



Norwegian Ministries

Strategy

Blue Opportunities

The Norwegian Government's Updated Ocean Strategy





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Contents

Preface

Side 6

Introduction

Side 9



Chapter 1

Future-oriented
ocean industries

Page 12



Chapter 2

Skills, education
and employment

Page 20



Chapter 3

Research,
technology and
innovation

Page 24



Chapter 4

Good management
and predictable
framework conditions

Page 28



Chapter 5

Clean and
rich oceans

Page 34



Chapter 6

International
cooperation and
ocean diplomacy

Page 38

Future focus areas

Side 45

Preface

**Norway is a leading ocean nation.
The story of Norway is a story about the ocean.**

We have always explored and lived off the sea. Some of our most innovative businesses, jobs and scientific communities originate from our settlements along the coast, and are based on our use of the ocean.

The Norwegian ocean areas contain rich oil and gas resources, which have played a key role in the development of our welfare state, as well as a world class oil and gas industry. At the same time, Norway's ocean is the basis for one of the world's largest and most sustainable seafood industries, as well as a large maritime industry. Our long coastline and the skills and innovative power of the coastal population contribute to jobs in many parts of the country.

The blue economy has been important to us for centuries. The close collaboration between businesses, research and education, employees and authorities have played an important role in the historical development of Norway as an ocean economy. In the years to come, the growing world population will need more jobs, more food, pharmaceuticals and energy. The Organisation for Economic Cooperation and Development (OECD) estimates that the ocean economy's contribution to global value creation will be doubled by 2030, compared to 2010.

The opportunities for future growth and new jobs are considerable for industries operating in global markets; both in established industries such as oil and gas, fisheries, aquaculture and shipping, as well as in industries such as coastal-based tourism, space activity, and emerging industries such as offshore wind, seabed minerals, and new biological resources for food and pharmaceuticals. The ocean will continue to be one of Norway's main sources of jobs, value creation and welfare throughout the country in the foreseeable future, and could at the same time help solving the environmental and climate challenges the world is facing.

In order to produce and harvest more from the sea in the future, we must take care of it. Norwegian ocean areas are generally in a good state. However, the ocean is exposed to pollution, marine litter, climate changes,

loss of biodiversity, and overexploitation of the resources. A sound ocean policy and a sustainable ocean economy are vital in order to reach the UN Sustainable Development Goals. Norway's ocean management is knowledge based, holistic and responsible, and we promote an international framework for sustainable ocean management.

Rapid changes and new technology require that we are prepared to adapt to and capitalise on the development. Digitalisation, automation and globalisation are important factors influencing everyday work as well as the skills requirements along the coast and at sea. We will readjust and make use of the opportunities.

The success and opportunities of the ocean industries in international markets are of great importance to Norway's prosperity. Norway is taking an active role in the development of international regulatory frameworks. Securing rule based international trade and Norway's access to the world market, is important.

Norway shall continue to be a leading ocean nation.

In order to achieve this, the Government will facilitate value creation and employment in the Norwegian ocean industries. Sound and predictable framework conditions for the businesses facilitate further development of the strong knowledge and technology communities along the entire coast, strengthen the long-term competitive power of the ocean industries internationally, and contribute to a better ocean environment.

The ocean and the ocean industries are high on the political agenda, both at home and abroad. The Government has submitted several white papers, strategies and action plans to facilitate further development of the ocean industries and to strengthen management of ocean areas. In 2017, the Government launched the ocean strategy "New growth, proud history" and the white paper on "The role of the oceans in Norway's foreign and development policy".

The Norwegian Government has an ambitious ocean policy, which is under constant development. Since the Ocean Strategy was published, the Norwegian ocean industries have developed further. This document is a status report for our ocean policy, pointing out the direction for our future efforts. Together with the management plans for the Norwegian sea areas and other policy documents, the Government's updated ocean strategy "Blue Opportunities" continues the work on providing a clear and holistic Norwegian strategy for the work on ocean issues.

In this updated ocean strategy, we identify three policy areas which are becoming increasingly important.

Climate change is one of the greatest challenges of our time. Norway's nationally determined contribution under the Paris Agreement is to reduce emissions by at least 40 percent by 2030, compared to 1990. Norway is in dialogue with the EU on a joint fulfilment of the emission goal for 2030. The Government aims at making Norway a low-emission country by 2050, by reducing emissions by 90-95 per cent. Our focus on green shipping is important in order to reach these goals.

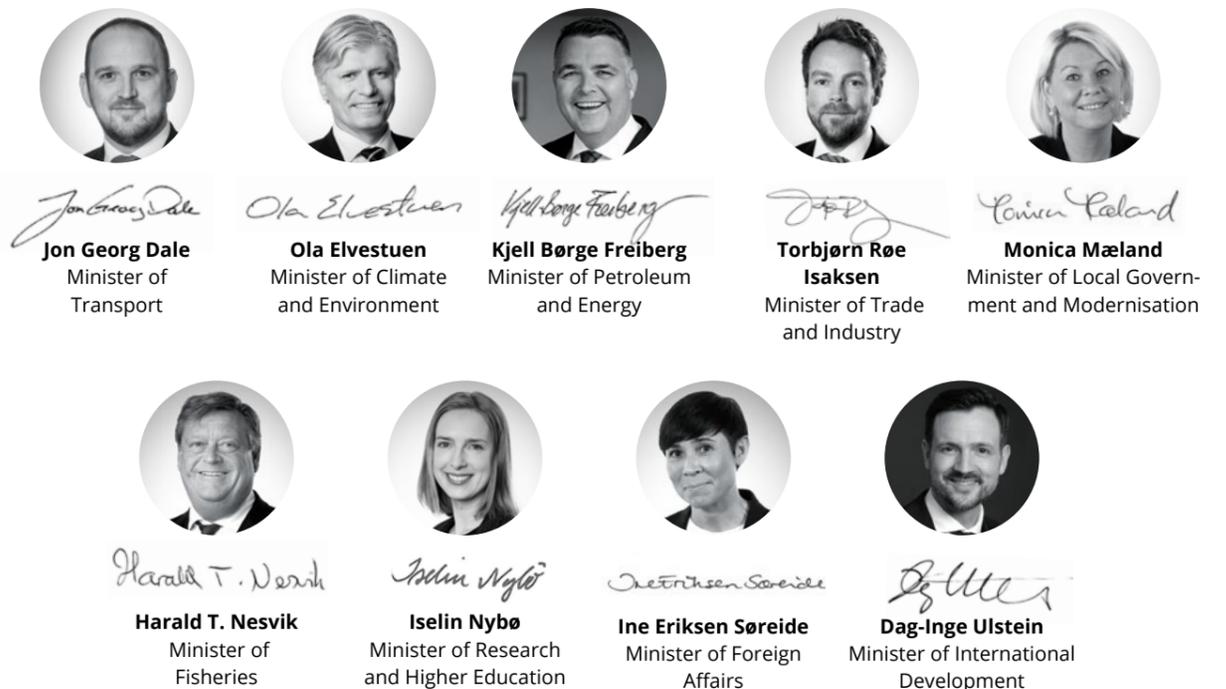
Norway's ocean initiative also has a clear regional focus. The national ocean policy is created in collaboration with national, regional, and local authorities. Employers and employees also play a key part in the efforts for a sustainable blue growth. The Government will facilitate local value creation in order to reduce the vulnerability

of the regional business communities and strengthen the adaptability of the regions. The Government stresses that marine resources are important to national value creation, and that the use of natural resources should create positive effects in local communities. This will be reflected in the upcoming white paper on local communities and in the white paper on the Arctic, which is to be presented in 2020.

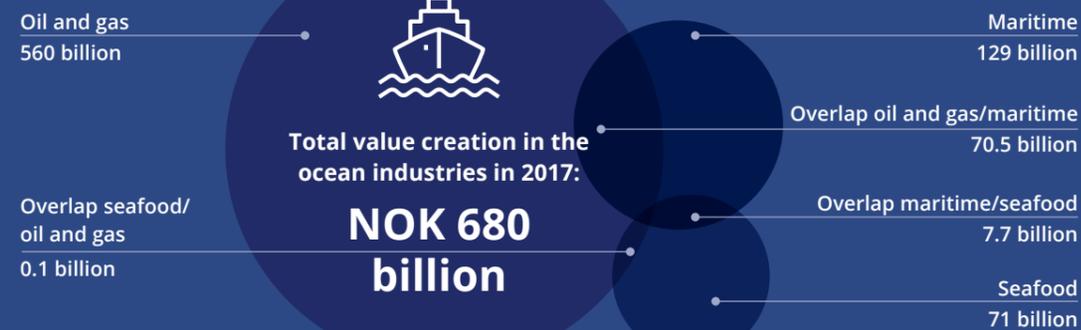
There is rapid development of technologies, working methods and the use of digital tools in the ocean industries. We must ensure that education has the right focus, and that we have the skills and competence to make use of the opportunities these developments provide us with. Therefore, we increase our emphasis on digitalisation in education. We will use and build on our historical advantages as fishermen, seafarers, oceanographers, explorers, oil and gas workers, and innovators, also in a more digitalised reality.

We will continue to harvest from our ocean resources. At the same time, our strong coastal communities, our knowledge, experience and our green adaptability will be our source of stronger competitive power, further creation of jobs and value, and a sustainable welfare society in the future.

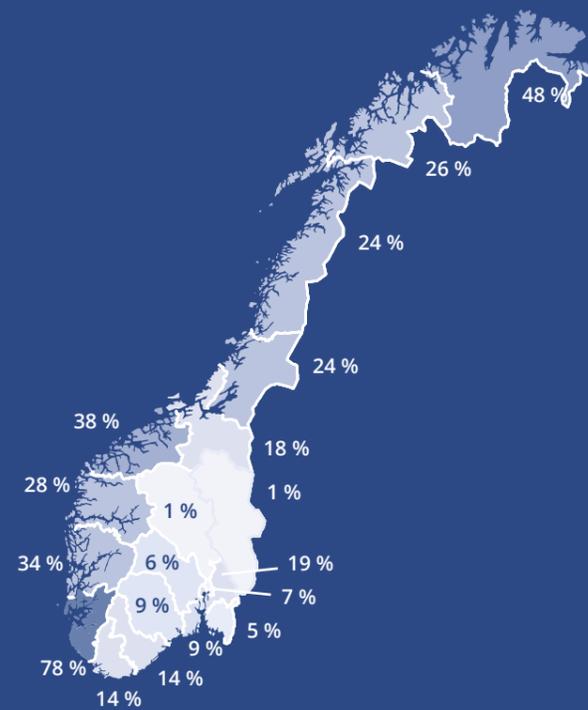
The story of Norway will also in the future be a story about the ocean. Norway shall continue to be a leading ocean nation.



