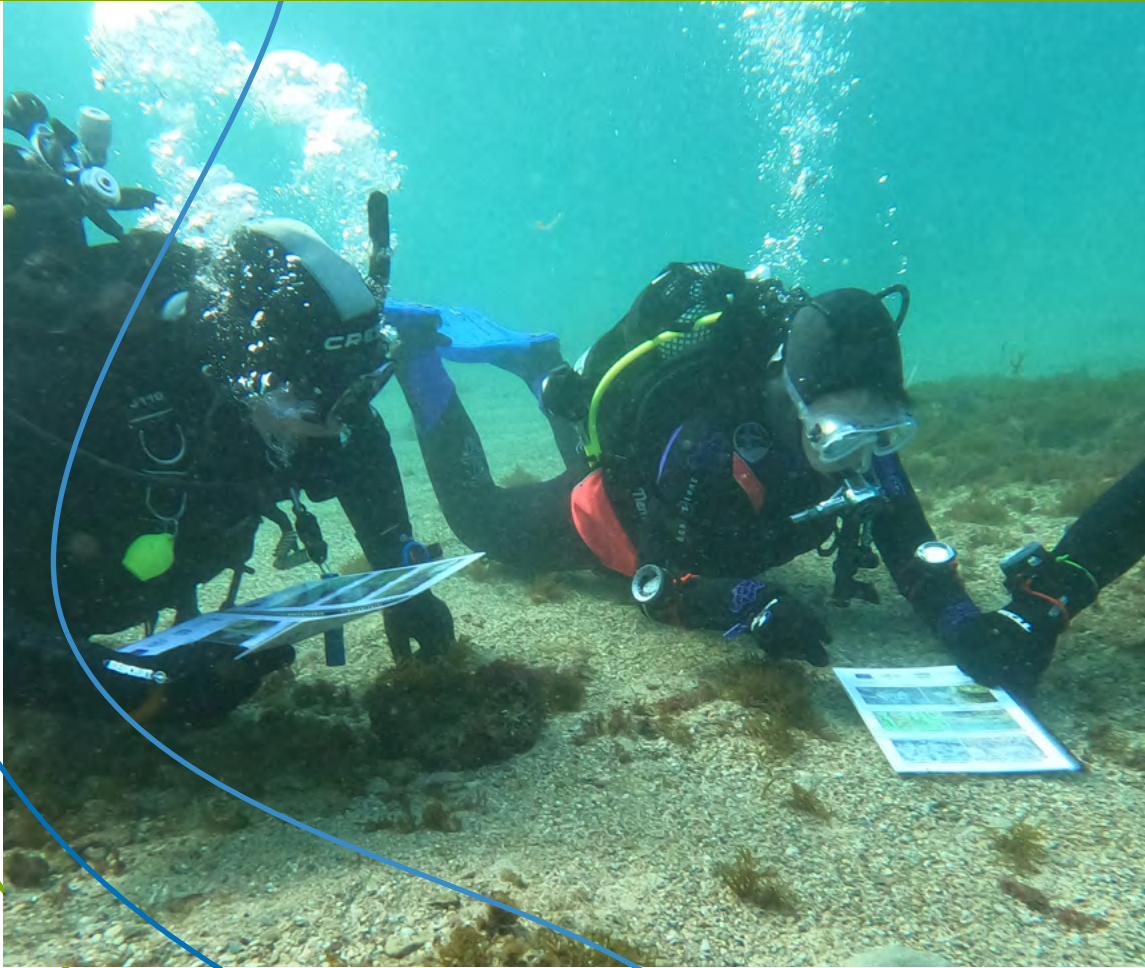
Aiming to deepen the knowledge and appreciation of Mar Menor’s biodiversity and assist the progress and implementation of citizen science activities to monitor and conserve the lagoon, Asociación Hippocampus developed a user-friendly, biota identifica-

tion guide for underwater census surveys. The “field notebook” containing information for 73 common species found in the lagoon was tested and enriched during two underwater surveys by volunteer divers. However, the prevailing poor water quality and anoxic condition of Mar Menor due to ongoing eutrophication events did not work in favour of the divers’ efforts.

Asociación Hippocampus also visited two schools of the Region of Murcia, where some 1,000 students were introduced to the ocean literacy principles, learned about key marine species found in the area and became acquainted with the new biota identification guide or “field notebook”.



Testing the biota identification guide in Mar Menor lagoon / Photo credits: Jose Luis Alcaide







**AKTH (Cyprus) engaged 2,590 citizens in the fight against marine plastic pollution by taking beach clean-ups to another level.**

AKTH re-launched the successful #potavristou citizen-science campaign of 2019 on the occasion of MAD 2021, calling to the public in Cyprus and globally to “reach out”, collect marine litter from everywhere during the month of September and share their findings. Coastal, riverine and seabed clean-ups were co-organized with schools, universities, local authorities, embassies, municipalities, Ministries, public figures, NGOs, and divers throughout the entire month. The participating citizens were instructed to record and share their collected data, such as the amount and composition of marine litter, number of volunteers and location of the collection, through the use of the Ocean Conservancy’s Clean Swell® app (trash collection mobile app) or through AKTH’s social media platforms.

In total, 2,590 individuals joined the campaign from 114 locations in Cyprus and 63 locations from around the world while the extensive communication and dissemination activities by all means and media of #potavristou reached more than 12.1 million individuals. Overall, 13.5 tons of litter were collected, 47% of which were cigarette butts and 40% were plastic items. The results of the campaign were presented to representatives of local authorities, and the Minister of Agriculture, Rural Development and the Environment of Cyprus who participated in one of the clean-ups and stressed the importance of cooperation between the state and civil society for the effective protection of coastal areas, as 50% of the population in Cyprus resides in these areas. The #potavristou campaign, enhanced by citizen science in monitoring marine litter, provided fit-for-purpose marine litter data and allowed AKTH to advocate responsibly on behalf of a large spectrum of citizens for effective measures to stop the excessive discharge of litter to the marine environment.



