SEALABS

A CITIZEN SCIENCE PROJECT FOR THE SALING COMMUNITY

Photo: WCC James Mitchell

SEALABS

A **citizen science project** that leverages the potential, scope and impact of the large **community of sailors**.

AMBIENTE EUROPEO

SEALABS is a project of Ambiente Europeo Association

SeaLabs is a citizen science project that leverages the potential, scope and impact of the large community of sailors.

SeaLabs aims to drive public participation and understanding of our marine ecosystems by entrusting citizens with the responsibility of obtaining data.

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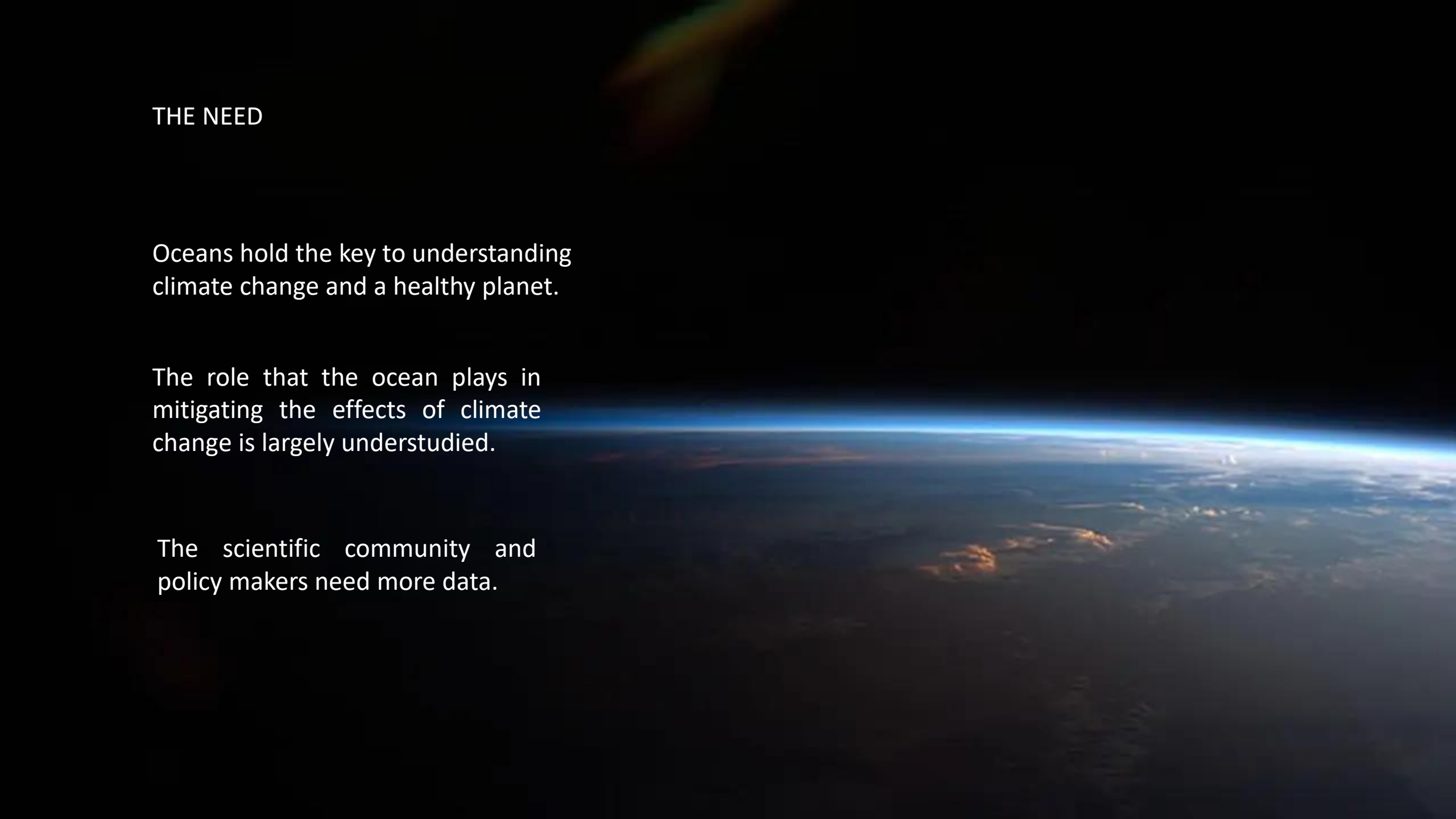
Sailors undertaking crossings or navigating long distances have the opportunity to gather reliable evidence to advance policies that protect the ocean, marine wildlife, the food we eat and the air we breathe.