The Ocean Industries in the Norwegian Economy



The ocean industries' percentage of value creation in the business community per municipality in 2017



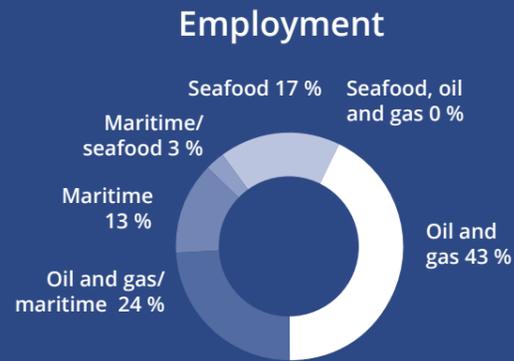
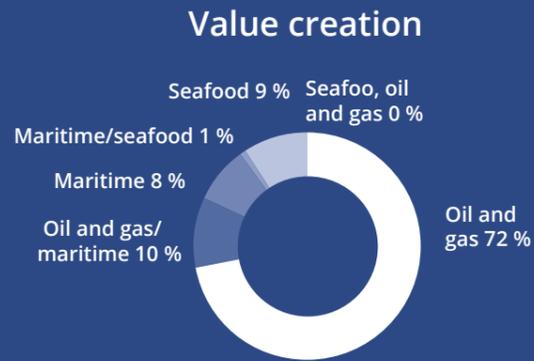
Introduction

Norway is rich in natural resources, and we have a long tradition of managing these resources in a long-term perspective to the benefit of society. This has formed the basis for value creation in the blue industries. The ocean industries currently constitute a considerable share of the Norwegian economy, and provide a living for many coastal communities. Norway has become a leading ocean economy largely thanks to well-developed business communities and local communities along the entire coast, with skilled employees and strong businesses. The competence and the business communities give Norway an important competitive edge globally. A future-oriented regional policy is therefore also a good ocean policy.

In 2015, the UN General Assembly launched its 2030 agenda for sustainable development. The 17 Sustainable Development Goals (SDGs) of the agenda are to promote social, environmental and economic development. The UN Agenda 2030 is the world's roadmap for our national and international efforts to fighting poverty and hunger, ensuring sufficient and safe food, decent work, promoting gender equality, contributing to innovation, maintaining biodiversity, providing access to clean energy, and stopping climate changes. Sustainability goal 14 calls on the world to implement measures in order to conserve and sustainably use the oceans, seas and marine resources for sustainable development. Contributing to the fulfilment of the SDGs is a vital part of Norway's ocean efforts internationally, nationally and regionally. The 17 goals are connected and reflect the fact that the challenges are complex, and that they must be resolved jointly.

The UN 2030 Agenda





Source: Menon Economics (2019)

The deck of drilling platform Johan Sverdrup at the Aibel shipyard in Haugesund, May 2018. Photo: The Ministry of Petroleum and Energy

The Government's ocean policy shall enable the potential for further sustainable job and value creation in the ocean industries, which represent a large percentage of value creation and employment in the Norwegian economy. The research and education policies supports a good ocean policy, and the long-term plan for research and higher education 2019–2028 has the ocean as one of five priority topics.

The oil and gas industry is the largest ocean industry in Norway, with a value creation of NOK 560 billion in 2017. The maritime industry is the second largest with a total value creation of NOK 130 billion, while the seafood industry had a value creation of NOK 71 billion. As can be seen from figure on page 8, there is an overlap between the ocean industries, and our numbers for the value creation in the ocean industries cannot be totalled since several parties belong to more than one ocean industry. Among other things, this applies to the supplier industry, which provides services and equipment to more than one ocean industry, and many parties in the maritime industry are focused on the oil and gas industry. Therefore, about 55 per cent of the maritime value creation overlaps with the oil and gas industry.

There are great opportunities for blue growth. The OECD estimates that the global ocean economy will double by 2030 compared to 2010, while providing a total of 40 million jobs.¹ The world population will be close to 10 billion by 2050, and an increasing number of people will have better purchasing power.² This means that the need for food, energy, goods and services will increase. There is also potential for further growth in the Norwegian ocean industries. The SINTEF study on Ocean industries in the north and business development and value creation up to 2040, shows a considerable growth potential for fisheries, aquaculture, the maritime industry as well as oil and gas, and new ocean industries.

Climate change, loss of biodiversity, pollution, marine litter and microplastics affect the world oceans and threaten the marine environment. Reducing emissions and adapting to climate change are central challenges. Global warming has consequences for biological production, the distribution of fish stocks, the functionality of ecosystems and the sea level; and CO₂ emissions contribute to acidification of the oceans.

International collaboration is therefore fundamental in managing ocean resources between countries, including between Norway and its ocean neighbours. Our ocean industries are highly export oriented and depend-

ing on access to markets and competitive framework conditions. Our ocean industries depend on well-functioning international collaboration.

The UN Convention on the Law of the Sea of 1982, the constitution of the oceans, is the international regulatory framework for the management and use of the ocean and ocean resources. According to the convention, coastal states have the right to use the ocean and its resources, as well as an obligation to protect the marine environment. The convention gives coastal states the sovereign right to make use of all natural resources out to 200 nautical miles and on the continental shelf, and it contains important provisions on collaboration, management and research.

The Government's ocean policy is based on the following basic principles, to: i) strengthen and further develop the Law of the Sea, ii) promote sustainable use and conservation of marine ecosystems, iii) contribute to knowledge-based management, iv) support the implementation of international instruments, and v) work to promote a holistic approach to ocean management which facilitates a sustainable ocean economy.

The updated ocean strategy "Blue Opportunities" is a continuation of the Government's Ocean Strategy and the white paper on the place of the ocean in Norwegian foreign and development policy of 2017. We have received contributions from the business community and other contributors to the work on ocean issues, which will be followed up. In the strategy we emphasize six central focus areas:

In Chapter 1 we present the Government's policy for *future-oriented ocean industries*. Chapter 2 deals with *skills, education and employment*, because skills and recruitment are vital to the business community, administration and knowledge communities. The topic of Chapter 3 is *research, technology and innovation*, where industry-oriented research and technology development are particularly emphasized. Sustainable management of ocean resources based on *good management and predictable framework conditions* is the topic of Chapter 4. In Chapter 5 we present the ocean policy ensuring that we have *clean and rich oceans*. Here the goal is to protect marine biodiversity and a clean ocean. Norway will continue to play a central role in international ocean issues, and in Chapter 6, the topic is *international cooperation and ocean diplomacy*.

¹ OECD (2016), "The Ocean Economy in 2030".

² The United Nations Population Division (2019)



Future-oriented ocean industries

Supporting continued sustainable growth and employment in the established, as well as in the new and emerging ocean industries, is an important ambition in the Government's ocean policy. The ocean industries must be considered together, with emphasis on the synergies and opportunities arising between the industries. The framework and instruments must support this. The ocean-based business community has contributed to vital local communities along the coast, which are important to ensure continued growth.

**We facilitate growth
and job creation in the
ocean-based industries.**

Technology and knowledge transfer between industries

Norway's established and emerging ocean industries operate partly in unsheltered areas, with strong winds, high waves and cold temperatures, and have developed technology and solutions that can tolerate such challenges. New advances and technological solutions open for increased technology transfer, learning across industries, and increased access to skilled labour. This could make the ocean industries more robust and less vulnerable to market fluctuations. The emerging industries build on the skills and technology which has been developed in established ocean industries, especially the oil services industry. The green shift in the economy provides new opportunities for readjustment, innovation, and growth.

Oil and gas

The oil and gas industry is an important source of welfare, jobs, and the development of cutting-edge technological solutions. It is estimated that the industry will contribute NOK 263 billion net profit to the government in 2019. We currently have a high-tech, world class oil and gas industry with skills and technology which are also employed in the other ocean industries. There are considerable remaining oil and gas resources on the Norwegian shelf. The Norwegian Petroleum Directorate estimates that after 50 years of petroleum activities, we have extracted about half of the total petroleum resources.

Global energy consumption is expected to increase considerably in the future due to population growth and increased economic growth, especially in Asia. Strict requirements for emissions to air and sea on the Norwegian continental shelf as well as economic incentives have resulted in considerably lower emissions from the Norwegian petroleum activities than the average for

other countries. Thus, companies with experience from the Norwegian continental shelf are in a good position to meet the increased demand for energy with relatively lower emissions.

There are currently 84 oil and gas fields in operation on the Norwegian shelf, and in 2018, the authorities approved nine new plans for development and operation. The development of the Johan Sverdrup field in the North Sea is the largest industrial project in Norway in decades, with investments of about NOK 140 billion. The investments in the Sverdrup field and the revenue of the licensees, the suppliers and the Government will have a large positive impact the economy and on society. The operator of the field, Equinor, estimates more than 150,000 full-time positions in the development phase, distributed over the period 2015–2025. The Johan Castberg field in the Barents Sea is also under development with investments of NOK 47 billion, and the employment effects are estimated to about 47,000 full-time positions in the development phase. In operation, the field will constitute slightly more than 1,700 full-time positions in a normal operating year.

Predictable framework conditions are important to the petroleum industry. The Government will continue to facilitate profitable production of oil and gas through predictable framework conditions, including continuing the practice of regular licencing rounds on the Norwegian continental shelf, in order to give the industry access to new exploration areas.

Shipping

Norway's long history as a maritime nation has yielded knowledge and skills. Maritime transport is becoming increasingly energy efficient, and Norway is leading the development internationally in making shipping greener. The Norwegian fleet is modern and specialised in



Zero-emission vessel Future of the Fjords takes tourists into Nærøyfjorden, one of three Norwegian fjords on the UNESCO World Heritage List. Photo: Sverre Hjørnevik / visitflam.com

Gas from the Norwegian Sea is transported in pipes to the processing plant at Nyhamna in Aukra municipality, Møre og Romsdal. From here, the gas is exported to Great Britain and other countries in Europe. Norway is the third largest exporter of gas in the world. Photo: The Ministry of Petroleum and Energy

capital intensive segments such as offshore, chemical tankers and ro-ro (vehicle transport). Measured in fleet value, Norway is the world's fifth largest maritime nation, and the world's seventh largest maritime nation measured in the number of vessels³. The industry is focused on development, testing and implementation of high-tech solutions. By 2021 there will be about 70 electrical or hybrid ferries in service along the coast⁴. This represents more than one third of the country's car ferries. Alternative propulsion technology for other vessel types has also been developed. However, the implementation of new technology for these segments has not been advancing at the same pace as the ferry segment. The Government's ambition is to cut emissions from domestic maritime traffic and fisheries by half by 2030, and the Government is stimulating low and zero emission solutions in all vessel categories. The Government's action plan for green shipping (2019) will present a policy to cut national emissions of greenhouse gases, strengthen the Norwegian maritime industry, and contribute to global technological development which is necessary for the world to reach the goals of the Paris Agreement.

Since 2015, the Green Shipping programme has contributed to raising awareness and commitment to greener maritime traffic. The studies and pilots in the public-private collaboration help develop zero and low emission solutions that will make Norwegian domestic maritime traffic more climate and environmentally friendly. The Government has allocated NOK 7 million to the programme in 2019.

Norwegian technology companies develop and provide many of the new solutions in maritime transport. Export of Norwegian green solutions internationally is even more relevant due to stricter environmental requirements in international maritime traffic. The UN International Maritime Organisation (IMO) has adopted an ambition to cut emissions from international maritime traffic by half by 2050. The global market for low and zero emission solutions will probably grow rapidly in the next decades.

Norway is one of the few high cost countries still building vessels. In return, these are very high-tech and advanced, which provides an important competitive advantage for the shipyards. The Government aims to make Norwegian shipyards and equipment suppliers more competitive. Since 2017, the Norwegian Export Credit Guarantee Agency (GIEK) has been able to provide lender guarantees for export related investments in Norway. Guarantees can be given for loans for investments in e.g. production facilities, machines and equipment. In 2018, a new three-year financing scheme for vessels was established in GIEK and Export Credit Norway. It is now possible to receive loans and guarantees for purchasing vessels from shipyards in Norway for use in Norway, such as fishing boats, ferries, fish carriers, speedboats, and commercial shipping vessels.

