



Riches of the sea – Norway's future



NORWEGIAN MINISTRY OF
FISHERIES AND COASTAL AFFAIRS



Contents

Riches of the sea	4
Sustainable management	6
Coastal administration	9
Norwegian seafood – a true globetrotter	12
Research and innovation	14
Agencies and institutions linked to the Ministry	16

Riches of the sea

Norway is a major maritime nation and Norwegian prosperity is largely built on industries and business connected with the sea.

The fisheries and aquaculture industry is one of Norway's most important export industries. More than 90 percent of the seafood we produce is exported to more than 150 countries.

The Ministry of Fisheries and Coastal Affairs has the responsibility of providing for sustainable and profitable management of the marine resources and environment.

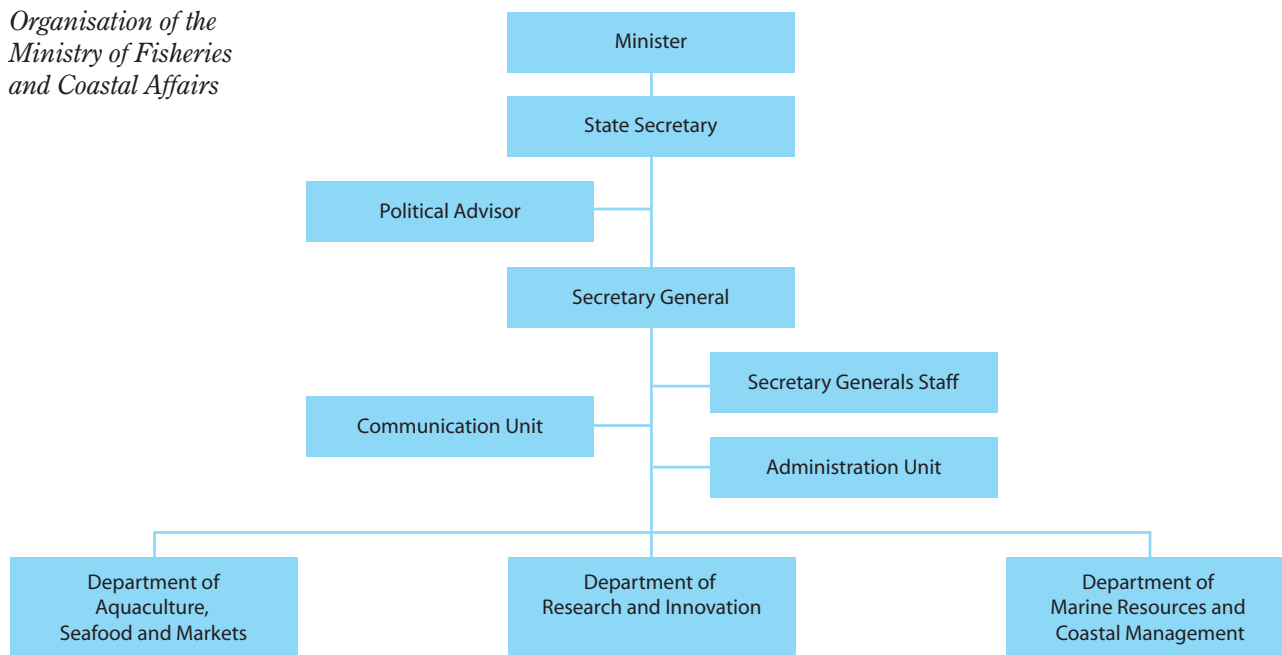
As much as 90 percent of the Norwegian fishery – from the Skagerrak to the Barents Sea – takes place on

stocks that are managed in close, long-standing cooperation with other countries. Our primary partners are the EU and Russia.

Research and monitoring provide an important foundation for marine management, and Norway is a world-leader in marine resource research. This also includes research to promote business development and research on health and nutrition.

Ports and maritime transport are important elements of the Norwegian transport system. Maritime transport is environmentally friendly in comparison with other modes of transport. The Ministry of Fisheries and Coastal Affairs is responsible for fairways, conventional as well as electronic aids to navigation, pilotage services and governmental pollution preparedness and response.

Organisation of the Ministry of Fisheries and Coastal Affairs



Department of Aquaculture, Seafood and Markets

The Department of Aquaculture, Seafood and Markets is responsible for the regulatory framework for and constraints and supervision of the aquaculture industry, including fish health and environmental sustainability.