THE NEED

Oceans hold the key to understanding climate change and a healthy planet.

The role that the ocean plays in mitigating the effects of climate change is largely understudied.

The scientific community and policy makers need more data.

Citizen science provides a valuable resource to the scientific community, helping to provide much larger datasets than scientists alone would be able to capture.

MAIN OBJECTIVES

• Contribute to **scientific knowledge** by increasing data collection on sea water quality by the sailing community (citizen science).

• Contribute to a world driven by data.

• Contribute to **raising social awareness** about marine sustainability and the health of our seas.

• Encourage **participatory processes** in the search for solutions to environmental problems following the European guidelines on environmental protection.

• Contribute to the development of a **community of informed and committed sailors** acting as true ambassadors of our seas and «**agents of change**».

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DATA COLLECTION KIT

SeaLabs project provides crew members of participating sailboats with an easy to use kit.

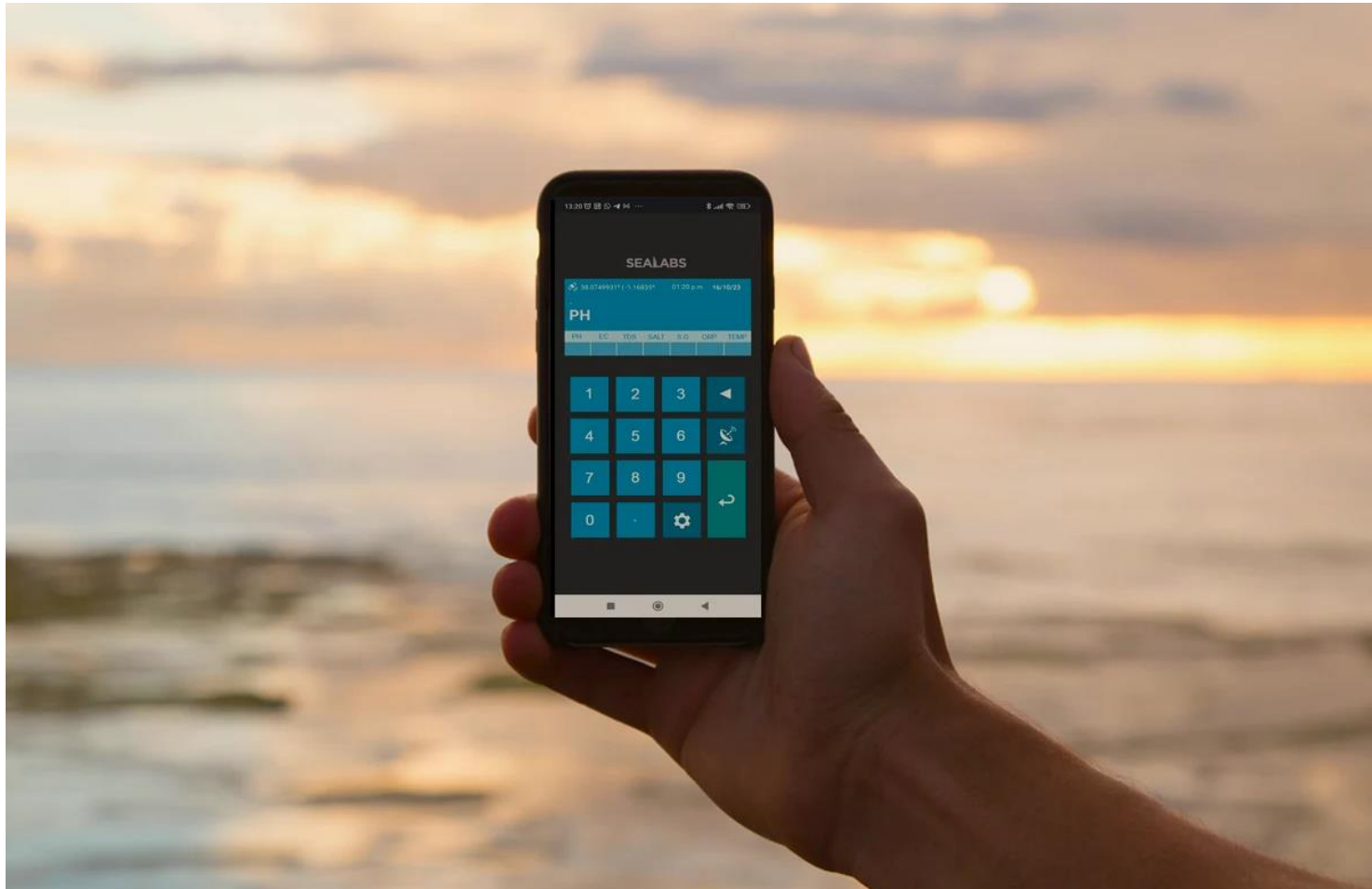
With the stainless steel container sailors collect the seawater samples to be analyzed using an electronic sensor to measure several key ocean parameters during their navigation.