The Government wants to stimulate further green growth and competitive power in the Norwegian maritime industry, as well as facilitate increased export

of low and zero emission technology in the maritime sector, for example by securing better market access through trade agreements with emerging markets.

Seafood

Norway is an ocean economy that is rich in living marine resources. The large quantities of fish in Norwegian waters have provided Norway with food, jobs and income for a long time. During the past decades, aquaculture has emerged as a significant industry. Norway is the world's leading producer of farmed salmon. In 2018, Norway exported seafood worth NOK 99 billion. The Government will facilitate further growth in the seafood industry within a sustainable framework.

In aquaculture, the Government has implemented a new system to adjust production capacity which facilitates predictable and environmentally sustainable growth in salmon and trout farming. In 2018, 24,000 tons of new licence capacity was allocated in the first round. The Government received approximately NOK 4 billion in revenues, and 80 percent of this was allocated to municipalities and county municipalities through the aquaculture fund. A new assessment of the environmental impact will be made in 2019, and subsequently every second year, aiming at implementing a subsequent round of capacity adjustments. There is also potential to develop farming of species other than salmon and trout. In 2019, the Research Council of Norway will look into the opportunities and challenges when farming other species.

Offshore aquaculture is fish farming taking place further off the coast than what is common today. This is a potentially new development track for the seafood industry which could provide opportunities for increased salmon export, as well as export of new technology and knowledge. The Government is working to adapt parts of the existing regulatory framework in order to give the industry a good and predictable regulatory framework when it moves into more exposed areas, and to ensure that environmental concerns, fish health and fish welfare, other ocean industries, a safe work environment, et cetera are safeguarded.

The Government will facilitate sustainable management of our fish stocks based on the best available scientific knowledge. New knowledge about sustainable fisheries also provides new opportunities for the industry, and in 2019, the Government opened for a new fishery; commercial harvesting of copepod. Sustainable management of marine resources also includes the need for good national resource management and effort to combat fisheries crime.

Norway has a significant production industry using fish, crustaceans and other marine resources as raw materials in its production. At the same time, there has been development towards increased export of whole fish over time, while further processing takes place outside Norway. A competitive seafood industry will to a larger extent be able to offer year-round, attractive jobs. The Government will facilitate increased processing of seafood in Norway and focus on increased value creation from residual raw materials from marine food production.

3 UNCTAD «The Review of Maritime Transport 2018»

4 The Norwegian Public Roads Administration (2019)



Northeast cod fishing with Danish seine in Lofoten. Photo: The Directorate of Fisheries.

Tourism

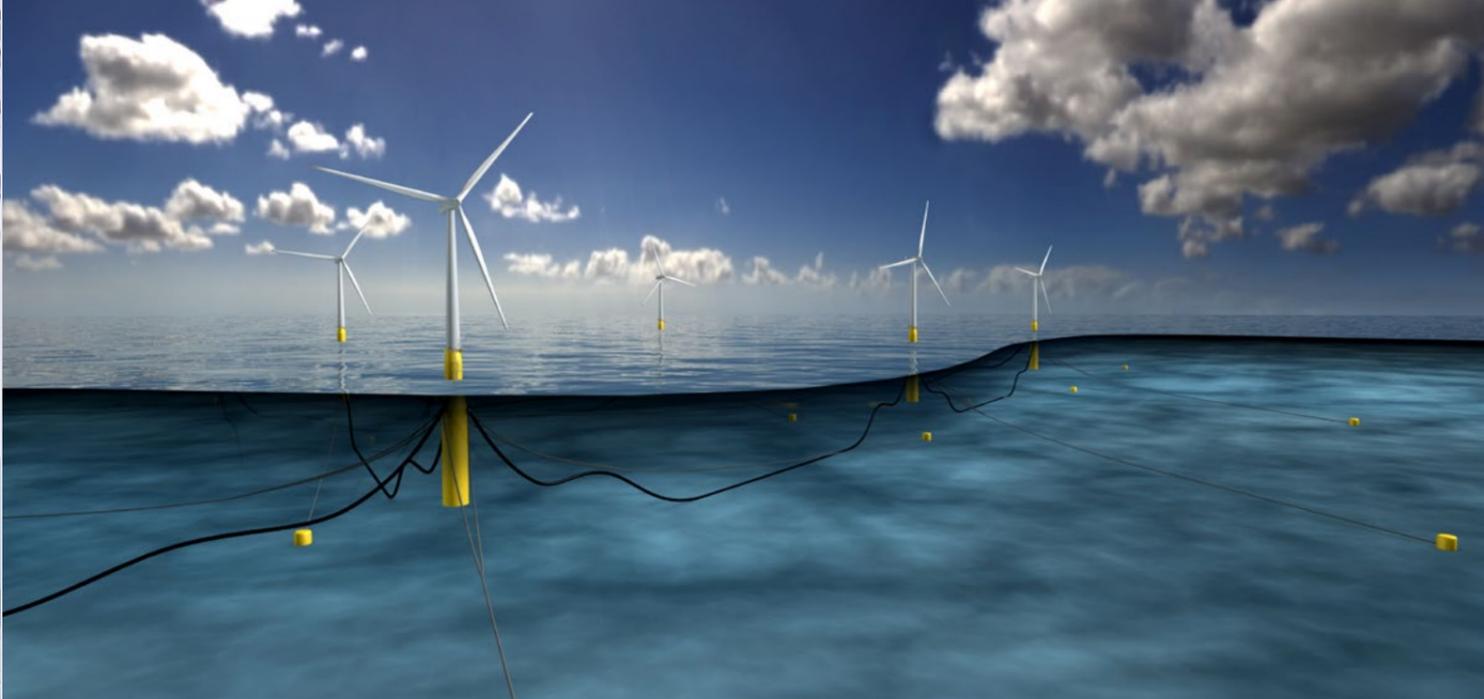
Tourism is a growth industry in many coastal communities, and it is based on resources from nature, culture and local communities. There are a number of adventure-based tourism activities associated with the ocean, such as sailing, diving, fishing and whale safari. Norway as a cruise ship destination is also growing. An increasing number of travellers puts a stronger pressure on the environment, resources and coastal communities. The Government therefore emphasizes sustainable development of Norwegian tourism, and has, among other things, implemented new and stricter environmental requirements to emissions from the cruise traffic in the world heritage fjords, effective from 01 March 2019.

Norwegian food traditions based on local produce from sea and land are also a resource in the development of Norwegian tourism. Active interaction between the food and tourism industries could help generate increased revenue and profitability in both industries. The tourism industry could contribute to strong local communities and good services for the local population, as well as the rest of the market. The Government will discuss whether the principal responsibility for the tourism initiative in Innovation Norway is to be transferred from the state to the county municipalities.

Carbon capture and storage

Norway has decades of experience with capture and storage of carbon dioxide (CO₂) under the seabed on the Norwegian shelf. About 1.7 million tons of CO₂ from the gas production have been stored annually from the Sleipner and Snøhvit fields. Overall, this constitutes 3–4 percent of Norway's total emissions. Capture and storage of CO₂ could help reduce emissions in industrial processes where there are currently no alternative technologies, as well as enabling conversion of natural gas to emission free hydrogen gas. Experience with CO₂ handling makes the Norwegian business and research communities well equipped to participate in the further development. The Norwegian Petroleum Directorate estimates that it is possible to store more than 80 billion tons of CO₂ in reservoirs on the continental shelf.

In the Norwegian full-scale demonstration project for capture, transport and storage of CO₂, the capture of CO₂ from two industrial sources, the Norcem cement factory in Brevik, Porsgrunn and Fortum Oslo Varme's waste management facility at Klemetsrud in Oslo, is being studied. Storage of CO₂ on the Norwegian shelf by Equinor in collaboration with Shell and Total is also being studied, aiming to establish a high-capacity storage facility. According to the current progress plan, an investment decision could be made in 2020. A successful implementation could enable more emission points to connect to the CO₂ storage facility and save costs by using shared infrastructure and through technology transfer. This may contribute to important



Hywind Scotland is the world's first floating wind park, and it has been developed by Equinor. The technology was developed in Norway and tested outside Karmøy. At the Marine Energy Test Centre (METCENTRE) outside Karmøy, one plans to test several foreign floating wind turbine concepts in the future. There is a strong industrial community around METCENTRE, and the Norwegian Offshore Wind Cluster was included in Innovation Norway's Arena programme in November 2018. Illustration: Equinor.

emission reductions in order to reach the global climate goals and give new commercial development. It is the Government's ambition to realise a cost-effective solution for full-scale CO₂ handling in Norway, provided that it gives technology development in an international perspective.

Seabed minerals

On the Norwegian continental shelf, there are metallic minerals which are important elements in the production of wind turbines, electric vehicles, solar panels, computers, mobile phones and other electronics. There is increased international demand for several of these metals. The Norwegian Petroleum Directorate is in the process of mapping the resource potential for seabed minerals on the Norwegian continental shelf. In the long term, there could be opportunities for profitable extraction of seabed minerals from the Norwegian shelf. The new Seabed Minerals Act will ensure that extraction will be done in an environmentally safe and sustainable way. The Government will consider opening parts of the Norwegian continental shelf for commercial and sustainable extraction of seabed minerals.

Offshore wind power

Offshore wind power is growing rapidly internationally. Today, nearly all offshore wind turbines are fixed to the seabed. However, Norwegian ocean industries have considerable maritime and petroleum-oriented competence which could play a role in the development

of floating wind power farms. Several Norwegian businesses participate in international projects associated with both fixed and floating wind power. The industry sees considerable opportunities in floating wind power, since the offshore competence will be a competitive advantage when developing, installing and operating large windmills in deep waters. Cost development determines the extent to which offshore wind power can compete with land-based alternatives in Norway. In the long term, offshore wind power could become profitable in the Norwegian market, and the Government is therefore preparing opening areas for licence applications for renewable offshore energy production.

Digitalisation

The development of new technology, digitalisation, autonomy, and big data will play an important role in the development of the ocean industries in several areas. The increased use of artificial intelligence could give a higher recovery rate from more efficient operation of oil and gas fields. This also gives us an opportunity to further develop a supplier industry that combines industrial competence with digital competence. The development of digital solutions is also the key to improved energy efficiency in maritime operations, including remote operation from land. Due to increasing activity in the North, the need for satellite-based services will increase. Satellites can help monitor ocean areas, assist in search and rescue operations, help prevent accidents, and provide information on marine litter and



Sugar kelp cultivation. Photo: SINTEF.



Nordlaks has been granted funding from Innovation Norway to develop Havfarm, a new type of fish farm. The company has also been granted development licences from the Ministry of Trade, Industry and Fisheries. The new fish farm can be located in exposed waters, and should be able withstand up to 10-metre-high waves. Photo: Nordlaks/NSK Ship Design.

pollution. Satellites can facilitate operative activities in fisheries, offshore and maritime transport, in addition to communication, mapping and weather reports. In 2018, the Norwegian Parliament (the Storting) gave Space Norway AS a conditional pledge of equity to enable the company to establish a system for satellite communication in the Northern areas, with the purpose of establishing stable broadband coverage in the entire Arctic region. The project will not be initiated until it is clear that it will be commercially profitable.