Safe and healthy seafood falls under the department's ambit of responsibility, as well as monitoring of seafood products throughout the entire production chain, including fish feed.

Another integral area of responsibility is trade policy and market access, at the global (WTO), European (EU-EEA) and regional/bilateral level (EFTA).

The department bases its work on the value chain "from fjord to fork" (Norwegian seafood products) and helps to create value-add through joint marketing with funding from the industry, administered by the Norwegian Seafood Export Council.

The department is responsible for following up on the legislation and regulatory framework; the Aquaculture Act, the act relating to the export of fish and fish products, the Food Act, and the act relating to animal welfare where it applies to seafood and aquaculture.

Department of Research and Innovation

The Department of Research and Innovation is responsible for research and innovation policy, regional policy and port and maritime transport policy, including the National Transport Plan.

The department is responsible for national budget work, audits, financial management, subsidy administration and targets and performance management.

Supervision of the Directorate of Fisheries, the Norwegian Coastal Administration, the Institute of Marine Research, the National Institute of Nutrition and Seafood Research (NIFES), the National Veterinary Institute



and the Fishery and Aquaculture Industry Research Fund also falls within the department's area of responsibility. Additionally, the department is also responsible for governance of NOFIMA Ltd and The Norwegian Seafood Export Council Ltd.

Nordic cooperation and aid matters as well as financing and operation of the infrastructure for Jan Mayen also rest with this department.

Department of Marine Resources and Coastal Management

Matters relating to fisheries, the marine environment and coastal management are the responsibility of the Department of Marine Resources and Coastal Management.

The portfolio of this department contains a wide range of topics, including quota negotiations and international fisheries agreements, IUU-fishing and discard, coordination of area and environmental policies, regulation and access of fishing licenses and permits, capacity adjustment schemes for the fishing fleet, petroleum matters, maritime safety and emergency preparedness system for acute pollution.

The department is responsible for the implementation and follow up of the Marine Resource Act, Deltakerloven (act relating to fisheries participation), Pilotage Act, Havne- og farvannloven (act relating to port and waters) and Råfiskloven (act relating to marketing of raw fish).

Sustainable management

Productive marine ecosystem and clean waters are fundamental prerequisites for marine wealth creation both in fisheries and aquaculture.

Resource management

Fisheries has always been vital for settlement along the Norwegian coast. Our coastal and sea areas are highly productive with abundant fish stocks. As early as in the 12th century, stockfish was an important export commodity. In the following centuries, fishing, fish processing and export of fish have been important industries along the Norwegian coast. Over the last decades, the Norwegian fishing industry has evolved a regulated industry based on quotas and licences. The advice from marine scientists provides the most important basis for the setting of catch quotas.

The Norwegian fishing fleet is regulated through license requirements to take part in different fisheries, through quota regulations and regulations of how the fishing is conducted. These schemes ensure sustainable fisheries, in both biological and economic terms. In addition, capacity reduction schemes are developed with the aim of reducing the number of fishing vessels, facilitating fleet renewal and secure employment in the fishing industry.

In addition to regulations of effort and outtake, Norwegian resource management is based on a comprehensive technical regulatory framework, including a discard ban aimed at ensuring sustainable fisheries. The fisheries authorities perform diverse control activities together with the Coast Guard and the sales organisations to ensure and document compliance with the regulations by both Norwegian fishing vessels and foreign vessels fishing in waters under Norwegian fisheries jurisdiction.



Norway participates in the extensive international efforts to ensure sufficient monitoring, control and surveillance measures for the fisheries in a global scale and of all landings in ports worldwide. This promotes sustainable fishing and equitable competition in the international market. The battle against illegal, unreported and unregulated fishing has a high priority, and has produced results in the Barents Sea where the extent of illegal fishing has been reduced in recent years.

International cooperation

Norway is a major maritime nation and the international developments in this field of outmost importance for us. At the same time, we also have a responsibility for protecting our interests at the international level. The challenges include achieving support for the principle of precautionary approach, sustainable use and ecosystem-based management.

As much as 90 percent of the Norwegian fishery takes place on stocks that we share with other states. This is the main reason why Norway has fishing agreements with the EU, Russia, the Faeroes, Iceland and Greenland.