Photo: WCC James Mitchell

SEALABS APP

SeaLabs **App** is a user friendly tool to manage data collection and transmission.

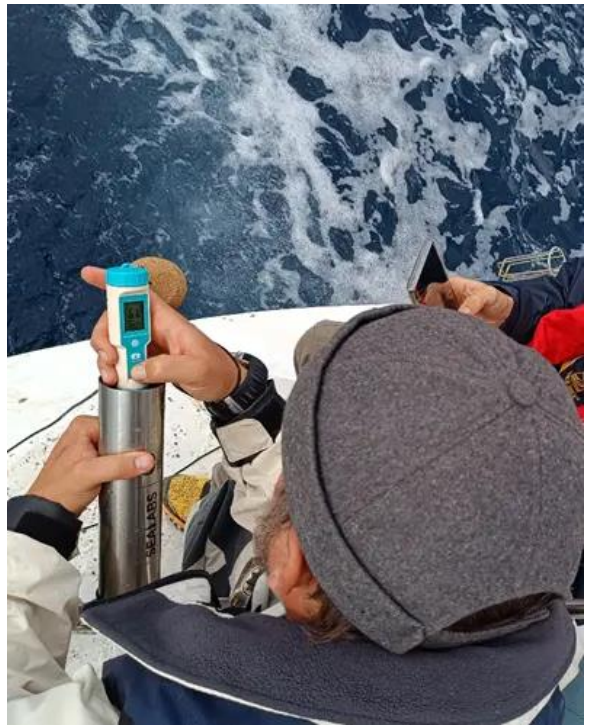
The information obtained with the sensor about the paramaters is entered into the SeaLabs App that sends the results to an open to the public database.



PARAMETERS

Understanding the state of the ocean is essential to our future.

Crew members obtain information about 7 different key parameters that provide evidence about the quality of seawater.



pH

pH (Potential of Hydrogen)

Ocean acidification, primarily due to increased atmospheric CO2, is a growing concern. Monitoring pH helps in understanding its impact on marine ecosystems and predicting future challenges for marine organisms.

EC

EC (Electrical Conductivity)

By monitoring EC, scientists can swiftly assess the saltiness of ocean water and track pollution sources or freshwater inflows.