Export and market access

The Norwegian ocean industries depend on access to international markets. Good trade agreements are a prerequisite for this, and the Government gives the trade agreement efforts a high priority. The authorities are promoting Norwegian businesses abroad through a number of schemes. Innovation Norway, the Norwegian Export Credit Guarantee Agency (GIEK), and Export Credit Norway AS help promote export and internationalisation by facilitating financing, counselling and profiling Norwegian businesses abroad. The authorities collaborate with several industry-oriented organisations, including the Norwegian Seafood Council, who promote Norwegian seafood, Norwegian Energy Partners (NORWEP), who promote the Norwegian energy industries, and Norwegian Maritime Exporters, who promote maritime businesses abroad. Our diplomatic

missions promote Norwegian commercial interests through their networks, knowledge of local conditions, and by creating meeting arenas for the business community in their service areas.

In order for the efforts to promote Norwegian businesses abroad to be as coordinated as possible, business organisations and government parties collaborate in the network Team Norway. The Government has given a high priority to the efforts to promote the ocean industries in Team Norway. An important part of Innovation Norway's work is to help the ocean industries, especially climate and environmental technology. Among other things, this is done through the initiative "Branding Norway", where the service "The Explorer" shows examples of sustainable Norwegian solutions. A project for profiling the ocean industries called "Branding the Blue" has also been initiated. The Seafood Council has made targeted efforts to build the reputation of Norwegian seafood in key markets. A new label of origin has been developed for Norwegian seafood, "Seafood from Norway". The aim is that consumers abroad associate Norway with high quality seafood and choose Norwegian products. NORWEP member companies in the oil and gas sector see increasing export opportunities also in the renewable sector, especially in offshore wind power.

The UN 2030 Agenda

The work on future-oriented ocean industries support the UN 2030 agenda, especially Sustainable Development Goal

7 RENEWABLE ENERGY



8 GOOD JOBS AND ECONOMIC GROWTH



9 INNOVATION AND INFRASTRUCTURE



12 RESPONSIBLE CONSUMPTION



13 CLIMATE ACTION



14 LIFE BELOW WATER





Skills, education and employment

In total, the Norwegian ocean industries employ more than 206,000 people. Safe and attractive jobs are important in order to maintain recruitment of highly competent labour. The knowledge and experience based skills in the Norwegian ocean industries are maintained and developed along the coast and at sea. The use of increasingly advanced technology in the established ocean industries and the emergence of new ocean industries will require further development of education and skills. The increasing extent of digitalisation and automated processes requires labour with skills, knowledge and adaptability that can further the competitiveness of the Norwegian ocean industries.

We will work towards ensuring adequate and relevant skills for current and future ocean industries.

Responsible labour market

The Government's goal is a labour market with safety and flexibility for workers, responsible employers, and well-functioning and efficient third-party collaboration. In order to be a leading ocean economy, the safety and welfare of workers must have priority. In order to secure a good and well-functioning labour market, we need supervision and enforcement of regulations, as well as established standards for good health, safety and environment routines in the workplace. Effective control is important in order to identify violations of workers' rights. Fighting labour crime effectively requires a coordinated response. We will increase the focus on targeted controls in order to expose labour crime also at sea.

Gender equality

The ocean industries are an example of the gender segregated labour market, since several of the industries have a small percentage of female employees. For example, men are often overrepresented in ownership and senior management. Girls and technology is a nation-wide scheme aiming to increase the number of girls in technological disciplines on all levels of the education system. This is relevant for all industries facing technological changes. The Government increases the support for the scheme this year. Increased female entrepreneurship is a key element in attaining more gender equality in the business community. An action plan for female entrepreneurs is being prepared, which will examine how we can better adjust current policy instruments to promote female entrepreneurship.

Skills as a competitive advantage

The skills acquired by seafarers, fishermen and oil and gas workers in combination with research-based knowledge, have been vital to improve and optimise design, building and operations of fish farms, installations, and vessels. In collaboration with the employers'

and employees' organisations and the business community, we will continue and strengthen this competitive advantage through an active policy for skills and employment in the ocean industries.

The ocean industries utilise skills from a number of disciplines from various parts of the education system. Vocational training in secondary education, technical and higher education are all important to secure highly competent labour in the ocean industries. In the efforts to follow up on the Norwegian Government's Ocean Strategy of 2017, quality and relevance in technical education has been strengthened in line with Government White Paper about skilled workers for the future⁵. We will accommodate an increased intake of professionals from vocational and technical training, as well as engineers, technologists, natural scientists, social scientists, lawyers, and economists from higher education. It is vital for the competitiveness of the Norwegian ocean industries that they have access to relevant skills from a wide range of workers also in the future. At the same time, traditional disciplines such as navigation, geology, and related disciplines will still be key areas of knowledge for future utilisation of ocean resources.

Digital skills and knowledge

New technological and digital solutions create a need for new skills, such as formalised operational expertise. New technology development also provides more opportunities for innovative solutions. Enabling technologies and digitalisation have great potential in all of the ocean industries. Automated drilling solutions for offshore wells, autonomous vessels and automated feeding stations, as well as an increasing extent of automated processes, contribute to safer, more efficient and more climate and environmentally friendly production in the ocean industries. Expertise in autonomous systems, robotics, the Internet of Things, big data and

⁵ Meld. St. 9 (2016–2017) not available in English. "Skilled Workers for the Future"



Experience-based competence from the ocean is crucial in the Norwegian ocean industries, in the maritime sector, fisheries and aquaculture, petroleum, and new industries. Photo: Vigdis Askjem /Maritim Logg



The Offshore Simulator Centre in Ålesund performs virtual operations in real time. Simulation is used for education and training, but it is also an important tool for procedures, planning, and prototyping. Simulation saves time and money, reduces risks and can create new innovations. Photo: Offshore Simulator Centre.

artificial intelligence will be increasingly important for the international competitiveness of the industries, and could provide further synergies across the ocean industries. Since 2016, the Government has allocated funds to more than 1500 new places for students in ICT programmes at universities and colleges in order to secure the business community increased access to competent professionals. In accordance with the Long-term plan for research and higher education 2019–2028, the Government will also facilitate increased digital skills and knowledge and the use of new technology. Colleges and universities are to lift digitalisation to a strategic level and prepare goals and binding measures for digitalisation in education and research in order to ensure that candidates obtain the relevant and necessary digital skills and knowledge. The Government will also strengthen digital skills in the ocean industries through a targeted focus on digitalisation in ocean related study programmes.

Interaction and collaboration

Adequate and relevant skills in the industries and public administration will be vital to further sustainable growth and employment in the ocean industries. This will enable us to better utilise the resources in the ocean and from the continental shelf, and help preserve clean and productive oceans also for the coming generations. Stronger interaction between the national and regional authorities, the business community and educational institutions is vital in order to secure the industries access to sufficient and relevant labour. The Government will strengthen the responsibility of county municipalities for providing relevant education adapted

to local and regional needs. In accordance with the Government White Paper on the responsibilities of the new administrative regions, the county municipality plays a more comprehensive role in policies for skills and training, extending its responsibility beyond the ownership and operation of secondary schools and vocational schools.

The Government wants to equip students for the future labour market through their acquisition of good and relevant skills and knowledge. In the upcoming Government White Paper on work relevance, the Government will assess how to strengthen collaboration on higher education between universities, colleges and the industry. The ambition is to raise quality and work relevance in education through a larger extent of mutual collaboration on mapping demand for skills and enhancing students' learning.

Life-long learning

Continuous transformation of the ocean industries increases the need for continuous skills development in the labour market. It is therefore important to enable the education system to meet the needs for post-qualifying and continuing education in order to help maintain the competitiveness of the ocean industries. In 2020, the Government will present a white paper to the Norwegian Parliament on the competence reform "Life-long learning". In the white paper, the Government will evaluate measures that could contribute with relevant and flexible offers of continuing education for increased skills in the labour market.

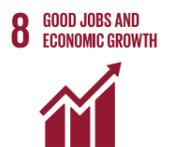
Vital local communities

The access to adequate and relevant labour is a challenge, particularly in the northern parts of the country, where a substantial part of the future growth in the ocean industries is expected, and the population is declining. In connection with following up on the Arctic strategy, the Government in 2019 launched the programme "N² – Future Suppliers in Northern Norway" with the three northern county municipalities and the Sami Parliament. This initiative is tied to instruments for skills, research and innovation in order to strengthen the supplier communities of Northern Norway. Vital local communities depend on attracting labour. Although the Government sets an important framework for social development, local development is largely dependent upon what local players, the municipality and the county municipality are able to change and develop. Collaboration between municipalities, educational institutions, the business community, volunteers and the county municipality, is an important condition for utilising the potential. This makes regional policy an important part of future ocean policy.

With the 2020 regional reform programme, the Government will strengthen the responsibility of the county municipality for providing relevant education adapted to local and regional needs. Through close contact with the business community and the municipalities, the county municipality will be able to identify the need for labour in the region, including in the ocean industries. This improves county municipalities' ability to adjust the composition of study programmes being offered in secondary schools and vocational schools, in accordance with the needs in the ocean industries.

The UN 2030 Agenda

The work on skills, education and employment support the UN 2030 agenda, especially Sustainable Development Goal





Research, technology and innovation

Research, knowledge and technology development is crucial in order to release the potential for sustainable job- and value creation in the ocean industries. More research and development provide value creation and growth through the development of new goods and services, production methods and solutions, while resources are safeguarded in a responsible manner. Also, the exchange of knowledge and technology across sectors allows for new opportunities in Norwegian ocean industries.

We support research and technology development that contribute to sustainable job and value creation in the ocean industries.

The long-term plan for research and higher education

Interdisciplinary challenges in the intersection between technology, social and natural science require that we continue to develop knowledge, technology and methods. The opportunities and challenges include, among other things, more efficient and environmentally friendly maritime transport and energy production, aquaculture technology for more exposed locations, and satellite technology for maritime surveillance. The research efforts in the ocean industries include basic research where the goal is knowledge itself, as well as management-oriented and industry-oriented research to help respond to specific challenges and opportunities. The long-term plan for research and higher education 2019–2028 is the Government instrument for long-time prioritising of research resources. The ocean has been highlighted as one of five long-term priorities in the long-term plan, where good management, clean and rich oceans, healthy and safe seafood and sustainable business development are vital, in line with the Government's overall ocean policy.

Research and innovation

The Government has given the ocean priority in the national budgets during its term in office, and is leading an extensive research and innovation policy that benefits the ocean industries. The ocean industries benefit through schemes in the Research Council of Norway, Innovation Norway, and the Tax Refund Scheme for Research and innovation (Skattefunn). In 2018, nearly NOK 4.2 billion were allocated to the ocean industries through the policy instruments. This was an increase of NOK 1.8 billion from 2013. In 2018, Innovation Norway granted a NOK 523 million funding from the environmental technology scheme. More than half of these grants went to projects in the ocean industries.

The Government has initiated a holistic review of the industry-oriented policy instruments, which will include the entire scope of the instruments. The purpose is to improve and simplify the current schemes for the users, as well as ensuring that we get as much value creation and profitable jobs as possible from public investments.

Green shipping

Enova grants funding for investments in climate- and energy initiatives in all sectors. Since 2015, Enova has allocated about NOK 1.5 billion to green shipping. The funding has been granted to the development of battery-powered vessels in particular. Enova has also contributed about NOK 500 million to a competition-based development of onshore power supply in Norwegian ports within the same period.