The UN Convention on the Law of the Sea constitutes the legal framework for international cooperation on issues relating to seas and oceans. The UN General Assembly conducts annual debates on the marine environment and fisheries issues which i. a. charge the Food and Agriculture Organization (FAO) with follow-up tasks. The FAO has a normative role for the fisheries and has developed a code of conduct for responsible fishing and guidelines for various fishing vessels. Marine issues are also debated within global environmental agreements such as CBD (the Convention on Biological Diversity) and CITES (the Convention on International Trade in Endangered Species).



Regionally, specific guidelines applicable to the Norwegian fisheries are established through decisions and regulations by the regional fisheries management organisations, notably in our geographically closest organisation in the North-East Atlantic, NEAFC. In addition, the Convention for the Protection of the Marine Environment of the North-East Atlantic, OSPAR, incorporates a general responsibility for the marine environment.

Aquaculture

Aquaculture has become an important industry for Norway. More than half of all Norwegian seafood exports come from the aquaculture sector. Salmon and trout are the key species, but also other species such as cod, halibut and shellfish are farmed.

Aquaculture activity requires a licence from the authorities, and the Ministry of Fisheries and Coastal Affairs sets out the framework conditions for the development of aquaculture in Norway. Environmental concerns, fish health and fish welfare are given high priority. The authorities seek to ensure that disease in farmed fish does not have a regulating effect on wild stocks and that the greatest possible number of farmed fish is raised with the minimal use of medicines. The Norwegian Food Safety Authority has operational responsibility for implementing public-sector initiatives to counter fish diseases.

Competition for the coastal zones

Access to marine space is a fundamental condition for the fisheries and aquaculture industries. In coastal zones, space has become a limited resource which must be managed on the basis of long-term and sustainable strategies to provide for the best possible foundation for growth and wealth creation, both locally and nationally. Several user groups such as tourism, aquaculture, fishers, shipping and petroleum activities have conflicting interests and are competing for space, therefore the fisheries and coastal management authorities alongside other sector authorities play an



active role in processes relating to marine area planning and marine protected areas.

Climate and climate change

Internationally, temperature change may alter the zonal distribution of key fish stocks. Monitoring of the sea and coastal areas will become even more important, so that the authorities can adapt management to the changes that occur. For emergency equipment and maritime infrastructure, including fish farms, changes in sea level and increasing weather impact will impose new requirements on equipment dimension, upgrading and maintenance.

It is uncertain how quickly and in what way climate change will manifest itself in our sea areas. It is particularly difficult to model short-term extreme periods which may impact safety and emergency preparedness. But in the relatively short term, reduced ice sheet, higher temperatures, more extreme weather and a more northerly distribution of marine species may be expected.

Coastal administration



The majority of the Norwegian population lives on or near the coast, and this is also where the major part of business and industry is located. Consequently ports and maritime transport play an important role in our national transport system.

The Ministry of Fisheries and Coastal Affairs is responsible for ensuring safe and competitive maritime transport in Norway, with efficient ports, safe fairways, a well-developed and comprehensive navigational infrastructure and reliable oilspill preparedness.

The Ministry, with its agency the Norwegian Coastal Administration (NCA), also takes active part in international efforts to strengthen the safety at sea, notably through the UN International Maritime Organization (IMO), in cooperation with the EU as well as in other relevant international fora.

The fisheries and aquaculture industry is one of the most important export industries in Norway, and is of great importance to the coastal communities. Suitable fishing ports are important for value creation in the industry, and the Ministry endeavours to further develop these ports.

The pilotage service, the lighthouse service and the aids to navigation service have long traditions in Norway. The first regulation on compulsory pilotage dates from 1561, and in 1655 the first known lighthouse was lit at Lindesnes. The Ministry of Fisheries and Coastal Affairs has contributed to the establishment in 2008 of the Norwegian Coastal Administration Museum. The museum is organised as a network with its headquarters at the very place where lighthouse history began.