TDS

TDS (Total Dissolved Solids)

Monitoring TDS can help in understanding issues related to pollution or changes in ocean salinity.

SALT

Salinity

It's vital for studying the ocean's role in climate regulation and understanding local ecosystem adaptations.

SG

SG (Specific Gravity)

By studying S.G., scientists can gain insights into ocean salinity variations and their potential effects on marine life.

ORP

ORP (Oxidation-Reduction Potential)

It's used to assess the health of marine ecosystems, especially in areas affected by pollution or other chemical imbalances.

TEMP

Temperature

Monitoring temperature helps researchers track global warming effects and predict shifts in marine biodiversity and habitats.

MORE ABOUT PARAMETERS

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PHASE I

[COMPLETED] √

Pilot test to assess feasibility and interest in the project.

We piloted our Sealabs kit and newly developed app with 20 sailboats (around 150 crew members) in the 2023 edition of the Atlantic Rally for Cruisers (ARC).

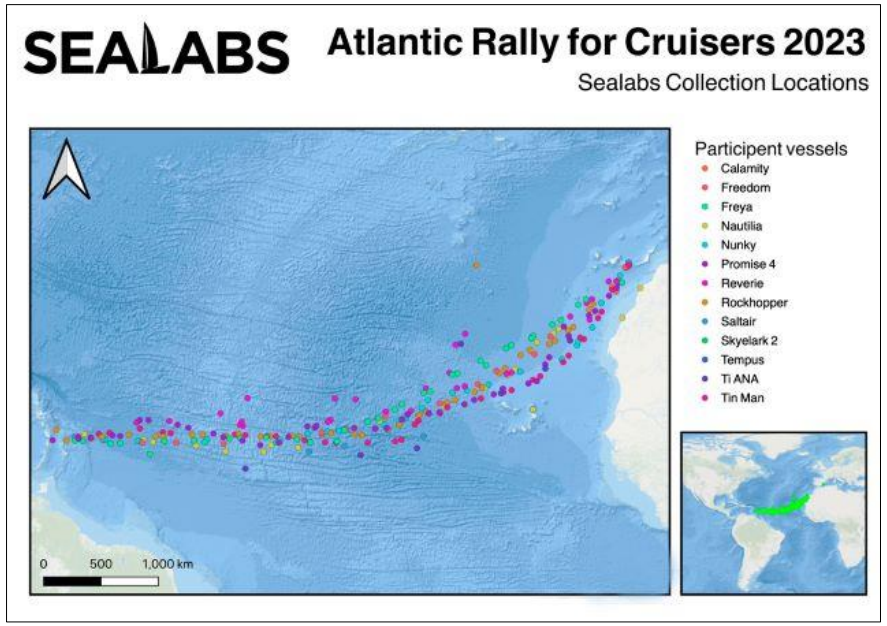
These vessels were outfitted with the SeaLabs kits and app than enabled comprehensive data collection on their transatlantic cruise from Gran Canaria (Spain) to the island of Saint Lucia in the Caribbean Sea.

20
Boats

373
Data Points

77%
Participation

The pilot test was covered by local, national and international media and attracted the interest of the ARC organizers and numerous crews.

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ARC
Atlantic Rally for Cruisers
Gran Canaria to Saint Lucia
2023
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Photo: SOPHIE DINGWALL


Photo: WCC James Mitchell

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PHASE II

Current phase of further development and research, both technical and focused on the search for partners, communication opportunities and fundraising.

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The funds raised for Phase II will be used to:

- The acquisition of materials for the development and production of proprietary sensors and kits that will equip 55 vessels for the crossing of the Atlantic Ocean in November during the 2024 edition of the ARC and ARC+ (Atlantic Rally for Cruisers).

- Logistical assistance for the distribution of sensors/kits and promotion of SeaLabs during the ARC /ARC+ 2024 in the port of Las Palmas de Gran Canarias, Spain.

THE SENSOR

- Development of our own affordable and user friendly sensor to replace the current commercial devise.