The #potavristou campaign in action / Photo credits: AKTH

Minister of Agriculture, Rural Development and the Environment of Cyprus, Prof. Costas Kadis during the clean-up of Yeroskipou beach in Cyprus / Photo credits: AKTH



**MAKHZOUMI FOUNDATION (Lebanon) set up a nationwide art contest to raise awareness on the seven principles of ocean literacy.**

Although ocean literacy has been a widely used and defined concept, it is still an unknown term in many countries and Lebanon is not an exception. To foster ocean-literate future generations, the Makhzoumi Foundation resorted to the organization of an art contest to encourage a wider grasp of ocean literacy and its principles by putting the artistic and creative skills of youth into action.

Prior to the contest, the Foundation produced educational material on ocean science, both in English and French, which was shared with the applicants through the contest registration. The Lebanese National Committee of UNESCO was also mobilized to ensure wide dissemination of the open call to schools throughout the country. The 106 registered participants to the contest, between the ages of 15 to 24, were approached by representatives of the Makhzoumi Foundation to ensure that ocean literacy and the guidelines to the contest were well understood.

Contestants were required to encompass the ocean literacy principles, and/or suggest solutions that address ocean related challenges, in their artwork under the categories of 'Performance media' (poetry, creative writing, sketch performance) and 'Visual media' (photography, film-making, drawing, painting, poster design). Six students were announced winners of the contest. The schools of the winners were acknowledged with tokens of appreciation, while the prize-winners received e-vouchers for their stay at an eco-friendly communal resort.



Painting by one of the winning participants, Ms. Sara Wissam Khalifeh (17 years old)



**OIKOTOPIA (Greece) mobilized students and artists to participate in coastal clean-ups and create art from rescued plastic for a two-day art festival.**

In the delta system of the protected Gallikos-Axios-Loudias-Aliakmonas estuaries, high concentrations of marine litter are documented as a result of intense fishing, mussel farming and agricultural activities, lack of awareness and mismanagement of waste streams. Floods, which occur more frequently and intensely due to climate change, and transboundary riverine inputs of marine litter, exacerbate the problem, as they relocate waste that has been immobilized for many years to various new locations in the hydrographic network.

To show the local community what the magnitude of the problem is and track the sources of the accumulated litter of the area, two clean-up events were set up in the estuary of Loudias and in the Kalochoi lagoon. More than 40 students, artists, mussel farmers, fishermen and volunteers joined forces to collect approx-

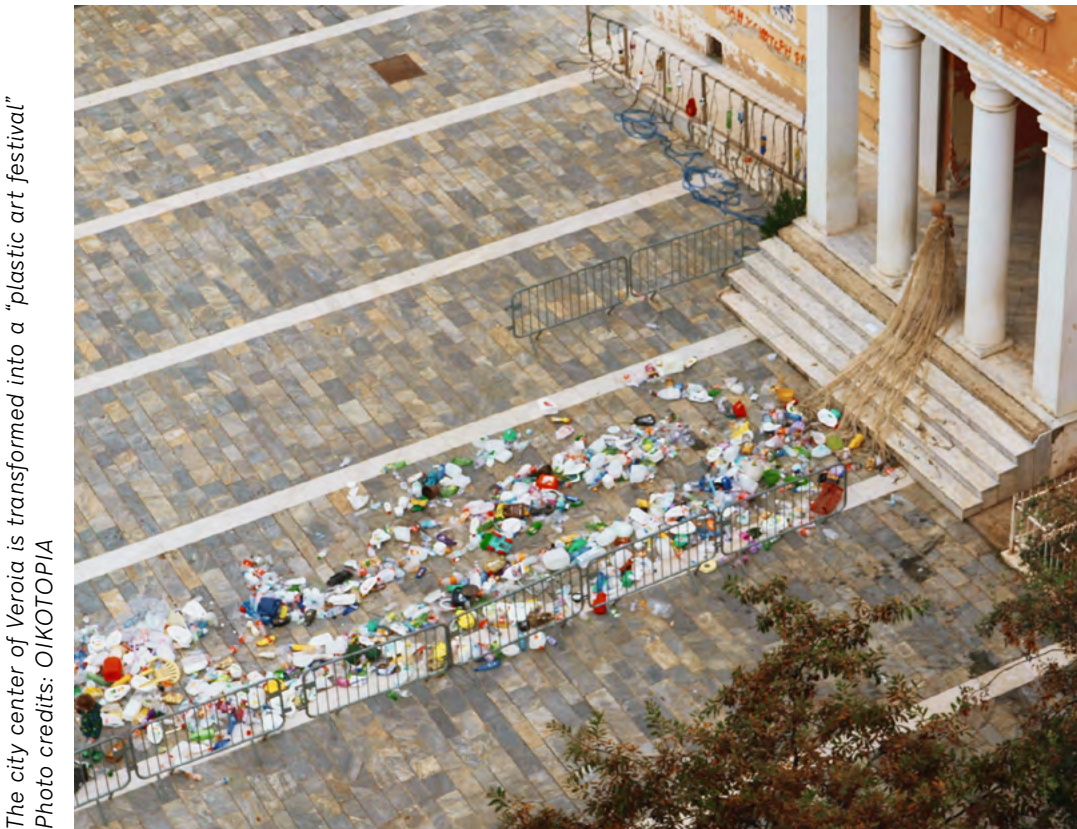
imately 1 ton of marine litter with the support and active engagement of the local municipalities and the Thermaikos Gulf Protected Areas Management Authority.