Ships nowadays make use of several aids to navigation. Electronic navigation systems are important tools for the navigator, along with nautical charts and physical sea-marks. The US satellite navigation system, GPS, is the

- The pilotage service comprises some 450 specialists, including 270 pilots who ensure that vessels are provided with adequate local knowledge.
- The lighthouse and navigational marks service comprises around 20,000 installations, including 105 lighthouse stations.
- There are around 5,000 devices that transmit light signals, around 13,500 fixed navigation marks, 1,800 floating marks, some 80 light buoys, 12 dGPS stations, more than 100 floodlights and in excess of 70 racons.
- The Norwegian Coastal Administration operates Vessel Traffic Service Centres in Horten for the Oslofjord, in Brevik for the Grenland area, on Kvitsøy for Rogaland area and on Fedje for the Sture and Mongstad area. The VTS at Vardø monitors traffic in the area from Rørvik to the Russian border and the sea area around Svalbard, as well as potentially hazardous traffic along the entire Norwegian coast.

most widely used electronic navigation system. The NCA has established a system for enhancing GPS signals, named dGPS. Norway also operates Loran C stations. Loran C is a terrestrial electronic navigation system. The development of Loran C as a back-up for satellite navigation is currently being discussed internationally.

The NCA monitors maritime traffic from five Vessel Traffic Service Centres. One important monitoring tool is AIS, a system which automatically identifies and tracks ships. The NCA has also implemented Long-Range Identification and Tracking (LRIT) as a monitoring tool.

The objective of all these measures is to enhance maritime safety

Maritime transport and oilspill preparedness

Maritime transport accounts for nearly fifty percent of the domestic oil cargo transport in Norway. More than 80 percent of import and export are also transported by sea.

The Ministry of Fisheries and Coastal Affairs promotes the establishing of transport corridors with efficient ports as nodes between sea and land. The corridors will connect different parts of the country, and link the domestic transport system to the international transport network.

Norway's coastal areas are important in terms of national value creation. The Ministry of Fisheries and Coastal Affairs is therefore committed to ensuring that maritime transport has the best possible operational conditions. This involves maintaining and improving navigational infrastructure and services, improving fairways and developing modern, up-to-date aids to navigation.

New transport corridors are being established by commercial interests to meet the demand for transport services. The Ministry of Fisheries and Coastal Affairs' role with respect to such transport corridors is to establish navigation and monitoring systems, satellite or ground-based, and to control traffic through international reporting and information systems.

The High North and the Arctic are important strategic areas for the development of new transport corridors. International cooperation – regionally and globally – is paramount to the establishment and success of such transport corridors.

Increased activity in the High North poses new challenges to maritime safety and pollution preparedness and response. A number of measures have been put in place to mitigate risk. In addition to establishing navigational and monitoring systems, routing measures have been established outside Norwegian territorial waters

from Vardø to Røst (northern Norway) and off the coast of western and southern Norway. This has strengthened the ability of authorities to provide assistance to vessels and thus prevent accidents that would potentially result in pollution.

Through the Norwegian Coastal Administration (NCA), the Ministry of Fisheries and Coastal Affairs is responsible for the operation and development of the government oil-spill preparedness and response system. In the event of a major incident, the NCA may take the lead in emergency response missions, fully or partially, coordinating and directing the response of all involved actors. The NCA has equipment stored at 16 main depots and nine smaller depots along the coast and on board coast-guard vessels. In addition, the NCA has at its disposal four vessels (2011) which are designed for response and recovery operations in coastal waters.

The government oil-spill preparedness and response system is based on risk assessment and risk management tools. Analyses of environmental resources are used to identify areas and environmental resources that are particularly vulnerable to pollution, and response operations are directed to primarily protect such resources.





Norwegian seafood – a true globetrotter

Norwegian seafood is exported to more than 150 countries. Market access, marketing and food safety are important areas for the fishing and aquaculture industry.

Market access

Norway is the world's second largest exporter of seafood. The Ministry of Fisheries and Coastal Affairs is working to further develop the seafood industry.

Norwegian seafood competes in a global market, and the Norwegian authorities work to ensure that Norwegian products have the best possible international market access. The EEA Agreement regulates access to the large EU market, but bilateral trade agreements

and EFTA are also important. Much emphasis is placed on the ongoing efforts in the WTO to ensure more liberal world trade.

The Norwegian Seafood Export Council undertakes joint marketing in all important markets for Norwegian seafood and also works to increase value creation in the seafood industry, not least through a quality-labelling scheme. The Council is organised as a State-owned company and finances its activities through a levy on all Norwegian seafood exports.

Food safety, quality and health

The purpose of the food safety administration is to guarantee that consumers have seafood which is safe for consumption and of good quality. The industry's own controls must meet statutory requirements, and



the Norwegian Food Safety Authority must ensure that Norwegian seafood is produced in accordance with international requirements and obligations. It is important to meet these requirements in order that customers, both within Norway and abroad, have confidence in the product.