The Pilot E programme is a collaboration between Innovation Norway, the Research Council of Norway, and ENOVA. The purpose of the scheme is that new products and services in environmentally friendly energy technology are to be developed and adopted faster, in order to help reduce emissions in Norway as well as internationally. Four projects representing zero-emission solutions for various types of vessels received Pilot E status in 2016. The projects are ambitious and will largely contribute to moving the frontiers of what is possible in maritime low and zero-emission transport.

Petroleum activity – reduced emissions and efficient use of resources

Improved extraction methods on the Norwegian continental shelf will provide substantial revenues to the Norwegian society. Therefore, R&D to increase extraction from producing fields is a priority R&D area. The Government's goal is for Norway to be a low-emission society in 2050. In order to help reaching the Government's climate



The North Sea is an important area for the blue economy in Europe, with its marine resources and technologically advanced industries. Through Interreg project PERISCOPE, innovation partnerships for sustainable business development in new blue markets are being built. The project is led by the South Norway European Office. Illustration: Ulstein Design and Solutions. Map illustration: Nordregio.

All animals in the Southern Ocean feed on krill. This small, shrimp-like species is so important that the ecosystem is often called krill-centered. After each trawl haul at the research vessel "Kronprins Haakon", students and researchers were busy sorting, measuring and weighing krill. Photo: Oda Linnea Brekke Iden / Institute of Marine Research.

goal, a new research centre for low-emission technology for petroleum activity on the Norwegian shelf has been established. SINTEF in Trondheim will be the host organisation for the centre. The centre is expected to mobilise several good applications from programmes such as Demo 2000 and Petromaks 2.

Wind power

Offshore wind is one of six priority areas in the national strategy for research and development of a new and climate-friendly energy technology, Energi21 (Energy21). Norway currently has public policy instruments supporting initiatives for new energy technologies, such as offshore wind technologies, in all phases of the innovation chain. ENERGIX is a large energy research programme in the Research Council of Norway. It started in 2013, aiming to realise key energy and industry policy goals, and is an important instrument in the implementation of the Energi21 strategy. A number of offshore wind projects have received funding in ENERGIX. This includes technology development in both floating and fixed offshore wind installations.

Ocean Pilot

There is an increasing international competition for development of leading technology, which means that it is vital to implement and commercialise new technology, solutions and services. Pilot projects, demonstration projects and upscaling require long-term funding. In 2018, the Government established Ocean Pilot, which is a dedicated pilot- and demonstration scheme for the marine and maritime sectors, in Innovation Norway.

The scheme is set up to help reduce the risk for private players who wish to realise and commercialise new ocean technology.

Test facilities and catapults

Through the Industrial Development Corporation of Norway (Siva SF), the Government granted funds for the establishment of three national catapult centres based on the ocean industries in 2018. The catapult scheme is to help businesses develop prototypes, test, simulate, and visualise, so that ideas are developed faster, better and with less risk. The three ocean catapults offer testing facilities, equipment, competence, and networks for businesses and research communities, and they cover disciplines and technology in digitalisation, virtual reality and prototyping, green energy, energy systems and energy technology, as well as environmental and material technology, respectively.

Laboratory capacity is needed for the ocean industries and for research on the marine environment. A new concept proposal for the renewal of the ocean laboratories at the Norwegian University of Science and Technology (NTNU) and SINTEF Ocean has been developed, called Ocean Space Laboratories. An external quality assurance (KS1) of the project has been performed, estimating an investment cost of NOK 6.1 billion. The project is currently in a clarification phase, and then it will be decided whether a preliminary project is to be implemented. The laboratories will be able to help increase value creation and improve the utilisation of synergies between the ocean industries. The Ocean

Space Laboratories will be able to provide training, basic research, applied research, innovation and testing in the same facility.

Norwegian ocean industries are leading in areas such as digitalisation and autonomy, and test areas have been established for autonomous vessels in the Trondheim Fjord, Storfjorden in Sunnmøre and in the Oslo Fjord.

Research collaboration with the EU and the UN Decade of Ocean Science

International collaboration in research provides access to new knowledge, technology, networks, markets, and infrastructure. Participation in the EU framework programme for research and innovation, Horizon 2020, is the largest single effort from Norwegian authorities in international research and innovation collaboration. Ocean topics are likely to become more clearly emphasised in the new framework programme Horizon Europe, than it was in Horizon 2020. It is important to Norwegian ocean interests and research communities that they use the opportunities provided in the UN Decade of Ocean Science for Sustainable Development (2021–2030). The decade is set to provide knowledge to help realise the sustainability goals. New knowledge that is developed during the decade, will also benefit Norway and the Norwegian ocean industries. At the same time, being an ocean economy with extensive expertise, Norway has a responsibility to contribute to better knowledge of the world oceans.

The UN 2030 Agenda

The work on research, technology and innovation support the UN 2030 agenda, especially Sustainable Development Goal





Good management and predictable framework conditions

Norway is, and will continue to be, a world leader in good ocean management, and will facilitate value creation from the ocean. This requires ecosystem-based management with a good scientific basis for plans and decisions, support for research and technology development, and predictable framework conditions. It requires that the industries are seen in context, effective regulation of business activity, and enforcement of the regulations. The climate changes affect the ocean environment and the resource base over time. Increased knowledge about the current and future climate is necessary in order to implement measures and adapt management to the changes. International collaboration is also a basic premise for a good and sustainable Norwegian ocean management.

We shall ensure a knowledge-based, holistic and responsible management of the ocean.

Holistic ocean management and framework conditions for the industries

Good management is created over time. Norway has modern and well-developed management systems for the ocean-based industries. There is a long tradition in Norway that our most important ocean industries are able to develop side-by-side and safeguard the environmental values in our ocean areas. Sector legislation regulates the ocean industries, and the resources are managed by the sector authorities in a long-term perspective. Since the ocean strategy was presented in 2017, existing legislation and framework conditions have been further developed, and new legislation has been adopted. A comparative analysis of regulations for ocean industries has been undertaken, which can be used in future regulatory work for both existing and new ocean industries.

The government will ensure a holistic framework for ocean-based industries, including area-specific frameworks for petroleum activity in the management plans for the Norwegian sea areas.

The management plans for Norwegian sea areas are a tool for facilitating value creation and food safety, and for maintaining environmental values in the marine areas. This contributes to clarity in the overall framework and priorities in the management of marine areas, greater predictability and coexistence between the ocean industries that are based on the use of marine areas and utilisation of the resources. The current sector legislation forms the basis for regulating activity in the management plan area. Through the management plans, it is ensured that different considerations are weighed against each other, and that the activities are considered holistically. The Government continues the current system with regular updates and revisions of the management plans. In 2020, a white paper will be presented to the Parliament on the revision of the management plan for the Barents Sea–Lofoten, and updates to the plans for the Norwegian Sea and the North Sea–Skagerrak.

Local planning and management

Coastal areas are important to the further development of Norway as an ocean economy. The development of the industries depends on good knowledge of the resource base, local planning and management, infrastructure, and well-functioning local communities along the coast. County municipalities and municipalities play an important role as local planning and environmental authorities. They prepare plans in accordance with the Planning and Building Act, balancing between sustainable use and protection of areas and facilitate business development. The Government emphasises further development of legislation, counselling, competence building and contribution to counties and municipalities in order to ensure good and updated plans. A new circular has been prepared on the legal basis for planning and resource utilisation in coastal areas, and a guide for planning in the coastal zone is under preparation.

Oil and gas

The oil and gas industry plays a key role in Norwegian economy, and it will continue to make considerable contributions to the financing of the Norwegian welfare society. The exploration policy will contribute to this. New, profitable discoveries that secure income, value creation and employment are important in order to maintain our welfare society. Stable framework conditions are important to the petroleum industry. In 2018, the Norwegian Parliament discussed a plan for the development and operation of the Johan Castberg oil field and the updated status of oil and gas activities on the Norwegian shelf. The Parliament decided that the Norwegian petroleum policy remains unchanged.

Seabed minerals

A new law concerning mineral activity on the continental shelf (the Seabed Mineral Act)⁶ has been adopted by the Parliament. The act will enter into force on 1 July 2019, and the Government will manage seabed minerals in line with the new Seabed Minerals Act, as well as

⁶ No official translation of the Act available as of May 2019.



Vard Langsten in Møre og Romsdal is to build three new coast guard vessels. They will be 136 metres long, 19 metres wide, and will have room for 100 people on board. Illustration: Vard.

Drone images from the Nykirke pier, Bergen. Research vessels G.O. Sars and Kristine Bonnevie. Photo: Lars Doksæter/ Screen Story / Institute of Marine Research

consider opening parts of the Norwegian continental shelf for commercial and sustainable extraction of seabed minerals.

Fisheries

The quota system of Norwegian fisheries has developed through continuous adaptations and initiatives in order to meet changes in stocks, the industry and society. The current quota system is both complex and controversial, and a more efficient, flexible, and modern system is needed. Therefore, the Government appointed a committee to evaluate the quota system. The committee presented its recommendations in 2016, and the Government is following up on the report, and will present a white paper on the quota system to the Parliament. The white paper will present the Government's proposal for a provident quota system for Norwegian fisheries.

A sustainable management of the fisheries requires that quotas and other regulations are complied with. The markets are also to an increasing extent, demanding reliable documentation that seafood is sustainably harvested. The Government wants better control of the extraction of our marine resources, and in June 2018 a public committee was appointed to give advice on future fisheries control systems. The committee is to give advice on technology that can provide reliable data on the resource extraction, as well as present proposals for changes to regulations and how control is most effectively organised. The committee is to submit its recommendations by December 2019.

Knowledge-based management

Good management of Norwegian ocean areas must be knowledge-based, and management-oriented research is to ensure an adequate knowledge base. Among other things, a number of surveying and knowledge acquisition programmes have been established. Many of these have been going on for a long time. Since 2005, the MAREANO programme has surveyed more than 10 percent of the seabed in the Norwegian economic zone. MAREANO surveys depth, seabed conditions, habitat and pollution. The programme is important as a basis for a holistic and ecosystem-based management of Norwegian ocean areas.

Surveying is also being done of select areas along the coast through collaboration between agencies, municipalities and county municipalities in order to secure a better knowledge base for area planning and resource management in the close coastal zone.

As part of a long-standing effort of knowledge acquisition in the North, the Norwegian Petroleum Directorate will conduct a seismic survey in the northern Barents Sea during the summer of 2019, which will provide important information on the geology of the Barents Sea and provide a better resource estimate. The Norwegian Petroleum Directorate has also started surveying the resource potential for seabed minerals on the Norwegian continental shelf, and during the summer of 2018, they conducted a mission in the deep-sea area of the Norwegian Sea.

The collaborative project The Nansen legacy is aiming to contribute to increased scientific understanding of climate and marine ecosystems in the central and northern parts of the Barents Sea. Ten Norwegian universities and research institutes participate in the project.

The ice-going research vessel "Kronprins Haakon" was put into operation in 2018, and has completed several surveys. The new building of the Fram Centre in Tromsø was put to use in 2018. The Government is investigating the possibilities for co-locating the Institute of Marine Research and the Norwegian Directorate of Fisheries in a new building in Bergen. A possible new building could provide opportunities for exchanging knowledge and strengthening competence between important knowledge and research communities. In order to increase knowledge of the blue economy in the Northern areas, the Centre for the Ocean and the Arctic was established in Tromsø in 2018.