As a next step, an open-air art weekend at the city-center of Veroia (not a coastal city) was organized where stunning art constructed by 26 participating artists, art teachers and school students with the collected waste material from the clean-ups and from recycled plastic was exhibited for the public. Interactive games, installations, dance, music and visual performances took place over the two-day festival centered around inspiring action for a healthy ocean.

Civil society plays a key role in keeping marine pollution issues visible to the general public and also high on political agendas. Although not immediately apparent, the MAD event shed light on how, by engaging sectors of often opposing interests, messages for joint action can be more impactful and effective in influencing behavioral change, including for ocean responsibility.



High concentrations of marine litter in the estuary of Loudias / Photo credits: OIKOTOPIA



The city center of Veroia is transformed into a "plastic art festival" / Photo credits: OIKOTOPIA



Clean-up of Loudias during MAD 2021, Greece / Photo credits: OIKOTOPIA





**POSIDONIA GREEN PROJECT and POSIDONIA PROJECT CARLOFORTE organized an ocean themed cineforum in Spain and Italy, respectively.**

Dedicated to using film as a medium to increase public awareness of the environmental, social, and cultural importance of marine ecosystems, the film festival of “Ocean Lovers” was organized by the two organizations.

In Spain, the two-day event on the occasion of the Posidonia Green Festival was hosted at the premises of Institut de Ciències del Mar (ICM) in Barcelona and aimed to bring the general public closer to this marine research institute. The “Ocean Lovers” festival gathered around 60 researchers, artists, activists and citizens who participated in discussions about the relationship of coastal cities with the sea and the challenges their future faces due to sea level rise. Other themes discussed were gender-mainstreaming in the ocean sciences and maritime industry, the shipping

sector and the history of women in Cantabria (northern Spain) related to the fishing industry. A photographic exhibition on the importance and vulnerability of the polar regions was also part of the festival.

In Italy, the “Ocean Lovers” festival was hosted at the green community hub “alle Ortiche” in the center of Genova. Educational videos on the seven principles of ocean literacy and the work of the Marine Protected Area of Portofino were shown to some 55 participants, while various local NGOs exchanged good practices and showcased their ocean focused citizen science projects, such as the monitoring of Posidonia meadows.

The goal of these two MAD 2021 activities was to engage with sectors and disciplines outside of the traditional domains of marine sciences, such as the arts, to enhance the impact of the objectives of ocean literacy and foster the spirit of ocean stewardship.





**ASMP KELIBIA (Tunisia) celebrated the richness of Kélibia's marine and coastal environment and heritage.**

Safeguarding the Mediterranean Sea is everyone's responsibility and to protect it, we must first understand its many unique features and how they are impacted. Following this rationale, ASMP Kélibia decided to raise awareness about the unique coastline of Kélibia, the 300-kilometer transition zone between the western and eastern basins of the Mediterranean.

Three conferences were organized focusing on the socio-economic importance of the marine and coastal environment to the local communities, the gravity of the risks that poor management generates, the role of the ocean as climate regulator and the wealth of Kélibia's maritime heritage through presentations of underwater archeology case studies in the Cap Bon Peninsula. Another activity was a field visit to the beach of the famous Punic city of Kerkouane where young students, educators, fishermen and artists experienced Kélibia's marine environment in close proximity.

An art competition followed for the engaged students and their artwork varied from mosaics made out of items collected from the Kélibian coast, photos and paintings, poetry and ocean themed songs and melodies. A presentation of the chronicles of Kélibian women and the sea (bathing costumes, the use of seafood in local dishes, etc.) was yet another action enriching the MAD event. During the closing ceremony, all contestants received commemorative certificates and 3 participating students were awarded with special prizes for their "oceanic" artwork.



The Punic city of Kerkouane / Photo credits: WitR/Shutterstock



# Clean-up campaigns

**HEAD (Lebanon) promoted plastic waste upcycling as a low-cost, effective way towards a circular economy.**

For decades, Lebanon's waste management system has been highly inefficient, leading to a waste crisis in 2015. To this day, Lebanon, dealing with a wide variety of pressures, has no clear strategy for waste management.

Byblos is the oldest port in the world and the most touristic city in Lebanon. It is therefore highly affected by the problem of plastic pollution. In its MAD activity, HEAD collaborated with the municipality of Byblos, a leading municipality in Lebanon regarding green initiatives, and organized a clean-up campaign in which 270 students, scout movements, NGOs, local community, private and public sectors and representatives from nearby municipalities took part. The participants gathered 5 tons of waste, with plastic waste accounting for 1.3 tons. The collected caps of the plastic bottles were sorted and

dispatched to a factory to be upcycled into coasters signaling the opportunity for green jobs. HEAD took advantage of the holiday season and participated in several Christmas bazars selling the end-products at symbolic prices, promoting awareness of the marine litter challenge and the concept of circular economy through mitigation of plastic waste and reuse.

In parallel, a video was produced by university students who also starred in it. It aims to enhance ocean literacy and calls on viewers to dispose of their plastic waste responsibly in specific collection points throughout the country to be eventually upcycled and therefore prevent them from reaching the Mediterranean Sea. The video was widely broadcasted in national channels and fora, and notably on the 9th of December 2021, during an official side event at the 22nd Conference of the Contracting Parties (COP 22) to the Barcelona Convention and its Protocols, which was held in Antalya – Turkey.