Fish has a high content of many essential nutrients and is a good source of protein, long-chain omega 3 fatty acids, vitamin D, vitamin B12, selenium and iodine. Leading research environments are able to document that fish and other seafood have a positive effect on health. More scientific data on the health-giving properties of seafood are important in order to give consumers good dietary advice.

The authorities are also focused on ensuring product quality along the entire value chain, from fishing vessels or fish farms right through to the consumer. It is important to support the industry in its work on documenting quality, both in order to add value and to allow consumers to select products based on nutritional content, origin, sustainability, ecology and production methods.



Research and innovation

Norway's growth and prosperity as a coastal nation and seafood producer would not have been possible without extensive scientific research and development of knowledge.

The harvesting of marine resources depends on stable ecosystem interaction. Substantial knowledge about the marine environment is required in order to practise responsible resource management. Under the auspicion of the Ministry of Fisheries and Coastal Affairs, research and monitoring of the marine ecosystems is carried out. This knowledge production, primarily the responsibility of the Institute of Marine Research, has a general importance for environmental issues relating to our sea areas. Research and survey vessels spend a total of 2,500 to 3,000 days at sea per annum.

Research linked to the management and production of seafood “from fjord to fork” covers both basic research and business-oriented research, in addition to commercialisation initiatives. Research funding are made available for research on marine ecosystems, aquaculture and seafood safety, health and quality. Knowledge provides the basis for sustainable harvesting of the marine ecosystem, and for sustainable Norwegian fish farming.

Future challenges relate to the fact that we need more information about how climate change affects the sea, like the change in sea temperature, acidification and sea currents. Climate change might also generate more extreme weather. We need increased know-ledge on the consequences on the ecosystems and the biodiversity, the consequences for marine industries, and maritime transport and infrastructure. We need also to understand the role the ocean plays in climate change. It is especially important to acquire more knowledge in order to ensure that we protect the sea's capacity for sustaining reproduction.



Research which facilitates innovation in the industry should contribute to increasing the value of each individual fish. In the aquaculture industry, bio-technology methods and knowledge are playing an increasingly large role in breeding, diagnostics, the prevention of disease and in the monitoring of and insight into environmental impacts. Bio-technology can provide a foundation for value creation and commercial development, with applications in medicine, health, food, feed-stuffs and ingredients, cosmetics and various types of eco-friendly industries and energy processes. One area which is of particular interest is marine bio-prospecting. In the Arctic sea areas with extreme temperatures and light conditions, organisms have developed with unique characteristics that may provide bases for products and processes in a number of business areas.

The Ministry of Fisheries and Coastal Affairs also finances research and development linked to ports and maritime transport infrastructure. The scientific knowledge acquired should provide enhanced decision-sup-

port concerning the organisation of maritime transport, and advance the development of technology, organisation and other framework conditions.

Business development

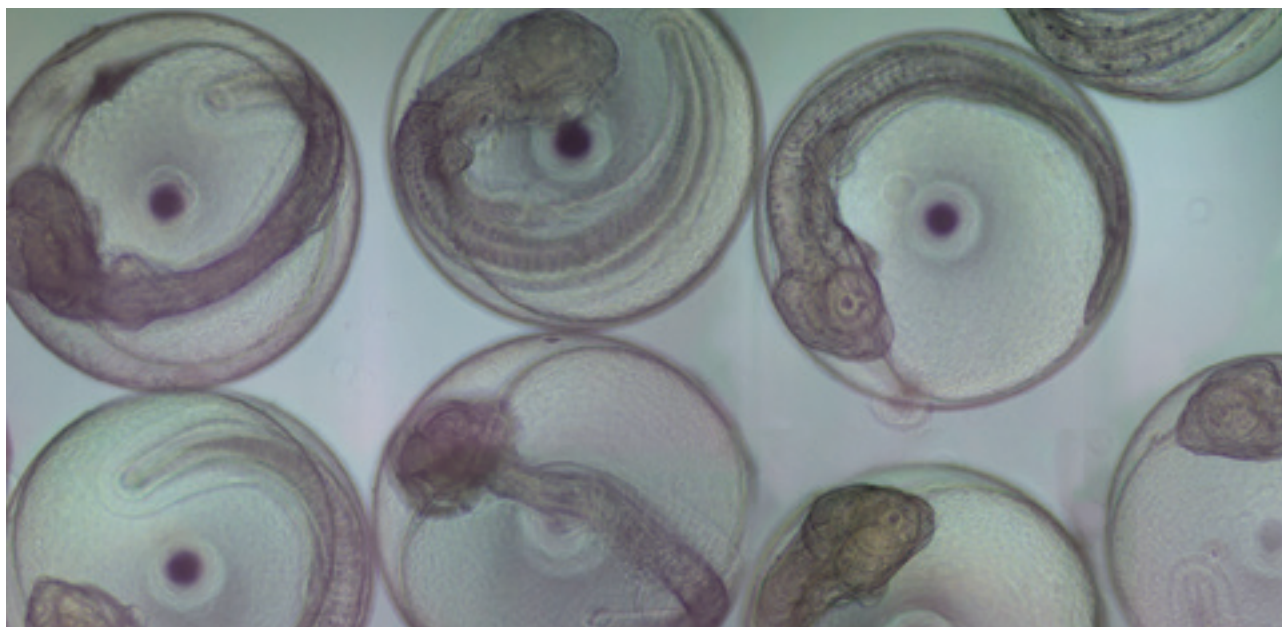
Expertise and knowledge of how the resources in the sea can be managed are the very foundation of marine value creation.