Maritime transport

The sea is an important transport route. 80 per cent of the transport of merchandise and cargo in and out of Norway, is maritime transport. A prerequisite for using the ocean in this way, is good and efficient maritime infrastructure and services, in order for vessels to sail safely. It is therefore important to keep developing navigational infrastructure, maritime safety services, fairways, and new communication solutions (ITS). Digitalisation represents great opportunities for increasing maritime safety, streamlining the port network, and optimising the ocean-based logistics chains. Digitalisation in the maritime sector, including the development of autonomous vessels, could also lead to new requirements to maritime infrastructure, services and

regulations. It is therefore important that the authorities pay close attention to the development. The work on the white paper on National transport plan 2022-2033 is in progress and will be submitted in 2021.

The Government has submitted a proposal for a new law on ports and waters with the purpose of improving the conditions for maritime transport, helping reach transport and industrial policy goals, and addressing environmental concerns. The competition for ocean areas has increased in later years, and many are interested in using the coastal zone. The legislation is therefore intended to have a broader approach than unilaterally emphasising the maritime transport and port industry, so that it will, in association with e.g. The Planning and Building Act, safeguard more business interests and other user groups of the waters, as well as relevant climate- and environmental considerations.

Maritime safety

The Government is striving for a high degree of safety for life, health, environment and material assets nationally and internationally. Among other things, the technological development provides opportunities for safer, cleaner and more efficient operation of vessels, and presupposes high competence in the Maritime Administration and other authorities and in the maritime industry. New technology could also contribute to more efficient supervision, for example by using drones. The Ship Safety and Security Act and the Ship Labour Act, with associated regulations, are key legislation for the continuing efforts associated with maritime safety. Before the summer of 2019, the Government will submit a white paper concerning maritime safety for both commercial and recreational vessels.



EU programme Horizon 2020 has allocated NOK 35 million to the establishment of the ARCSAR network. The purpose is to develop new technology and plans, as well as to strengthen joint preparedness in polar regions. The network, which is led by the Joint Rescue Coordination Centre Northern Norway, consists of a number of countries, emergency operators, universities, and the business community. Photo: The Joint Rescue Coordination Centre Northern Norway

The AIS satellites receive data from vessels (Automatic Identification Signals, AIS), and they are of great importance for regulatory control and safety at sea in Norwegian ocean areas. AISSat-1 was launched in 2010 and AISSat-2 in 2014. Norsat-1 and Norsat-2, which were launched in 2017, also have AIS receivers on board. Photo: The Norwegian Space Centre / FFI / NASA.

Rescue and emergency preparedness

Value creation from the ocean presupposes a rescue service capable of assisting in emergency situations. The areas of responsibility of the Norwegian rescue service cover considerable ocean areas in Skagerrak, the North Sea, the Norwegian Sea, the Barents Sea and the Arctic Ocean. The rescue service is adapted to Norway's distinctive geography, climate, maritime resources, and government structure.

Maritime traffic has increased considerably during the recent years, and the increase is expected to continue. Melting sea ice and warmer oceans have led to more activity in the northern ocean areas. The fishing fleet is operating further north, cruise traffic in polar areas is increasing, and new fairways are assessed in line with the melting ice. Increased activity due to increased business activities and maritime tourism present a greater risk of accidents. The Government is monitoring the development and evaluating emergency preparedness continuously in light of the activity in the area and changes in the risk profile.

In later years, rescue preparedness has been considerably strengthened at Svalbard, and Longyearbyen is currently a platform for rescue and preparedness in the area. The District Governor has received two new rescue helicopters, and the sailing season of the service vessel "Polarsysse!" has been extended to nine months. The total rescue- and emergency preparedness in the North will be further strengthened by the acquisition of 16 new rescue helicopters with a much wider range, higher speed and better ability to operate in bad weather than

the current Sea King machine. This will be one of the largest investments we have made in civil protection and preparedness in later years. The Government is also assessing the need for other preventative measures that will give better rescue helicopter capacity in Troms and the adjacent ocean areas, where there currently are large distances to other long-range rescue resources.

The Coast Guard sails continuously in the ocean areas where Norway has jurisdiction, and it is a key operator in rescue preparedness at sea. In 2019, parts of the operative responsibility for the state towing preparedness has been transferred to the Coast Guard. It will therefore receive two new vessels from January 2020. Three new coast guard vessels are also under construction. These are to be phased in during the period of 2022-2024, and replace the vessels in the current North Cape class.

The Coast Guard also attends to the enforcement of Norwegian sovereignty, exercise of authority and support to civil society, and is an important authority representative in both coastal areas and in the large ocean areas in the North. The Coast Guard has a particularly important role in connection with offshore resource control, including contributing to sustainable use of the fish stock also in the long run. The Coast Guard works closely with the fishery authorities.

International collaboration strengthens emergency preparedness in our ocean areas. A bilateral sea rescue agreement has been signed with Russia on collaboration in the Barents Sea, as well as an agreement under the Arctic Council on collaboration in search and rescue in

connection with air and maritime traffic in the Arctic. Also, a bilateral agreement has been signed with Russia on mutual notification, drills and assistance on the event of acute oil spills in the Barents Sea, and an agreement between the member countries in the Arctic Council on collaboration in emergency preparedness and operations in the event of oil spills in the Arctic.

Regional reform

The Government wants power-distribution and building of society from below. Sustainable utilisation of natural resources must also have positive effects for local communities. The regional reform will be effective from 2020. With the reform, the county municipality gets a greater responsibility for industrial- and competence policy in the regions. These are important responsibilities and instruments in order to facilitate more jobs, growth capacity and balanced population development in the districts, in line with the goals of the Government's district and regional policy.

Based on the regional reform, and in order to contribute to the best possible dialogue between the regional and national levels, the Government will establish an Ocean Dialogue Forum for a systematic dialogue between the Government, the county municipalities, the Sami Parliament, and representatives for the coastal municipalities. Other parties are invited to join when needed. The dialogue will form the basis for increased trust and interaction between administrative levels at the national, regional and local levels. In this way, we will have better understanding of the various perspectives on blue growth. The purpose of the forum is to facilitate dialogue,

and it will not be a decision-making body. The members of the forum will jointly find topics for discussion, based on the focus areas of the Ocean Strategy concerning area planning processes, value creation, employment, and competence in coastal communities.

The UN 2030 Agenda

The work on good management and predictable framework conditions support the UN 2030 agenda, especially Sustainable Development Goal





Clean and rich oceans

Clean and rich oceans are prerequisites for a sustainable ocean economy. Future value creation depends on a healthy marine environment and biodiversity in the ocean. The ocean policy is to protect the environment in the Norwegian coastal and ocean areas, safeguard the ocean as a source of food, and facilitate sustainable use of ocean resources.

We will secure clean and rich oceans for the future.

Human activity offshore and onshore affects the marine ecosystems. A holistic understanding of the total impact from all activity is important. The environmental condition in Norwegian ocean areas is good, however, the North Sea and Skagerrak have somewhat higher concentrations of pollutants and marine litter than the other Norwegian sea areas. The global challenges also affect Norwegian ocean areas. The greatest environmental challenges are climate change, the loss of marine biodiversity, pollution and littering. If we are to continue to live off the ocean, we need sound ocean management in order to handle the challenges we face and ensure that economic activity is sustainable.

Climate and blue forests

The ocean plays a vital role when it comes to climate systems such as carbon- and heat storage. However, as an ecosystem it is also strongly affected by climate change and ocean acidification. A warmer and more acidic ocean will change living conditions in the marine environment, and may have great consequences also for humans who utilise the resources of the oceans. Climate change will have particularly serious consequences for our northern ocean areas, with changes to temperatures and PH value. In addition to this, there is melting ocean ice and increased run-off from Arctic rivers. Climate adaptation and reduced emissions must go hand in hand in order to prevent serious consequences from climate change.

At the same time, marine ecosystems may play a key part in fighting climate change and in climate adaptation. Blue forests – such as seaweed, kelp, and mangroves – have a considerable ability to bind carbon and protect the coast against erosion, storms, and flooding. Blue forests are also important to ocean productivity and biodiversity. The Norwegian Government will strive to secure blue vegetation and blue forests in order to bind carbon and safeguard marine biodiversity.

Biodiversity

Biodiversity creates the productivity from which we harvest, and makes the ecosystems adaptable. Norway will contribute to the efforts of developing a new global framework for biodiversity under the Convention on Biological Diversity after 2020. In order to strengthen the efforts to preserve marine biodiversity, the Government will present a plan for marine protected areas, aiming to preserve a representative selection of Norwegian ocean areas.

Pollution

Norway has strict regulations to prevent emissions and littering. However, marine litter and pollution in Norwegian ocean areas often originate from other parts of the world. These problems require international collaboration in order to be solved.

In 2018, the Norwegian Centre for Oil Spill Preparedness and Marine Environment was established in Svolvær, aiming to become an internationally leading centre of expertise in the efforts for a clean ocean. Among other things, the centre is to identify possible synergies between marine litter and oil spill preparedness in technology, methods and organisation. Within the topic of marine litter, the main focus is clean-up and prevention, especially from seaborne sources.

Local pollution has been a problem in many Norwegian ports. The national action plan for cleaning up polluted seabeds is being followed up. Clean-up projects in Puddefjorden in Bergen and Sandnesfjorden were completed in 2018. Funds are allocated for cleaning the Horten port.

The national preparedness against acute pollution is to prevent and limit environmental damage caused by acute pollution. The Norwegian Coastal Administration



Photo from the Directorate of Fisheries' annual clean-up mission shows the release of a red king crab that has been confined in a retrieved fish pot. Since the beginning of the clean-up efforts in 1983, 21,000 nets and 10,000 fish pots have been removed from the seabed, in addition to considerable quantities of other fishing equipment. This helps reduce the danger of ghost fishing and crumbling to microplastics. Photo: The Directorate of Fisheries.



Life on the seabed. Photo: Mareano / Institute of Marine Research.

is the national authority in the event of incidents entailing acute pollution, or the danger of acute pollution, and safeguards national preparedness against acute pollution by having personnel and material ready. The Government will continue to facilitate effective prevention against acute pollution to hinder and limit environmental damage.

Plastic litter

The Government has stepped up the efforts to prevent and reduce marine plastic litter. In 2017 we presented a separate plastic strategy in the white paper⁷ on waste as a resource, on waste policy and the circular economy. A subsidy scheme for measures to prevent and to clean-up marine litter has been established, with stronger support for volunteer clean-up work. A scrap refund scheme for scrapped leisure boats has been implemented, and a number of other measures are being considered in order to limit marine litter and microplastics. For example, there are ongoing efforts to reduce the unnecessary use of disposable plastic items, including introduction of a ban on some of these items.

The Norwegian Directorate of Fisheries continues its annual retrieval survey for lost fishing gear. In the pilot project "Fishing for Litter", participating vessels can

deposit ownerless waste caught in their fishing gear free of charge. There are ongoing efforts to have a permanent arrangement in place for depositing waste caught in fishing gear. A manufacturer responsibility scheme for equipment from fisheries and aquaculture is also planned. An application has been developed for recreational fisheries, where lost fishing gear can be reported. Based on the information of lost gear, many diving clubs have helped clearing lost fishpots. In 2018, 1883 fishpots were recovered by local diving clubs.