Coasters made of upcycled plastic collected from Lebanese beaches / Photo credits: HEAD



Community beach clean-up of the Byblos coastline, Lebanon / Photo credits: HEAD



**GREEK ECO PROJECT (Greece) paid tribute to the beauty and richness of the protected wetland of Epanomi by mobilizing students, citizens, media and divers to remove 3 tons of litter.**

Designated under the Natura 2000 network, the Epanomi coastal lagoon is internationally considered to be an important area for many endangered marine species such as the black-striped pipefish (*Syngathus abaster*), the Mediterranean killifish (*Aphanius fasciatus*), as well as the vital carbon sinks of *Posidonia oceanica* meadows. One of the big-

gest pressures for the conservation of the area is plastic pollution due to mass tourism, agriculture and coastal development.

To understand the land and sea-based sources of pollutants, their potential impacts on ocean ecosystems and promote the value of Marine Natura 2000 sites towards attaining favorable conservation status for Mediterranean habitats and species, GREEK ECO PROJECT organized a series of activities for the sustainable use of the area and its resources. Broadcasted by the national Greek television, in 2 hours, more than 80 volunteers

and divers collected 3 tons of litter from the coast and seabed of Epanomi. The amount of litter collected and its investigation brought the various participating stakeholder groups face to face with the harsh tragedy of the commons: marine plastic pollution. Despite the EU and national legal ban of many Single-Use Plastic (SUPs) items, as per July 2021, and the promotion of scaling-up reusable alternatives (plastic or non-plastic), the prevailing collected items were plastic bags, bottles and derelict fishing gear.

After the successful clean-up event, colorful messages were painted by children on wooden signs to instruct the visitors to the area to respect its biodiversity, while seedlings were strategically planted by the young participants to ward off trespassing by cars.



Young participants in the coastal clean-up of Epanomi lagoon, Greece / Photo credits: Jenny Tagga



Divers retrieving marine litter from the seabed of Epanomi, Greece / Photo credits: Jenny Tagga





Beach litter monitoring of Saraya beach, Alexandria / Photo credits: AOYE



Dr. Sameh Riad, the MEDPOL and Marine Litter National Focal Point in Egypt  
Photo credits: AOYE

**Surveying marine litter and awareness raising on the impacts of plastic pollution are central in [AOYE](#) (Egypt) activities.**

AOYE organized a public awareness activity in Alexandria, in cooperation with the University of Alexandria, the Egyptian Environmental Affairs Agency and “Nahdet Masr”, a private company responsible for the solid waste management of the city, to raise awareness on the critical issue of plastic waste management in Egypt. Following an introductory session on the facts and figures of the marine litter challenge in the Mediterranean and the major share of plastics to the problem, 40 participants from universities, media, local officials and citizens were trained on how to properly perform beach litter monitoring. Immediately after, a beach litter survey was conducted at Saraya public beach of Alexandria.

This MAD activity complemented AOYE's on-going massive awareness campaign on banning Single-Use Plastic (SUP) products, in partnership with some 50 active NGOs aiming to reach out to local communities all over Egypt and raise their awareness on the harmful impact of SUPs at all levels, including on the health of oceans and promote environmentally friendly alternatives.



**AOYE**  
المكتب العربي للشباب والبيئة  
The Arab Office for Youth and Environment



# Advocacy, Awareness raising and capacity building activities

**EMSEA-Med** organized educational workshops for school students in Croatia, Italy, and Greece and launched its multi-lingual Mediterranean Sea Literacy guide.

The Mediterranean regional group of the European Marine Science Educators Association (EMSEA-Med) organized under MAD 2021 the “Let’s meet the Med – Mediterranean Sea Literacy” action entailing a series of hands-on educational activities for pupils of ages 7-12 years old in three Mediterranean countries. In Zadar (Croatia), primary school students sampled marine organisms from the nearby local beach and identified them using stereoscopy. In Monfalcone (Italy) and in collaboration with Associazione Scienza under 18 Isontina, the participating students learnt about the Mediterranean marine food webs and their threats, while in Rahi-Tripotamos (Greece) elementary school students, through handicraft activities and presentations, learned how our lives would be without marine photosynthetic organisms. Overall, 90 students and educators took part in the workshops that were adapted to the local context

