



# Bergen —

## the marine capital of the world

*With a proud maritime history, Bergen today hosts a number of management and research institutions, as well as global actors in the marine industry. Not least of these is the Institute of Marine Research. Kari Østervold Toft, the Communications Director at the Institute, tells the story from the beginning.*



The Norwegian Parliament chose Bergen as the hometown for the Norwegian Fisheries Board when it was established in 1900. This was the forerunner of the institutions we know today as the Institute of Marine Research (IMR), the Directorate of Fisheries, and the Norwegian Institute of Seafood and Nutrition (NIFES). IMR and NIFES are important institutions that produce scientific knowledge and deliver scientific advice for management, often represented by the Directorate of Fisheries.

### Science is the basis

The appointment of the marine biologist Johan Hjort as one of the three original managers of the Fisheries Board demonstrates that science has always played an essential role in the development of Norwegian fishery management. Today, fishery managers talk about four important pillars for sustainable fishery management: science, laws, control, and sanctions. In other words, there must be a scientific basis for regulations, laws to enforce regulations, a strong control system, and sanctions to ensure compliance with regulations.

Even though Norwegian fishery management has twice been assessed as being the most effective in the world and its fisheries the most sustainable (Chatham House-WWF, 2007; University of British Columbia-WWF, 2009), there are always areas that can be improved. This includes our knowledge of the ocean and the interactions between species in marine ecosystems.

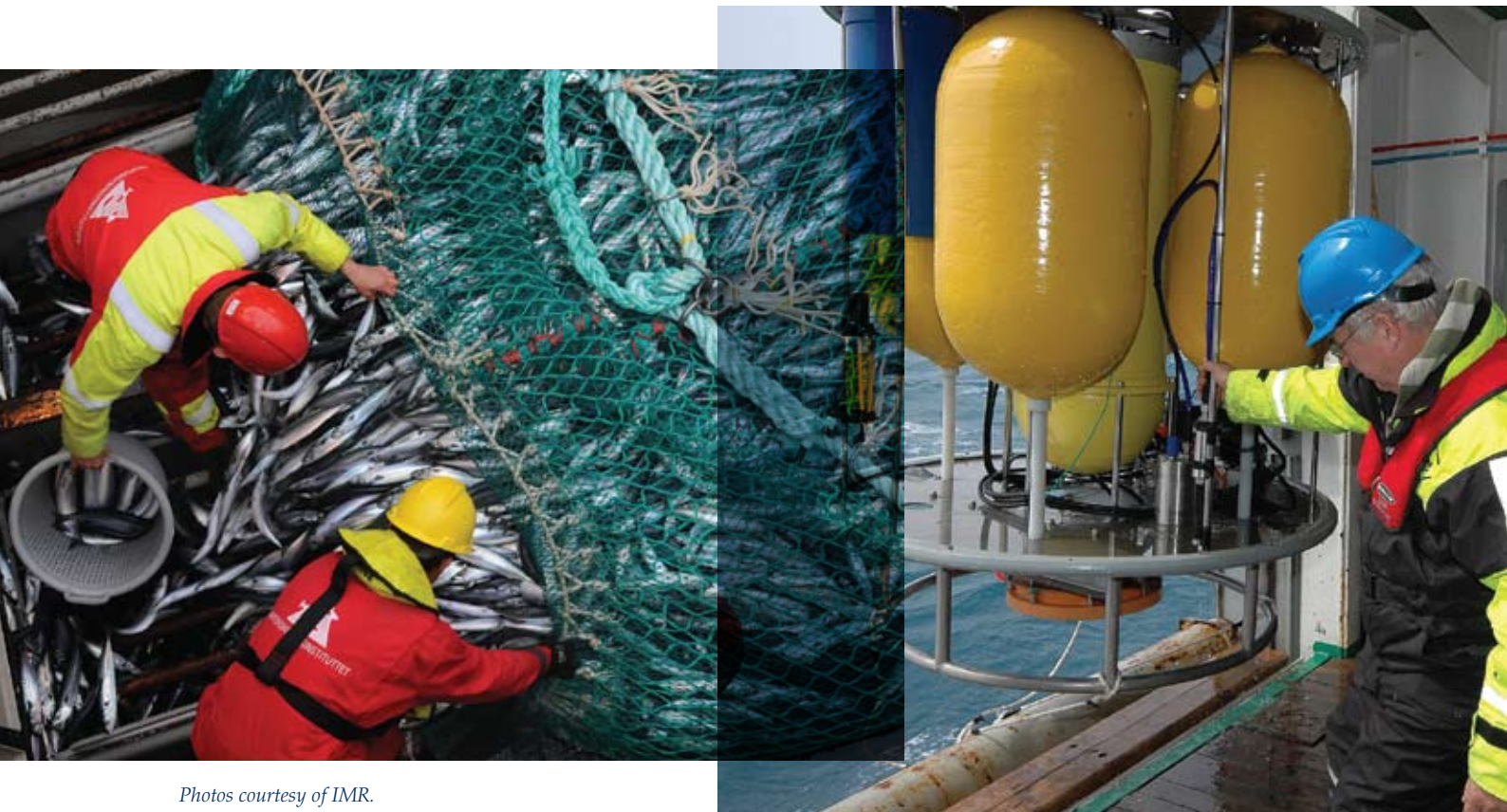
Until the end of the 1970s, the role of a marine scientist was mainly to assess the size of the fish stocks and guide fishermen to the fish. Finn Devold, the famous “herring scientist”, was well known along the Norwegian coast for guiding the fishing fleet to areas where they could find herring. He was indeed the “fishermen’s helper”.