This value creation is highly significant for the development of many coastal communities, especially in the Northern parts of Norway where marine industries are essential for employment and other demographic features.

It is important that as much as possible of the value creation takes place in Norway and in local communities, which are especially dependent on marine resources. The fishing and aquaculture industry faces many challenges in a highly competitive international market. This affects both the industry and the local communities which depend on fishing. The Ministry of Fisheries



and Coastal Affairs has designed special programmes with the aim of increasing value creation in the seafood industry through stronger market alignment and for new businesses and innovation in industrially underdeveloped local communities in particular. These programmes are implemented through Innovation Norway.



Services and institutions linked to the Ministry

The Directorate of Fisheries is an advisory and executive agency for the Ministry of Fisheries and Coastal Affairs for the management of the fishing and aquaculture industries, and it monitors compliance with legislation and regulations. Its work is divided into three main areas: marine resource management, aquaculture management and use of the sea and coastal zones. The head office of the Directorate is in Bergen, but many of the management and monitoring activities are carried out in the seven regions, headquartered in Vadsø, Tromsø, Bodø, Trondheim, Ålesund, Måløy and Egersund respectively. The Directorate also has 22 local offices.

fiskeridir.no



The Norwegian Coastal Administration (NCA) is an advisory and executive agency for the Ministry of Fisheries and Coastal Affairs. The NCA main areas of responsibility are maritime infrastructure and services, port and coastal waters management, transport planning and governmental pollution preparedness and response. The NCA is organised into five regions, each with its own regional office, under the head office in Ålesund. The NCA was created from the merger of the national harbours service, the Norwegian Lighthouse Administration and the pilotage service.