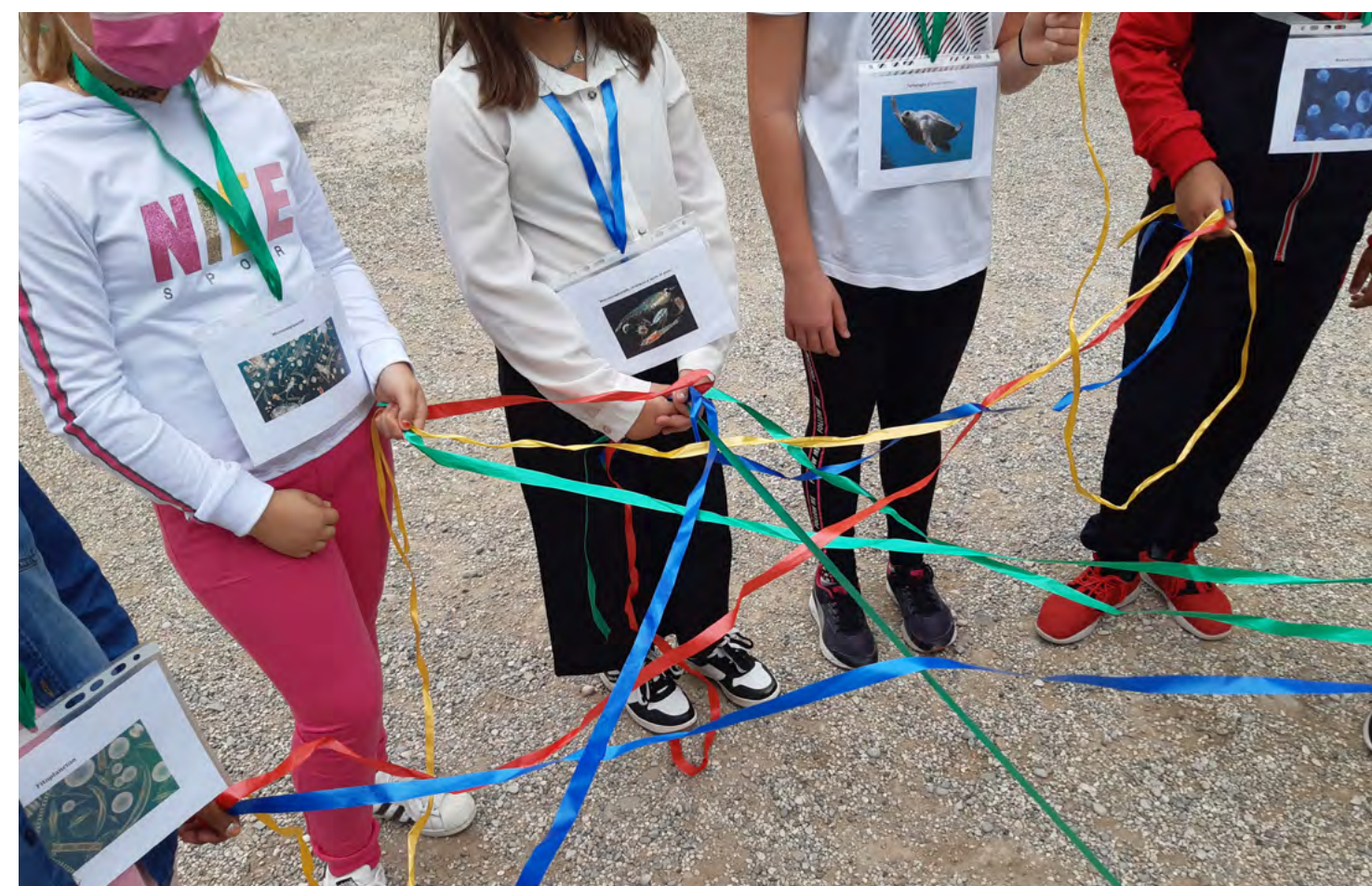
and prevailing conditions, aiming to enhance the participants understanding, wonder and appreciation of our oceans.

Diversity of languages in the Mediterranean region can be an inhibiting factor when it comes to communicating ocean literacy in a harmonised way. EMSEA-Med has therefore developed within MAD 2021 a [resource](#) in four different languages: Croatian, Italian, Greek and English. This Mediterranean Sea Literacy (MSL) guide consists of seven essential principles and 43 fundamental concepts, all adapted to the specificities of the Mediterranean Sea, which serve as guidance to educators, teachers, scientists, non-governmental organizations, policymakers, the blue business sector, as well as the general public, to raise awareness and help create a Mediterranean-Sea-Literate society. The guide was based on the article of Mokos et al. (2020), a 3-year multidisciplinary collaborative process from the researchers and educators of the EMSEA-Med group<sup>1</sup>.

<sup>1</sup> Mokos et al. (2020). Mediterranean Sea Literacy: When Ocean Literacy becomes region-specific. *Mediterranean Marine Science*, 21(3), 592-598. doi: <https://doi.org/10.12681/mms.23400>



Students exploring their local Adriatic coast / Photo credits: Melita Mokos



Pupils of primary school “E. Toti” in Monfalcone modelling marine food webs / Photo credits: Valentina Presil



# MEDITERRANEAN SEA LITERACY



Collaborative art from the students of Rahn-Tripotamos for MAD 2021 / Photo credits: EMSEA-Med



**EKO KVARNER (Croatia) organized the scientific conference “Understanding the Adriatic Sea” to advocate on the multiple stressors the ecosystem is facing.**

The Adriatic is a semi-closed and shallow sea, and its marine resources and ecosystems are at risk from the impacts of pollution, overfishing, unsustainable tourism and climate change. To effectively and actively protect the sea, a stronger understanding of its value is needed from all societal actors.

Guided by this, EKO KVARNER, together with the University of Zadar, the City of Krk and the Krk Tourist Board, organized a two-day conference gathering more than 60 participants, while receiving extensive media coverage. Experts presented the current ecological state of the Adriatic, the growing threats to its endangered biodiversity, such as the disappearing

marine species of *Pinna nobilis*, national initiatives and projects on marine citizen science, as well as the introduction of ocean literacy in national school curricula. Following the outputs of the conference, a network of 23 participating scientists was established who proceeded to propose an [Action Plan](#) of 12 measures for the sustainable development of the Adriatic Sea to the President of the Republic of Croatia. The Action Plan emphasized the role of multidisciplinary and formal, non-formal, and informal education on ocean literacy to set the Adriatic Sea back on a “blue” track. More specifically, it was proposed to establish regional educational centers to train teachers on ocean literacy and marine sciences in cooperation with scientific and educational institutions as well as civil society organizations.



