



Hidden treasures

Sustainable and efficient use of its marine resources can help the EU achieve its 2020 objectives, writes **Niall McDonough**

Europe faces many challenges in the coming decade, among them the growing demand for sustainable food and energy, and recovery from the economic downturn. An essential part of addressing these will be to use our untapped marine biological resources. The four seas and two oceans surrounding Europe's 89,000 kilometres of coastline support a wide range of ecosystems and organisms. Marine biotechnology takes these living resources and uses cutting-edge techniques to develop new products or services, contributing to a sustainable supply of food, energy, new health treatments and materials. It is already a €2.8bn market, with potential to grow up to 12 per cent annually over the next few years. By acting quickly, Europe can become a global leader in this innovative field by 2020.

The steps needed to fulfil the promise of marine biotechnology are outlined in a new report from the marine board of the European science foundation (ESF). In identifying areas for future research and innovation, 'Marine Biotechnology: A new vision and strategy for Europe' shows that the sustainable use of marine bioresources can help deliver the EU 2020 targets, ensuring we emerge from the global downturn with a greener, smarter economy.

Biofuels are just one example of how marine biotech can help: cultivating microalgae for fuel could reduce greenhouse gas emissions by 20 per cent. This technology is perhaps the most promising way of harnessing the ocean's bioenergy, but needs more in depth research to cut costs and increase production. Europe's waters also offer a potential source of drugs, biomaterials and industrial products such as biopolymers. More than 13 marine derived compounds are in clinical development and four

are already on the market. Many of these are targeting cancer. There is also scope for marine biotech to further improve the capacity of aquaculture to meet Europe's growing demand for sustainable, healthy seafood.

Securing these benefits from the sea means taking quick and decisive action. Science and industry, especially in the field of drug discovery, are intensely competitive. Japan, China and the USA are already investing heavily in marine biotechnology. If we fail to act, Europe will lose out.

We must recognise marine biotechnology as a distinctive research field and adopt coherent Europe wide research policies to support it without delay. While we have taken steps to coordinate access to research vessels, stations and laboratories, across Europe research efforts remain fragmented, focusing on national priorities. The marine board ESF report presents a detailed breakdown of European level research into tools and technologies to address future challenges and opportunities in the areas of food, energy and health. This ambitious undertaking needs support from scientists, national and European policy makers and industry.

Encouraging collaboration between industry and academic research is critical. Marine board ESF experts recommend increasing efforts and developing policies to strengthen technology transfer. They also propose establishing a European marine biotechnology institute and e-portal so researchers and industry can share resources and information more easily.

European marine biotechnology is starting to gain momentum. This year has seen the European association for bioindustries start a new working group focusing on it. And support action to coordinate research investment in marine biotech at the European level is in the current EC seventh framework programme funding call. These are positive steps and if researchers, policy-makers and industry work together, we can seize the moment to make full use of the living resources in Europe's seas. ★

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Niall McDonough is executive secretary of the marine board of the European Science Foundation