

EMBRC empowers society to lead green actions

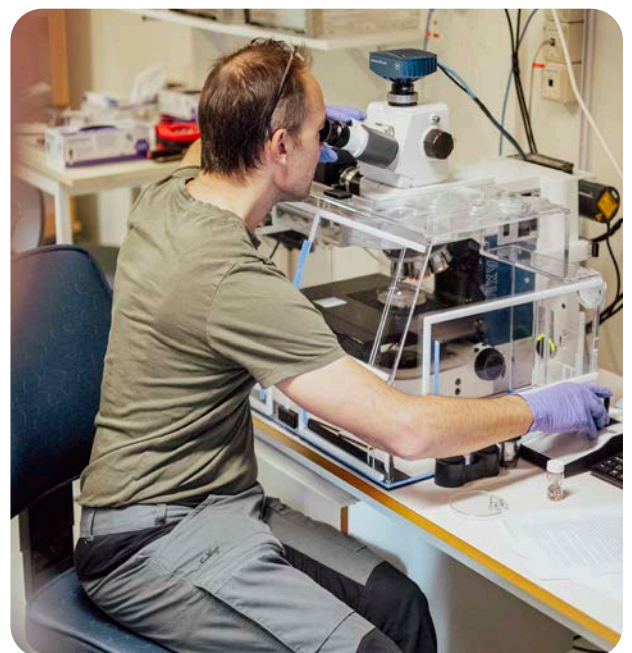
With its expertise in marine biology and ecology, the institution drives scientists, policymakers, industries and citizens towards a future where oceans will be protected and sustainably managed.

Our seas and ocean cover over 70% of our planet. The ocean is responsible for producing about 50% of the oxygen on our planet and absorbs 25% of our CO₂ emissions. Over 3 billion people depend on marine biodiversity for their livelihoods. As the effects of climate change worsen and human activity keeps taking its ever-growing toll on the marine world, never has our ocean, and the services it provides, felt so vital to our societies and our economies. In this context, marine biology and ecology play a crucial role in protecting, managing sustainably and restoring our ocean's ecosystems.

**Over 3 billion people
depend on marine biodiversity
for their livelihoods.**

The European Marine Biological Resource Centre (EMBRC) was created a decade ago as an accelerator for marine science. Since then, the consortium has exceeded its initial ambition. Scientists all around the world can use its high-calibre technological platforms and have unprecedented access to its marine research data. It is a nexus where researchers can collaborate and codesign joint projects undertaking global environmental issues. Beyond its consequential support to marine research, EMBRC works closely with companies, investors, the sustainable blue economy stakeholders and policymakers. The research infrastructure has promoted the blue economy since its beginnings. This concept, supported by the United Nations (UN), encompasses all economic activities that can exploit marine resources while preserving the health of our marine ecosystems.

EMBRC's bioprospecting platform, for example, allows researchers to find particular marine organisms. These organisms produce biological compounds that can be used to create innovative food supplements, cosmetics, active molecules or drugs. By using a combination of different services, EMBRC users are able to understand the ecology of a certain marine environment, select potential organisms of interest, scan their genetic material and find biological molecules with potential biotechnological applications. All these services are harmless for the environment. The institution also focuses on model organisms, such as starfish and sea urchins. These organisms are easy to breed and maintain in a laboratory setting and they are very useful to understand biological processes. In the long run, studies on model organisms can lead to new or better treatments against cancer and other human health disorders.



Researcher in laboratory of Kristineberg Centre, EMBRC Sweden

“What makes EMBRC unique isn’t limited to the marine stations, or the scientists and their discoveries,” says Mery Piña, EMBRC Industries Liaison Officer. “It’s also about how this network of labs and experts is supporting entrepreneurship and innovation.” A case in point is how developing and strengthening sustainable aquaculture has been a major part of EMBRC’s agenda. Recently, a growing number of companies have started producing fish feed from algae. Easy and fast to grow, algae are a sustainable source of nutrition for fish farms. Fish feeds are traditionally made from particular fish species caught at sea such as blue whiting and anchovy. Using algae instead could help reduce fishing pressure on these species. But since this product is quite new, these companies need to test their feed efficiency with different species, feeding techniques and water quality conditions. “For these fish feed companies, EMBRC has top-of-their-class facilities for fish nutrition experiments,” explains Mery Piña. “Moreover, most of these new companies are start-ups that usually can’t afford to invest in these types of facilities or hire staff with the level of expertise found at EMBRC.”

“Everybody can learn about marine biodiversity and do their part to help research: it’s a nice way to encourage citizen science,”

Mery Piña

EMBRC has a long tradition partnering with policymakers as well. “As we face many important challenges such as climate change, food production and biodiversity crises, marine ecology has gained more and more importance in environmental policies,” observes Marco Borra, Attaché Scientifique at the Italian Embassy in Paris and Italian delegate for EMBRC General Assembly. EMBRC is composed of multiple sub-networks of marine stations and experts located in each of its country members, such as Sweden or Italy. According to Marco Borra, these nodes play a remarkable role at the national level. “In Italy for instance, when the government wants to invest in marine science, it will rely on the expertise of EMBRC Italy (the local EMBRC network) that will act as a central hub for the whole Italian marine biology and ecology community”, he explains.



Students at the Kristineberg Centre, a marine research station part of EMBRC Sweden

“It’s a very new and innovative change.” For Marco Borra, EMBRC is bound to have the same key role at the European level. “The consortium can become an advisor for the European Commission policymakers on every issue regarding the exploitation of marine resources,” he says. The marine biodiversity data collected by the EMBRC network can assist countries in establishing protected areas and in committing to international frameworks such as the UN Sustainable Development Goals or the UN Convention on Biological Diversity.

EMBRC is at the forefront of open science, an international movement that aims at making scientific research accessible to all levels of society, amateur or professional. Since 2019, EMBRC has taken the lead of Ocean Sampling Day, an initiative created in 2014. Every year on a specified date, marine researchers, students and citizens around the globe are invited to go to the sea and participate in sampling surface waters of the world’s coastal areas. “EMBRC has set standard protocols to help citizens take a sample of seawater that will then be sent to a local EMBRC station,” explains Mery Piña. At the station, technicians will analyse the sample and identify the biodiversity present in the sample. “Everybody can learn about marine biodiversity and do their part to help research: it’s a nice way to encourage citizen science,” she concludes.



Algae field in the Gullmarsfjord, Sweden



Samples of biodiversity around Kristineberg Center, Sweden



Mery Piña

Industries Liaison Officer at EMBRC



Marco Borra

Molecular Biologist,
Italian Embassy in Paris
Italian delegate for EMBRC General Assembly