“Understanding the Adriatic Sea ecosystem” conference / Photo credits: Daria Ezgeta



EUROTurtles exhibition at the seafloor of Krk, Croatia during the second day of the conference / Photo credits: EKO KVARNER



**LHAP (Jordan) ran a survey as a first step to shortlist effective measures against marine pollution of the Aqaba and Dead Sea coasts.**

Before proposing effective measures for the protection of the Aqaba and Dead Sea coasts in Jordan, LHAP opted to collect the views and perceptions of visitors and local residents in selected sites through a survey. The purpose of the study was fourfold: (i) to assess the public’s perceptions on the litter problem on the two coasts, (ii) to collect useful information for a management plan in a

participatory manner for each site, (iii) to use the obtained results from the 276 surveyed citizens as a baseline, to eventually evaluate the effectiveness of any applied measures, and (iv) to inform the public on the ecosystem services provided by coastal systems, the pressures and risks imposed and the actions that could be taken by local authorities and citizens to mitigate them. The findings and lessons-learned of the study led to the formulation of recommendations that were shared primarily with the Jordan Valley Authority and the Aqaba Special Economic Zone Authority (ASEZA), but also with the

partners of other relevant ongoing projects of the NGO on disaster risk reduction. This was done with two dedicated workshops, attended by 200 people. Of the proposed recommendations, two focus on actions needed to be taken by the local authorities, namely to increase investment for integrated coastal waste management and for the provision of basic services to visitors. Setting the carrying capacity and limiting access in a socially sensitive manner so as to control the ever-increasing flow of visitors - especially during the weekends and holidays - was also a resulting recommendation.



The Aqaba coast, Jordan / Photo credits: Mohammad Naser



Presentation of the survey results to the Zarqa Maeen focus group, during one of the LHAP workshops  
Photo credits: LHAP





**CIRCOLO FESTAMBIENTE** organized a series of awareness raising activities to improve local knowledge on marine invasive alien species.

Aiming to sensitize citizens of different age groups and interests about marine alien species and how to identify them, learn about their negative impacts on marine biodiversity and human well-being, as well as discuss actions for their management, Circolo Festambiente organized several awareness raising initiatives. Teaming up with a local sports association and a fishermen's cooperative, the NGO held a hiking and paddling excursion to the Marina di Grosseto port where engaging discussions between biologists, paddlers and local fishermen were held on the economic and environmental impacts of invasive alien species. The following day, an educational laboratory took place at the annual Festambiente environmental festival, during which children between 4-10 years old were guided to distinguish endemic from non-native fish species through creative interactive games.

As a closing activity, fishermen from the Tuscan coast were interviewed and surveyed to gather data on the most abundant alien species fished in the area. 14 species were identified by the fishermen, who voiced their concerns on this prominent issue. Overall, the activities highlighted how fundamental the contribution of every citizen in maintaining a healthy, clean, and biologically diverse ocean is, ultimately leading to more sustainable oceans and societies.

**festAmbiente**



"Fishing aliens" Workshop at Rispeccia / Photo credits: Circolo Festambiente



The alien catch of the day / Photo credits: Circolo Festambiente



Surveying fishermen in Marina di Grosseto / Photo credits: Circolo Festambiente





The "ocean trainers" of MAD 2021 / Photo credits: AEKelibia

**20 young Tunisian trainers led educational workshops on Mediterranean marine biodiversity during [AEKelibia's](#) activity.**

The Kélibia Environment Association (AEKelibia) developed its activity by leveraging youth training skills, and ensuring comprehensive capacity development to raise awareness on the main pressures to Mediterranean marine ecosystems and biodiversity. To put these skills into practice, 20 young "trainers", aged 14 to 20 years old, facilitated three thematic workshops in Kélibia on the life cycle of sea turtles, their importance for Mediterranean marine food webs and the threats they face stemming from human activity. The importance of the endemic Posidonia meadows for the good status of the Mediterranean Sea and the many ecosystem services they offer was also on the workshop agendas. Overall, more than 70 children participated in the three workshops, 10 of which were awarded for their active participation with the "bag of champions" consisting of ocean-themed novels and educational games.

Beach cleaning campaigns, in which more than 150 beach visitors participated, and drawing sessions for young volunteers entitled "the beach through the eyes of the children" were running in parallel in the Manssourah beach near the city.



**ECO-UNION** organized **Blue Eco Forum 2021**, a high-level, multi-stakeholder event centered around sustainable blue food in the Mediterranean.

In the Mediterranean, blue food, sourced mainly from fisheries and aquaculture, is already a major sector of the region's blue economy with a strong impact and dependency on the quality of marine ecosystems. Shifting the way blue food is produced, regulated and consumed is critical to promote low-carbon, resilient and ocean literate Mediterranean societies.

The Blue Eco Forum (BEF) is an annual space for discussions on the challenges and opportunities of the blue economy in the Mediterranean region. Linking with MIO-ECSDE's MAD 2021, [this year's Eco Forum](#) presented best practices and policy trends in the sustainable management of marine resources and raised awareness on the opportunities for sustainable economic growth linked to the ocean through online sessions of round tables and debates. Over the course

of a day, 16 renowned speakers from major regional and local institutions (UNEP/MAP, UfM, MedCities, ICLEI, CE, Barcelona City Council), academia (UAB, ICTA, UB, IGOB, UPC), CSOs (WWF, IUCN, Oxfam, MIO-ECSDE, Ecologists in Action, SeasAtRisk) and the private sector (ASCAME, Chambers of Commerce, etc.) generated a constructive dialogue on the problems of sustainable management of the Mediterranean Sea with the aim of proposing innovative solutions aiming to serve as a reference point for the implementation of the Sustainable Development Goals (SDGs). Overall, 60 participants gathered valuable and inspiring insights, and connected through interactive sessions on how circular economy, systemic change and sound governance will accelerate the sustainable blue food transition in the Mediterranean.



Photo credits: Canva



# TOWARDS SUSTAINABLE BLUE FOOD IN THE MEDITERRANEAN

BLUE ECO FORUM 2021



**The Jordanian Society of Friends of Heritage** advocated for the role of sustainable diving to conserve the marine life of Aqaba.