kystverket.no



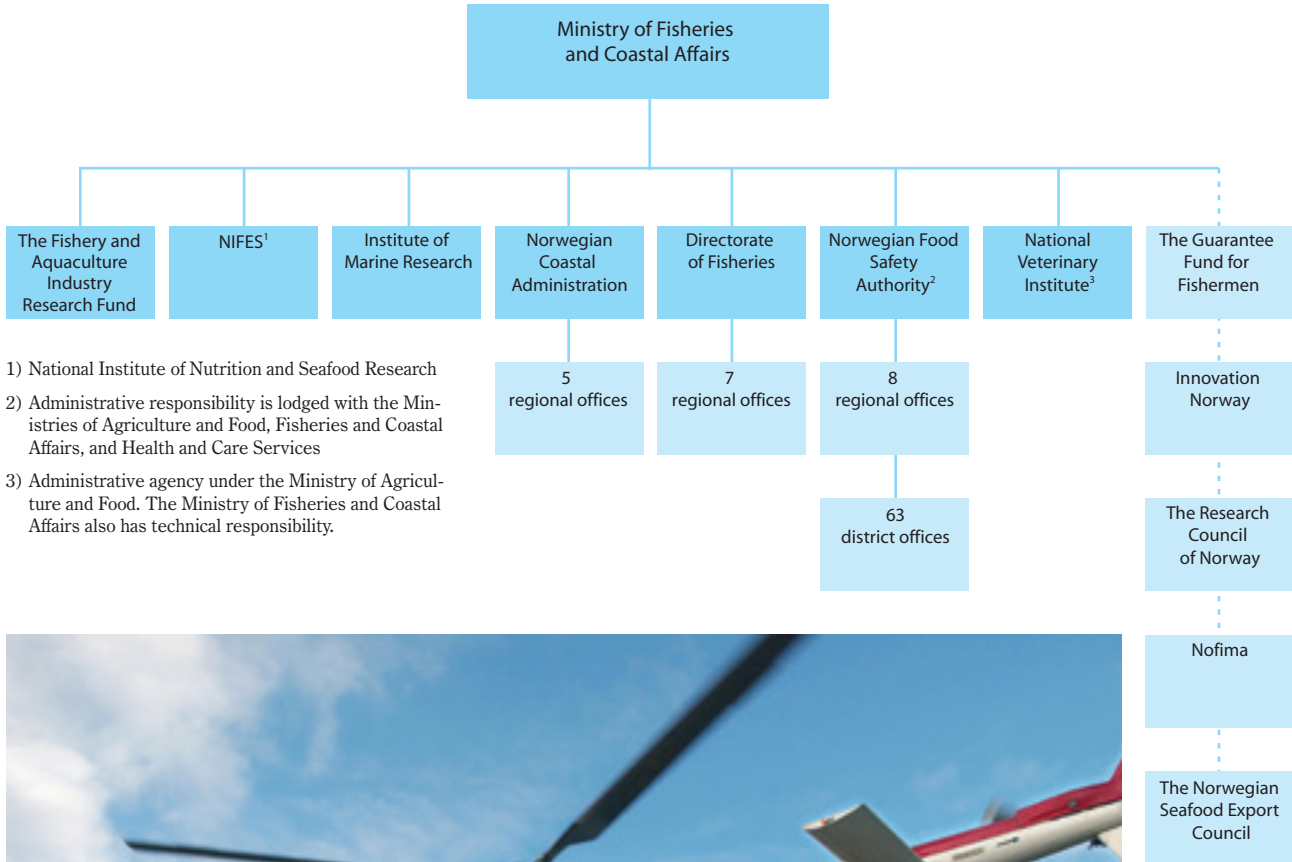
The Institute of Marine Research, based in Bergen, is an advisory organisation for the Ministry of Fisheries and Coastal Affairs, with key remits to investigate and monitor fish stocks and marine mammals, the marine and coastal environments and to oversee aquaculture and marine ranching. Their research covers areas like the marine ecosystem, aquaculture and the effects of climate fluctuations and human impacts. The Institute maintains close contact with marine researchers in other countries. Much of the international cooperation takes place through ICES, the International Council for the Exploration of the Sea. Approximately 50% of IMR's activity is financed from the budget of the Ministry of Fisheries and Coastal Affairs.

imr.no



National Institute of Nutrition and Seafood Research (NIFES) in Bergen is a research institute with administrative duties, linked to the Ministry of Fisheries and Coastal Affairs. The Institute advises the authorities and administration on the basis of research into fish nutrition and healthy and safe seafood. Research activities cover fish feeding and how the consumption of fish and other seafood affects human health.

nifes.no





The Norwegian Food Safety Authority, with head offices in Oslo, is a joint agency under the Ministries of Agriculture and Food, Fisheries and Coastal Affairs and Health and Care Services. The Food Safety Authority is charged with supervising the safety and high quality of seafood. The Authority has 8 regional offices and 54 district offices throughout Norway. The fish and seafood section is located in Bergen.

mattilsynet.no

The Guarantee Fund for Fishermen in Trondheim administers social welfare schemes for fishermen.

gff.no

Nofima (the Norwegian Institute of Food, Fisheries and Aquaculture Research) is a food-processing-research group which performs research and development for the aquaculture, fishing and food industries.

nofima.no

The Norwegian Seafood Export Council (NSEC) in Tromsø is responsible for joint marketing activities for fish and fish products abroad and in Norway. The Council employs representatives in key markets.

seafoodfromnorway.com

The Fishery and Aquaculture Industry Research Fund is tasked with financing commercial research and development on behalf of the fishery and aquaculture industry. On the basis of the industry's needs and priorities, the Fund develops finances and monitors research programmes and R&D projects. The Fund focuses on ensuring that the knowledge acquired from projects benefits the whole of the industry.

fhf.no

The Research Council of Norway in Oslo administrates a substantial proportion of the fisheries research funds in accordance with guidelines from the Ministry of Fisheries and Coastal Affairs.