- Explore Bluetooth data transmission.

- Tests and adjustments.

- Improve pH calibration.

- Adapting the new sensor to citizen scientists feedback.

THE APP

- APP changes and improvements based on sailors feedback after the 2023 Atlantic crossing.

- Explore Bluetooth data transmission.

- Data storage procedure.

- Explore gamification possibilities.

- Develop the iOS version.

THE KIT

- Improve kit portability and storage

- Adapt the protocol.

- Develop short video and webinar tutorial.

DATABASE

- Develop and maintain an open to the public database with georeferenced information that will be a resource of interest to various sectors of society.

COMMUNICATIONS

- Develop and maintain a web page to consult data and information about the project.

- Communicate the project, its results, impact and sponsors, funders and collaborators to the general public.

- Make a communication video of the project.

SUPPORT & PARTNERSHIPS

- Actively seek sponsors, donors and partners to ensure the economic, technical and institutional sustainability of the project.

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PHASE III

INTO THE NEAR FUTURE

- Develop our own sensor to measure the presence of **microplastics** in the sea water.
- **Expand** the project to as many countries as possible with a nautical tradition.
- Promote the database and its use.
- Promote **synergies** with different types of organizations and institutions to develop publications.
- Develop, maintain and constantly expand the number of participating boats, crews and sailing organizations.
- Develop **gamification** strategies for data collection.
- **Inclusion** of underrepresented groups.
- Develop **educational** and marine sustainability initiatives.

SEALABS TEAM

DANIEL ROLLERI

. Founder and director of AE.
. Extensive experience in citizen science projects.
. 30 years of experience leading projects defending the ocean in Argentina, USA and Spain.
. Strong network of international contacts.

EMILY PAPPA

. Biologist.
. SeaLabs project leader.
. Manager of AE's citizen science initiatives.
. Outreach coordinator.

PINO BRENNER

. Industrial designer.
. Scientific diver.
. Project manager of AE.
. Content creator.

LUISE WAGNER

. Journalist and manager of scientific events.
. Responsible for AE's citizen science project in the Canary Islands.
. 17 years sailing experience.
. Sailing community liaison.

ALAIN HIERRO

. Dropson CEO.
. 20 years of experience creating environmentally friendly water treatment products.
. Extensive multidisciplinary expertise in water chemistry and physics, thermodynamics, electronics, IT and fluid mechanics.

TECHNICAL PARTNER

The Sealabs kit and its smartphone application have been developed in collaboration with our partner Dropson, a company specialized in the development of environmentally friendly water treatment systems.

the new way of treating water
dropsoN

COLLABORATIONS

ARC Atlantic Rally for Cruisers Yachting World
Living Ocean Society
MONASH University
ESCP BUSINESS SCHOOL

ABOUT AMBIENTE EUROPEO ASSOCIATION

Ambiente Europeo (AE) is a nonprofit organization that informs, inspires, empowers and mobilizes people towards a new culture of sustainability that contributes to the good health of our seas.

Through effective communication channels, educational programs, and citizen involvement we engage in sound synergies with various sectors of civil society, such as farming activity, industrial fishing, arts, sports, education, culture, and sustainable fashion.

OUR EXPERIENCE WITH CITIZEN SCIENCE

For more than 15 years, AE has been leading efforts in Spain to reduce the impact of **marine debris** as country coordinator organization for Ocean Conservancy's International Coastal Clean-up Project, the world largest citizen science initiative with more than 1 million volunteers yearly worldwide.

AE ACHIEVEMENTS IN SPAIN:

1020+	Citizen science clean-ups	**480+**	Kilometers covered
340+	Participating local organizations	**126+**	Tons of marine debris removed
32.000+	Volunteers involved	**2.2 million+**	Items registered in our database

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International COASTAL Cleanup

Ocean Conservancy


YOUR INVOLVEMENT MATTERS.
BE PART OF THE CHANGE,
BE PART OF THE SEALABS
COMMUNITY.