Combining MAD 2021 and the World Oceans Day, the Jordanian Society of Friends of Heritage (JSFH) organized a workshop focusing on the role of the diving industry in promoting the conservation of the unique coral reefs of the Gulf of Aqaba and enhancing environ-

mental awareness for the preservation of the Gulf’s biodiversity. Under the auspices of the Jordanian Ministry of the Environment, the workshop highlighted the environmentally friendly activities of the 35 diving centers of Aqaba, such as organizing underwater clean-ups, promoting eco-diving, building artificial reefs to create new diving sites and developing diving guides for the local marine biodiversity. The impacts of climate change on the local marine ecosystems were also discussed

by the 70 participating stakeholders (mainly from the local community, university students and representatives from the Ministry). The workshop stressed that the ocean literacy movement can count on non-scientific professionals that shape people’s understanding of and appreciation for the ocean and people who engage in marine recreation, such as divers, who are important actors in advancing this process.

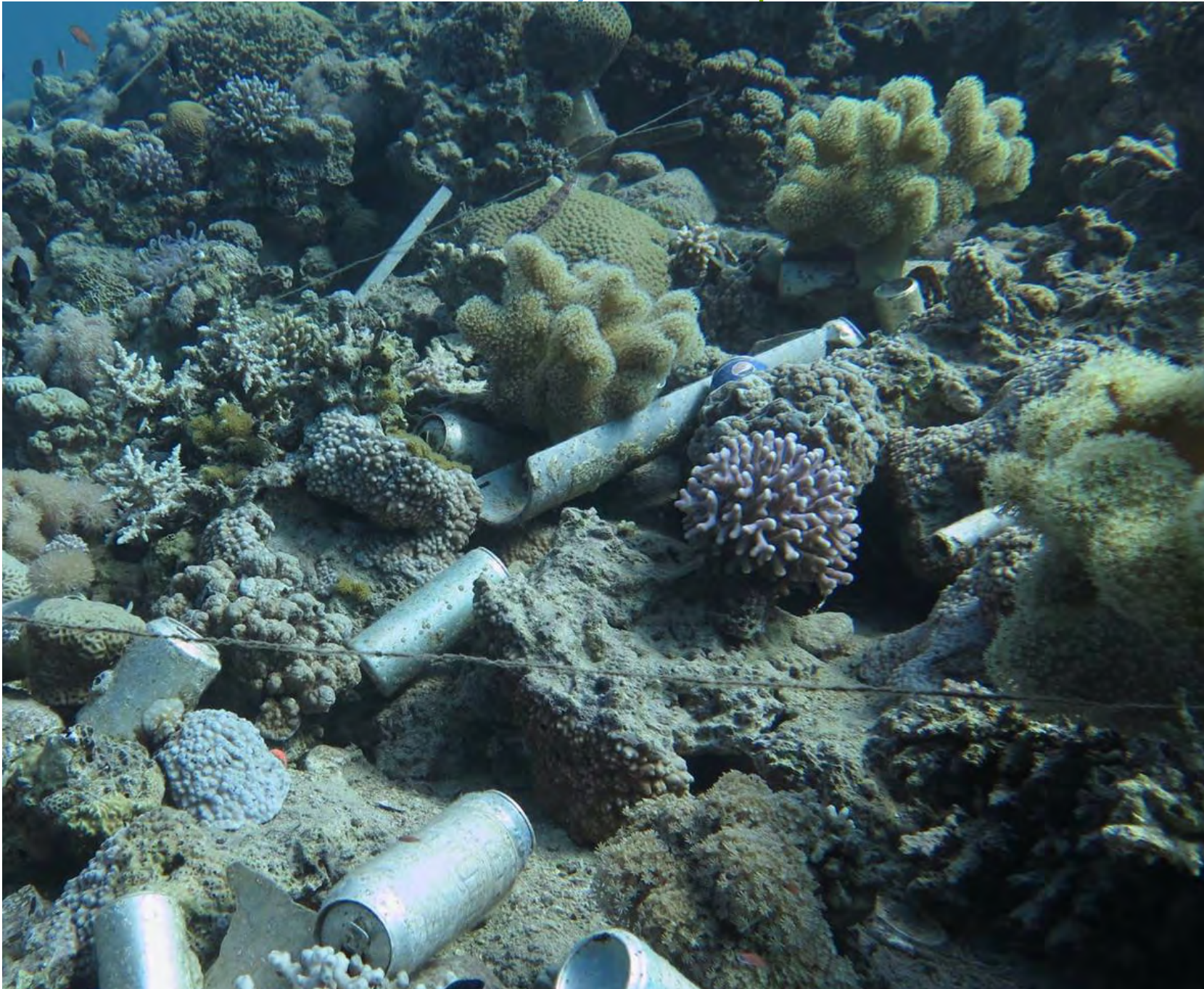


Photo credits: JSFH





Recording videos on ocean literacy / Photo credits: Giorgia Moclinsk



Conducting interviews inside an art installation made of plastic / Photo credits: Tommaso De Lorenzi

**DelTa (Italy) empowered 19 young ocean literacy advocates as agents of change.**

As online social media have become popular with the younger generations for learning, sharing knowledge and communicating, DelTa (Delfini e Tartarughe nel Golfo di Trieste) created the social media campaign “[Ocean Influencers](#)” as a present-day, attractive, and effective tool for new ways of ocean science communication. The NGO introduced 19 high-school students and master students from the University of Trieste to the principles of ocean literacy and trained them to carry out a series of online surveys and interviews to assess views and perceptions of citizens and professionals on marine pollution, overexploitation of marine resources, seafloor destruction and marine alien species. The collected information from 50 face-to-face record-

ed interviews and 120 responses to the survey was used to produce in total 36 short videos, which were disseminated through social media, reaching more than 5,000 viewers. Through this on-going interactive action, the students acquired a deeper understanding of the complexity and challenges of communicating ocean related issues, developed critical thinking, skills and capacity to obtain reliable sources of information in the process of becoming ocean literate and made a simple, yet essential effort to make ocean literacy more inclusive and accessible.