forskingsradet.no

The National Veterinary Institute is a leading institute for the Ministries of Agriculture and Food and Fisheries and Coastal Affairs in animal health and food safety in connection with agriculture-based food production and the health of aquatic organisms.

vetinst.no

Innovation Norway is a key instrument in the work on marine innovation and value creation. The organisation administrates funds available to fishing fleets, fish farms and the fishing industry in accordance with general guidelines issued by the Ministry of Fisheries and Coastal Affairs.

innovasjon Norge.no





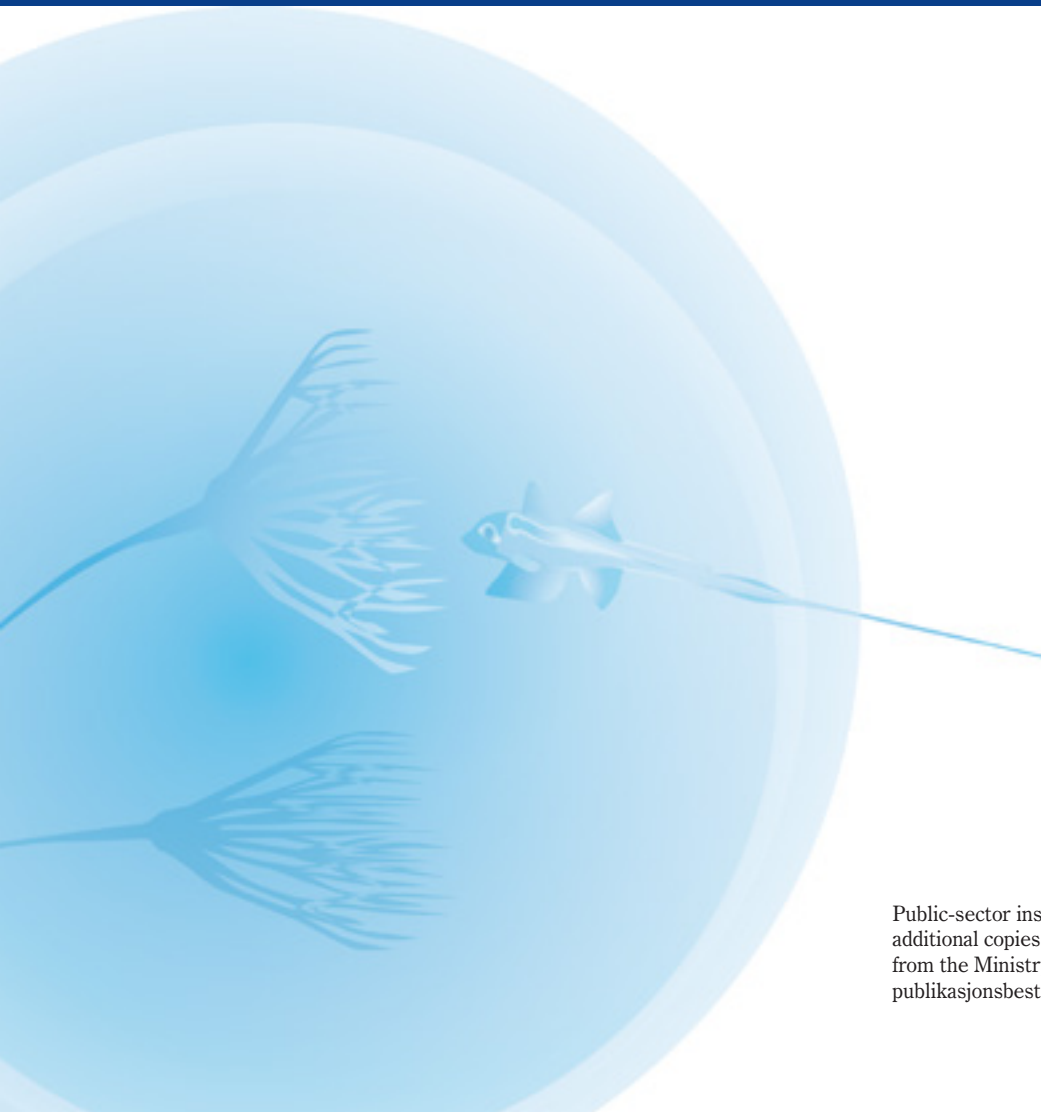
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