The ocean as a food source

A healthy and clean maritime environment is a prerequisite for securing sufficient, nutritious and safe food.

Good monitoring data and holistic knowledge are vital to making utility and risk assessments, and to document that the food we harvest, is safe and healthy. In order to safeguard the ocean's role as a future food source, a holistic approach is necessary. This takes place through collaboration between different sectors and parties with responsibility for the various elements of food safety in the food value chain.

The UN 2030 Agenda

The work on clean and rich oceans support the UN 2030 agenda, especially Sustainable Development Goal



Interreg project Circular Ocean demonstrated how waste such as dumped nets and ropes could be a resource. NTNU participated from Norway, along with research institutes in Ireland, Scotland, England, and Greenland. The project ran for three years from 2015. Photo: Circular Ocean.

⁷ Not available in English.



International cooperation and ocean diplomacy

Compliance with and further development of the Law of the Sea and international agreements are a priority for the Government. Norway will continue to be a reliable partner in international ocean cooperation as well as an attractive trading partner. The efforts to secure clean and rich oceans and sound ocean management are also important in the Norwegian development policy.

Norway shall be an active advocate for clean and rich oceans and knowledge-based, sustainable management of ocean resources.

Norway works internationally to promote understanding of the connection between a healthy marine environment, holistic and ecosystem-based management, sustainable use and value creation. Key elements in the Norwegian ocean policy are to promote, develop and defend the Law of the Sea and support the implementation of international instruments securing sustainable ocean management and good environmental conditions, something which will contribute to reaching the UN Sustainable Development Goals. Norway pursues an active international ocean policy founded on principles of good governance and emphasis on collaboration in ocean matters through regional and international organisations, and through bilateral collaboration.

High-level panel for a sustainable ocean economy

In order to help resolve the challenges facing the world oceans and release the potential in the ocean economy, Norway has assumed international leadership by establishing a high-level panel for a sustainable ocean economy. The purpose is to create international understanding for the economic importance of the ocean, and that sustainable use of ocean resources and securing a healthy marine environment, lead to increased value creation. The high-level panel, comprised of 14 heads of state and government and led by Prime Minister Erna Solberg, will present its report with accompanying action-oriented recommendations to the UN Ocean Conference in Lisbon in June 2020. The panel will, in collaboration with the scientific community, businesses and civil society, develop innovative and future-oriented proposals for a sustainable ocean economy while safeguarding clean and rich oceans.

The Our Ocean Conference

Norway is hosting the Our Ocean Conference in October 2019, gathering leaders of countries, the business community, the scientific community and civil society. Norway will announce its own commitments at the conference, and mobilise to get other countries, organisations and businesses to do the same. A central theme of the conference is that knowledge-based, integrated ocean management is a key to secure preservation as well as use of the ocean.

Work in the United Nations

The efforts to promote sound ocean management through the UN bodies are important to Norway. Under the UN General Assembly and through the Oceans and the Law of the Sea Resolution and the Sustainable Fisheries Resolution, Norway strives to promote a holistic and sustainable policy. Important UN forums for the ocean are: The UN International Maritime Organisation (IMO), the UN Food and Agriculture Organisation (FAO), the UN Environment Programme (UNEP), the International Seabed Authority (ISA), the UN Educational, Scientific and Cultural Organization (UNESCO), and the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM). The next large UN ocean conference will take place in 2020, and Norway will be an active part in ensuring a thorough review and progression of sustainability goal 14 Life below water. The challenges are often local and regional, and Norway is taking an active role in a number of regional organisations for fisheries management, research, environment and navigation, respectively.



Marine plastic littering is a global problem with local consequences. The Norwegian Coastal Administration and the Norwegian Centre for Oil Spill Preparedness and Marine Environment are exploring the possibilities of collaboration between volunteers and professional parties, for example in the Circular Cleanup project. Here with the “Plastic Pirates” at Lepsøya island, Møre og Romsdal. Photo: The Norwegian Coastal Administration.



Laying and recovery of oil boom outside Dar es Salaam. The preparedness division of the Norwegian Coastal Administration is giving directions. Photo: Ken Opprann/Norad.

In 2017, the UN General Assembly decided to establish a negotiation conference in order to develop a new legally binding agreement under the UN Convention on the Law of the Sea. The goal is to prepare an agreement for the conservation and sustainable use of marine genetic resources, area-based management strategies, impact assessments and capacity building. The consideration of existing agreements and sector regulations is important to Norway, while the need for holistic management moved together with work in the UN must be safeguarded. The work on the agreement is part of Norway's ocean initiative, given high priority and affecting a wide range of Norwegian ocean interests.

Changes to the environment and climate is a serious global challenge. It is expected that the UN Intergovernmental Panel on Climate Change's report on climate and oceans, which is to be presented in September 2019, will raise awareness of and emphasise the role of the ocean in the efforts to reduce emissions. Norway will therefore strive to integrate considerations for climate change, ocean level rise and acidification of the oceans in relevant international institutions and processes.

The business community's contribution to achieve the UN Sustainable Development Goals

It is crucial that the business community participates in solving the ocean challenges. Therefore, Norway supports the UN Global Compact initiative Action Platform for Sustainable Ocean Business. The main goals of the project are to create principles and guidance for businesses

to fulfil the 17 Sustainable Development Goals, and to apply the 10 principles of the UN Global Compact to the ocean industries. In order to achieve this, three work streams have been established: mapping of regulations for the ocean industries, identifying the opportunities for sustainable growth, and establishing the basic principles for conducting sustainable economic activity in the ocean.

The Norwegian Investment Fund for Developing Countries (Norfund) is the key instrument in Norwegian aid for increased business development and job creation in the private sector in developing countries. Through profitable and sustainable direct investment, and by offering risk capital and loans for small- and medium-sized enterprises, Norfund contributes to job creation and development within renewable energy, finance, food production and agriculture. The Government will strengthen the dialogue with the Norwegian business community on the opportunities of investing in ocean industries in developing countries, in order to contribute to value- and job creation.

Security at sea

Secure sailing on the world oceans is crucial to Norway as a significant maritime nation, and stability and predictability is vital to the global trade flows. International collaboration is important in order to ensure compliance with international law, including navigation law. Norway is part of the intergovernmental organisation ReCAAP, which aims to combat piracy and armed attacks on vessels in Asia. Its efforts have been, and are, considerable in both East and West Africa. In East Africa, Norway

helps in the prosecution of pirates. In West Africa, Norway's efforts are directed towards helping the coastal states' own efforts to overcome the challenges of piracy and armed attacks.

Sharing knowledge for clean and rich oceans

Norwegian experience and practice in managing resources, the environment and regulating the ocean industries are transferable to other countries. Norway supports a number of aid projects to improve ocean environment, sustainable management of marine resources and other ocean-related activities. Norway's efforts take place through different initiatives such as the programmes Oil for Development and Fish for Development. The Government will develop an Ocean for Development programme, which among other things could be an important tool for promoting knowledge-based and holistic ocean management in developing countries.

Marine litter

Norway is striving to increase the focus on and support for combating marine litter. The problem is largely due to the lack of onshore systems for waste handling, however, ocean-based industries are also sources of marine litter. Norway has proposed several initiatives, and the UN Environment Assembly's adopted Zero vision, is particularly important. No plastic waste should be discharged to the ocean. Norway is working towards establishing a new global framework to reduce marine litter. At the same time, Norway has won approval for

increasing the efforts against marine litter under existing agreements and organisations such as the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and the UN International Maritime Organisation. In the future, Norway will intensify its efforts to win international support for the need for a global agreement on preventing marine litter. The Government has launched an aid programme against marine litter, and NOK 1.6 billion has been allocated in the period 2019–2022 to help developing countries prevent and reduce marine litter and microplastics. The Government is also working on a strategy to strengthen the efforts against environmental crime both nationally and internationally.

Food from the ocean

The Norwegian Government strives to increase the role of seafood in a food safety- and nutrition perspective both nationally and globally. Norway has leading knowledge and competence of sustainable production of healthy and safe food from the ocean, as well as the connection between seafood and health. At the request of the World Health Organisation (WHO) and the UN Food and Agriculture Organisation (FAO), Norway has established a global action network for sustainable food from the ocean during the UN Decade of Action on Nutrition (2016–2025). The reduction of food waste makes economic sense, makes more food available and reduces the pressure on nature. On Norwegian initiative and financing, the FAO has developed an online guide to reducing food waste in the value chain for fish, which will be launched in 2019.



In certain areas, satellites are the only possible communications infrastructure offshore. They are particularly important in navigation and in search and rescue operations. In the UN Committee on the Peaceful Uses of Outer Space (COPUOS), Norway has taken the initiative to include two ocean-related goals in the Space 2030 agenda: a) Promote and strengthen the use of outer space for a sustainable ocean economy. b) Promote and strengthen the use of outer space to improve access to data and broadband globally, with particular focus on developing countries and areas with poorly developed onshore infrastructure. Photo: UN COPUOS.

Research vessel Dr. Fridtjof Nansen is a key part of the Nansen programme, which is being executed by the FAO. The Institute of Marine Research is responsible for the operation of the research vessel, and provides scientific services to the programme. The programme is funded by Norway, and the Norwegian Agency for Development Cooperation (Norad) owns the vessel. Photo: Kjartan Mæstad/Institute of Marine Research.

Overfishing and illegal fishing

Overfishing of important stocks is a major challenge worldwide. Over the last decades, Norway has been widely involved in international collaboration to facilitate sustainable fisheries management and satisfactory fisheries control and enforcement. Up to 90 percent of the marine resources we harvest, are harvested from stocks shared with other countries. The management of these resources is the topic of the annual fisheries agreements that Norway signs with other countries. The agreements are of great importance to ensure a sustainable fishery. Therefore, the agreements are based on independent scientific advice on quotas and management measures.

Illegal, unregulated and unreported fishing (IUU-fishing) is an extensive global problem. Norway has participated actively to get in place a legally binding agreement on port state measures, to prevent, deter and eliminate illegal, unreported and unregulated fishing.

Fisheries crime

It is estimated that as much as 31 percent of global seafood is caught illegally. This problem is to a large extent associated with a number of crimes such as economic crimes, human trafficking, customs and tax evasion and money laundering. The “blue shadow economy” is undermining a sustainable and fair blue economy. Norway is taking the lead in the global efforts to address organised fisheries crime and the blue

shadow economy. In 2018, Norway took the initiative to an international ministerial declaration on transnational organised fisheries crime, which sets out a framework for partnerships on this issue with a number of countries, of which most are developing countries. With the initiative the Government wants to support the particular needs that developing countries have in addressing fisheries crime. Fisheries crime constitutes a widespread and complex problem, that is cause of large losses of resources and potential income, in particular in developing countries. In addition to affecting tax revenue and export income in countries, it also affects the food safety and living conditions of the coastal population. Norway provides assistance to developing countries to strengthen fisheries crime law enforcement.

International trade

The Norwegian ocean industries are very export-oriented, and depend on open and effective international markets to ensure value creation and jobs in Norway. An open global trade regime is a basic prerequisite for the demand of Norwegian goods and services. As highlighted in the strategy called The world as a market, the Norwegian Government focuses on supporting ongoing and new processes to develop a multi-lateral trade network in the World Trade Organisation (WTO), as well as negotiating free trade agreements with prioritised countries. This approach reflects the developments in trade patterns, with the aim of reducing tariff barriers as well as other trade barriers.