### Technological development

After World War II, a number of people who had worked in the navy came to the Institute with experience in the use of acoustic instruments. This was the beginning of the strong acoustics group that exists in Bergen today, which, in close cooperation with the high-tech industry, has developed increasingly more advanced instruments which give a much more reliable picture of what is happening “down there”. “Seeing the sea with sound” is a good expression for describing their ambitions.

New knowledge gained through the development of advanced acoustic instruments has also had a strong impact on the design of new research vessels. The first Norwegian research vessel, the “Michael Sars”, was built in 1900 and was used for scientific purposes until the beginning of World War I. Later, a number of other vessels were built for scientific work, the newest of which, “G. O. Sars”, was built in 2003. Plans for a new ice-going vessel have been developed over the past few years in collaboration with other Norwegian research institutions working in the Arctic, but funding has not yet been approved.





*Photos courtesy of IMR.*

### **ICES is important**

The assessment of fish stocks is still an important function at the IMR, as we are the main adviser to the Norwegian Government in questions regarding quotas. Cooperation with ICES is crucial for this area of our work. Results from a wide range of data collected during 2000 days at sea every year are discussed and evaluated in working groups. The resulting advice from ICES is forwarded through IMR to the Norwegian Government, where it is used for negotiations and setting quotas.

Data from our research cruises also include monitoring physical and chemical changes in the marine environment, such as temperature, salinity, currents, density, and pollution. Over the years, this information has increasingly been included in the assessment of fish stocks, as well as in providing the basis for advice on climate change and information to Norwegian radiation authorities.

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The fact that scientists from a number of different countries are providing the scientific basis on how to manage marine resources gives credibility and status to the advice.

### **Cooperation in the North**

Norway has an ocean area nearly seven times that of its land area. This creates a challenge for the IMR, as we are responsible for the advice which covers the entire area. In order to accomplish this, it is necessary to establish close cooperation and mutual trust with countries who share the ocean area with us. One example of this cooperation is the long-lasting and strong relationship we have with our colleagues in Russia. Since the late 1950s, we have carried out cruises together in the Barents Sea, we have shared data, we have taken part in each other's projects, and we have worked in each other's institutions. We consider this cooperation to be a pillar for the sound management plans we have jointly established for the Barents Sea, plans that have resulted, for example, in a strong and healthy stock of Northeast Arctic cod this year.

More and more focus is now on the north. IMR has been working in the northern areas for more than one hundred years, and more than 60 per cent of our research is performed in the north. In the beginning, we focused on fish stocks, but now the environment and seabed mapping have as much focus. The Norwegian





seabed-mapping programme, Mareano, has increased our knowledge of biology, geology, and biodiversity in the northern part of our Exclusive Economic Zone. Knowledge gained from this project provided important input to the revised management plan for the Barents Sea and Lofoten area.

### Sharing knowledge

The IMR has a long and strong history of outreach. Dialogue with fishermen's associations has sometimes been loud, but always with a generous portion of respect from both sides. Politicians were clear in their demand for the increased use of data from the commercial fishing fleet. Ten years ago, a reference fleet was established to address this demand. An international panel evaluated the project in 2011 and found it to be a good platform both for data collection and for improved understanding of scientific methods.

The aquaculture industry has grown to be one of the most important food production industries in Norway over the last thirty years. The environmental impact of this industry has become the main focal point for the Institute's work in this area. Many of the projects are carried out in our two research stations in Austevoll and Matre. Over the last couple of years, these stations have also been organized to expand their work in broader fields of research, such as climate studies.

Sharing knowledge is always important. Norway has had projects in developing countries for nearly forty years to enable these countries to establish and implement the sustainable management of their own marine resources. A number of these projects have proven to be successes, and FAO has named the EAF-Nansen project in Namibia as one of its most successful projects.

### One of the biggest

IMR has more than 700 employees located in the main office in Bergen, the department in Tromsø, and at our research stations in Flødevigen, Austevoll, and Matre. We own four research vessels and manage two more. The budget is close to NOK 890 million in 2012, which makes us one of the largest marine research institutions in the world. Our goal is to be the best when it comes to science. This demands a continuous effort from all of our staff and a broad range of cooperation with the rest of the scientific world. Read more about us on <http://www.imr.no>.

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