“Ocean influencers” in action during the “Barcolana regatta” in Trieste / Photo credits: Tommaso De Lorenzi



**CMED reinforced the importance of addressing ocean literacy through formal education in Morocco.**

A seminar on “The role of education and science communication in the implementation of the United Nations Decade of Ocean Sciences” was organized by CMED, at the Mahd Al Marifa institute, to educate the participating students on the prevailing Mediterranean Sea challenges, as well as the means and tools available for its preservation, in order to accelerate the achievement of the Sustainable Development Goals, especially Goal 14: Life Below Water. Different approaches that can be adopted through formal and informal education and the pioneering education activities on sustainable development and ocean literacy carried out both by the Moroccan Ministry of the Environment and national NGOs were presented during the seminar.

A youth creativity competition wrapped up the seminar, in which some 35 students participated, while a field trip was also organized to the Moulouya estuary, designated as a Site of Biological and Ecological Interest (SIBE) and Ramsar site, where the students observed the migratory avifauna, visited the Awareness and Education Center to learn more about the biodiversity of the site and collected waste from the protected area in a clean-up effort.

Following the successful event, the Mahd Al Marifa institute expressed its willingness to establish an education club for sustainable development in the institute with the support of CMED, and introduce ocean creativity competitions and clean-ups as an annual activity for the students of the institute.



Moulouya Delta / Photo Credits: Wikiland





**SCSEP (Syria) leveraged the media to connect global ocean issues with local narratives and generate an understanding of the importance of the ocean.**

To celebrate MAD 2021, the head of the Syrian Coast Society for Environment Protection succeeded to hold several interviews on TV, in newspapers and radio channels and in this way familiarize the wider public on ocean literacy. This was combined with a clean-up campaign that was held in the Southern Cornich Lattakia beach where more than 500 persons participated from civil society organizations, scouts, universities, the private sector and the media.



In parallel, on the occasion of the Syrian National Environment Day and under the patronage of the governor of Lattakia, SCSEP organized a multi-stakeholder workshop entitled “Together for a better Mediterranean Sea”, gathering more than 90 attendees from 18 local and national organizations. Experts from the national High Institute of Marine Research were invited to present the status of the Syrian marine and coastal ecosystem and discuss the required measures and mitigation strategies regarding overexploitation of marine resources and marine pollution.

Clean-up of the Lattakia Beach / Photo credits: SCSEP



During the multi-stakeholder workshop: “Together for a better Mediterranean Sea”  
Photo credits: SCSEP



# White paper “The Mediterranean Sea We Want”

Prof. Michael Scoullas, Chairperson of MIO-ECSDE, is one of the 58 authors from 14 countries that have collaborated in the development of a white paper entitled “The Mediterranean Sea We Want” and published in the Ocean and Coastal Research journal. The paper presents the main science needs, gaps, and challenges for implementing the UN Decade of Ocean Science for Sustainable Development 2021-2030 (Ocean Decade) in the Mediterranean region and stems from regional consultations on the implementation of the Ocean Decade in the Mediterranean.

More specifically, the paper reviews the state of play in the Mediterranean science for each Ocean Decade outcome and identifies research trends and challenges as well as capacity development needs for the unique environmental and socio-economic conditions of the Mediterranean. The authors make recommendations on

knowledge needs and the development of co-design actions. By integrating and improving our scientific knowledge, Ocean Literacy, and ocean observing capacities, building on international cooperation, it will be possible to reach the Mediterranean Sea we want.

This white paper serves the development of the Ocean Decade Programme SciNMeet, subtitled The Science We Need for the Mediterranean We Want, led by the Italian Oceanographic Commission (COI) and endorsed by the IOC-UNESCO. MIO-ECSDE is one of the 20 organizations participating in the co-design and implementation of the Programme in 27 countries, and proud to be a Member of the SciNMeet Steering Committee.

Link to the paper: <https://www.scielo.br/iocr/a/zWVNJ8YdNrbsSb87yFZKGVC/?format=pdf&lang=en>







# Mediterranean Information Office for Environment, Culture and Sustainable Development (MIO-ECSDE)

## Who we are

We are a non-profit Federation of 133 Non-Governmental Organizations (NGOs) working in the fields of environment and development in 28 countries of the Euro-Mediterranean area.

## Our mission

To protect the natural environment and cultural heritage and promote Sustainable Development in a peaceful Mediterranean by bringing together the efforts NGOs, governments, international organisations, other socio-economic partners and networks.

## What we do

We act as a technical and political platform furthering synergies and strengthening public participation on resources and waste, nature and biodiversity, cultural diversity, climate change, health and environment as well as on horizontal and cross-cutting issues.

## A network of networks

We facilitate the work of four other networks of major Mediterranean stakeholders:

- MEdIES, the Mediterranean Education Initiative for Environment and Sustainability
- COMPSUD, the Circle of Mediterranean Parliamentarians for Sustainable Development
- COMJESD, the Circle of Mediterranean Journalists for Environment and Sustainable Development
- MedUnNet, the Mediterranean Universities Network for Education for Sustainable Development.

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