World Exposition – EXPO 2020

Norway is to participate in the World Exposition EXPO 2020 in Dubai in the United Arab Emirates. It is decided that the Norwegian participation will focus on the ocean. An important goal is to help strengthen the international competitive power of the Norwegian ocean industries. It is also desirable to strengthen our commercial relations with countries in the Middle East, Africa, and Asia. These are important markets for Norwegian ocean industries. The Norwegian participation at the EXPO 2020 is a joint venture between the Government and the business community.

Regional involvement in international work

The Government supports Norwegian regions' and municipalities' involvement in European collaboration. International collaboration and regional development work should be viewed in context. New and larger county municipalities from 2020 will provide better conditions for this. It is important that the municipalities maintain their knowledge about the opportunities provided by participation in EU programmes in the years to come. The Horizon programme to strengthen research an innovation or initiatives such as JPI Ocean are examples in this regard. Interreg is also relevant to Norwegian communities involved in the development of ocean industries, while Erasmus+ provides education opportunities and work mobility between countries in Europe.

The UN 2030 Agenda

The work on international cooperation and ocean diplomacy support the UN 2030 agenda, especially Sustainable Development Goal





Mission with ice-going research vessel Kronprins Haakon in the Fram Strait 2018. Photo: Alicia Hamer / Norwegian Polar Institute.



The Norwegian Prime Minister Erna Solberg addresses the UN General Assembly (UNGA) in New York September 2018. Photo: UN Photo/Cia Pak.

Future focus areas

Oceans is a topic of high priority, and the ocean policy is under constant development. The Government continues to follow up on the measures in the ocean strategy "New growth, proud history" and the white paper on oceans in foreign and development policies from 2017.

In 2019–2020, the Government will present a white paper to the Norwegian Parliament on the quota system in fisheries, a white paper on the revision of the management plan for the Norwegian part of the Barents Sea and the Lofoten Area, and an update on the management plans for the Norwegian Sea and the Norwegian part of the North Sea and Skagerrak, a new white paper on space, a new white paper on the Arctic and a maritime white paper.

The Government has already accomplished a lot, and for the future ocean policy, we will emphasise three areas in particular; competence and digitalisation, climate and green shipping in addition to value creation along the entire coast.

Technology, working methods and the use of digital tools are developing rapidly in the ocean industries. We must ensure that the educational system has the adequate attention to new demands, and that we have the proper competence to make use of the opportunities technological advances give us.

The Government's goal is that Norway shall be a low-emission society in 2050. In order to help attain the Government's climate goals, we will strengthen the green shipping initiative. In 2019, a new research centre for low-emission technology for the petroleum industry on the Norwegian continental shelf, will also be in operation.

The regional reform will be in effect from 2020. National and regional strategies for business development must be seen in context in order to develop a good and holistic national ocean policy.

The Government will:

- Help develop technology for the **capture, transport and storage of carbon dioxide (CO₂)** in reservoirs on the continental shelf, having an ambition to realise a cost-effective solution for full-scale CO₂-management facilities in Norway, given that this provides technology development in an international perspective.
- Present an action plan for **green shipping** with the ambition to reduce emissions from domestic maritime traffic and fisheries by half by 2030, including stimulating zero- and low-emission solutions in all vessel categories.
- Facilitate adequate and relevant competence which is vital to good management, adaptability and sustainable growth in the ocean industries, including **strengthening digital** competence through a targeted initiative.
- Continue to strive for **good and equal working conditions**, and strengthen the efforts against labour crime and unreported employment.
- Contribute to a better dialogue between the regional and national levels by establishing an **Ocean Dialogue Forum** between the Government, the county municipalities, the Sami Parliament, and representatives from the coastal municipalities. Other parties are invited to join when needed.
- Enable **vital local communities** in all parts of the country. In the regional reform, county municipalities are given greater responsibility for regional industrial- and competence policy. Sustainable utilisation of ocean resources is also to have positive effects for local communities.
- Ensure a **holistic framework for ocean-based industries**, including area-specific frameworks for petroleum activity in the management plans for the Norwegian sea areas.
- Continue to have **predictable frameworks** for the established ocean industries; oil and gas, shipping and the seafood industry, as well as facilitating new, sustainable ocean industries through a legal framework and good framework conditions for e.g. offshore aquaculture, seabed minerals and offshore wind.
- Open one or two areas for licences for **renewable offshore energy** production and adopt regulations to the Ocean Energy Act.
- Manage **seabed minerals** in line with the new Seabed Minerals Act, and consider opening parts of the Norwegian shelf for commercial and sustainable extraction of seabed minerals.
- Develop a legal framework for **offshore aquaculture**, that facilitates further growth in the aquaculture sector.
- Follow up on the **review of the industry-oriented policy instruments**, aiming to improve and simplify the current schemes to facilitate value creation and profitable jobs.
- Continue to focus on **knowledge of the ocean**, good management, clean and rich oceans, healthy and safe seafood and sustainable industry development in line with the priorities of the Long-term plan for research and higher education, as well as enabling Norwegian participation in the **UN Decade of Ocean Science** for Sustainable Development as well as the ocean priority in the new EU framework programme for research and innovation.
- Continue to **facilitate for research infrastructure** and good testing facilities for the ocean industries, for example through following-up on the work on Ocean Space Laboratories.
- Further develop the **Norwegian Centre for Oil Spill Preparedness and Marine Environment**, for example by examining the establishment of testing and exercise facilities for oil spill preparedness technology in Fiskebøl.
- Contribute to innovation by supporting **research and technology development across the ocean industries**, and continue to focus on digitalisation and autonomous operations in the ocean industries.
- Continue to have sustainable and value creating oceans as a key area in the **Norwegian policy for the Arctic**.
- Help develop **sustainable ocean management internationally** through active participation in UN ocean processes, through the high-level panel for a sustainable ocean economy, as the organiser of the Our Ocean Conference 2019, through ocean dialogues with select countries, and through continued efforts to promote measures in order to help attain the UN Sustainable Development Goals by 2030.
- Secure **market access** through trade agreements and support the promotion of Norwegian ocean industries abroad, for example through “Branding the Blue” and “The Explorer” in Innovation Norway, and have the ocean as the theme for the Norwegian pavilion at EXPO 2020 Dubai.
- Continue the efforts to **combat marine litter and microplastics** nationally and internationally, for example by following up on the initiative for an international agreement, through collaboration with individual countries, and through Norwegian aid.
- Continue the Norwegian **aid to sustainable management** and value creation in ocean-based industries through the programmes Ocean for Development, Oil for Development and Fish for Development.
- Strengthen the dialogue with the Norwegian business community on the possibilities of investing in **ocean industries in developing countries**, in order to contribute to value and job creation.
- Work nationally and internationally to secure **blue vegetation and blue forests** in order to bind carbon and safeguard marine biodiversity.
- Prepare a strategy to strengthen the **efforts on work against environmental crime** both nationally and internationally.
- Strengthen the efforts to **prevent and expose fisheries crime** in Norway as well as internationally. Internationally, this will be done for example through the initiative “Blue Justice”, which aims to help developing countries combat fisheries crime.
- Emphasise the importance of the **ocean as a food source** in our national and international work, for example by following up on the Global Action Network on Sustainable Food from the Oceans and Inland waters for Food Security and Nutrition in connection with the UN Decade of Action on Nutrition (2016–2025). This includes supporting measures and initiatives for better utilisation of resources and for reducing food waste, as well as continuing to develop good monitoring systems for documenting healthy and safe seafood.



Further information

The Government's pages for ocean-related matters

<https://www.regjeringen.no/en/topics/havet/id2603523/>

The Ocean Panel for a sustainable ocean economy

<http://oceanpanel.org>

Barentswatch

collects, develops and shares information on Norwegian coastal and ocean areas.

<https://www.barentswatch.no/en/>

Integrated Marine Management Plans

compiles information on the management plans for the Norwegian ocean areas.

<https://tema.miljodirektoratet.no/no/Havforum/Forside/English/>

MAREANO

surveys depth, seabed conditions, types of nature and pollution in the Norwegian ocean areas.

<http://www.mareano.no/en>

Norwegian Petroleum

facts site on oil and gas.

<https://www.norskpetroleum.no/en/>

Innovation Norway

is to contribute to innovation, the promotion of the Norwegian business community and Norway as a tourist destination.

<https://www.innovasjon Norge.no/en/start-page/>

Norwegian Centres of Expertise

are part of the Norwegian Innovation Clusters programme.

<http://www.nceclusters.no/about-nce/>

The Research Council of Norway

invests in research and innovation based on knowledge for a sustainable future.

<https://www.forskningsradet.no/en/>

Enova

works for Norway's transition to a low-emission society.

<https://www.enova.no/about-enova/>

Siva

is the government policy instrument for facilitating ownership and development of enterprises and business and knowledge communities throughout the country.

<https://siva.no/?lang=en>

Norwegian Seafood Council

is responsible for marketing initiatives for fish and fish products abroad and at home

<https://en.seafood.no>

Norwegian Maritime Authority

is the regulatory authority for Norwegian registered vessels, and for foreign vessels entering Norwegian ports.

<https://www.sdir.no/en/>

Directorate of Fisheries

is the advisory and executive body of the fisheries and aquaculture administration.

<https://www.fiskeridir.no/English>

Norwegian Petroleum Directorate

is the advisory and executive body of the petroleum administration.

<https://www.npd.no/en/>

The Norwegian Coastal Administration

is the advisory and executive body of the port and water administration.

<https://www.kystverket.no/en>

Norwegian Environment Agency

is an administrative body responsible for reducing the emission of greenhouse gases, managing Norwegian nature, and preventing pollution.

<https://tema.miljodirektoratet.no/en/>

Norwegian Energy Partners

Promotes the business interests of Norwegian energy companies in international markets.

<https://www.norwep.com>

Petroleum Safety Authority Norway

is the supervisory body for safety, emergency preparedness, and working environment in the petroleum industry.

https://www.ptil.no/en/?lang=no_NO

Norwegian Food Safety Authority

The Government supervisory agency for plants, fish, animals, and foodstuffs.

<https://www.mattilsynet.no/language/english/>

The Norwegian Veterinary Institute

is the leading professional community in biosafety for fish and land animals.

<https://www.vetinst.no/en>

Institute of Marine Research

is one of the largest marine research institutes in Europe.

<https://www.hi.no/en>

Norwegian Polar Institute's

activities are focused on the environmental management needs in the polar regions.

<https://www.npolar.no/en/>

Nofima

research and development for the aquaculture, fisheries, and food industries.

<https://nofima.no/en/>

Norwegian Seafood Research Fund

research funding for the fisheries and aquaculture industries.

<https://www.fhf.no/fhf/about-fhf-english/>

Centre for the Ocean and the Arctic

is to strengthen the knowledge of the blue economy in the North.

<https://oceanarctic.org>

Norwegian Centre for Oil Spill Preparedness and Marine Environment

is a nationally and internationally leading centre of expertise for the oil spill preparedness efforts and against marine plastic littering.

<https://www.marintmiljo.no/frontpage-norwegian-centre-for-oil-spill-preparedness-and-marine-environment/>

The Norwegian Export Credit Guarantee Agency

is a government financial institution working to secure financing and export contracts for Norwegian businesses in all industries.

<https://www.giek.no/frontpage/>

The Fram Centre

igh North research centre for climate and the environment.

<https://www.framcentre.com>

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