New Building Blocks in the North

The next step in the Government's High North Strategy

NORWEGIAN MINISTRY
OF FOREIGN AFFAIRS

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FOREWORD

NORWAY IN THE NORTH – THE WAY FORWARD

The High North is Norway's most important strategic priority area. My Government made this clear in its inaugural address, and we followed up by presenting our High North Strategy on 1 December 2006. The overall aim is to enhance knowledge in and about the north, increase our activity and presence in the area and lay the foundations for sustainable economic and social development in the years to come.

More than two years have now passed since the Government presented its High North Strategy. During this period we have gained further insight into the opportunities and challenges created by developments in the north, particularly in the fields of climate and energy and in our relations with Russia. The High North Strategy contained 22 specific action points. Most of them have now been carried out. But that does not mean that the strategy will soon be a closed chapter of a book we can lay aside. Quite the contrary. The High North Strategy is a project that is constantly evolving. Achieving lasting results will require focused efforts over several parliamentary periods. We are only just at the beginning.

The need to develop our High North Strategy is greater than ever. This is apparent when we look at how the world around us is changing. During the past few months both the EU and the US have presented their own strategies for the High North. They plan to step up their engagement in this area, and so do Russia and many other key actors. International interest in the Arctic and the world's northernmost regions will continue to grow. It is our intention to stay ahead of these developments.

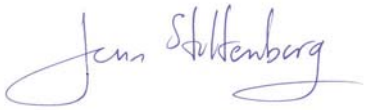
Implementing the High North Strategy has given us opportunities to listen and learn from many sources in the north and in the rest of Norway, as well as in our contact with other countries. We have gained experience and have received valuable input. This has provided a basis for setting the course ahead.

Part I of this publication – New Building Blocks in the North – presents the Government's platform for its further efforts in this field.

Part II of the publication provides the backdrop to Part I. It contains examples that illustrate the diversity of the challenges and opportunities we are facing in our High North policy, and gives an overview of the issues we have been focusing on.

The Government intends to continue and intensify its High North efforts. These efforts build on constructive partnerships – between the public and private sector, between central and local authorities, and between Norwegian and foreign actors. There are no clear-cut answers. We want as many as possible to be involved in determining the way ahead, and encourage frank and broad-based debate.

Prime Minister Jens Stoltenberg
Oslo/Tromsø, 12 March 2009.



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NEW BUILDING BLOCKS IN THE NORTH THE NEXT STEP IN THE GOVERNMENT'S HIGH NORTH STRATEGY

Introduction

In its policy platform, the Government stated that it considers the High North to be Norway's most important strategic priority area in the years ahead. In December 2006 the Government presented its High North Strategy as an element in its efforts to translate this part of the policy platform into practical policy. Seven main political priorities were formulated in the strategy:

1. We will exercise our authority in the High North in a credible, consistent and predictable way.
2. We will be at the forefront of international efforts to develop knowledge in and about the High North.
3. We intend to be the best steward of the environment and natural resources in the High North.
4. We will provide a suitable framework for further development of petroleum activities in the Barents Sea, and will seek to ensure that these activities boost competence in Norway in general and in North Norway in particular, and foster local and regional business development.
5. We intend the High North policy to play a role in safeguarding the livelihoods, traditions and cultures of indigenous peoples in the High North.
6. We will further develop people-to-people cooperation in the High North.
7. We will strengthen our cooperation with Russia.

In addition, the Government formulated 22 specific action points. Most of these have now been carried out or started. This work has been integrated into the normal procedures in several ministries.

In this document, the Government is presenting a series of strategic priority areas that will serve as new building blocks in the Government's High North policy. Continuing to pursue this policy will put us in a better position to meet the great challenges related to climate and environmental change, and to seize the opportunities in the north.

The Government's further High North efforts are intended to enhance Norway's ability to exercise sovereignty and promote sustainable management of renewable and non-renewable resources. Economic activity based on the region's own resources will be essential in securing welfare and employment in the region. Business and industry, research and other activity in the north will help to secure a Norwegian presence by maintaining settlement patterns, and will thereby also strengthen Norway's exercise of sovereignty in the region. The High North Strategy is furthermore intended to ensure that the area's strategic location is exploited to the benefit of society as a whole, and that Northern Norway's comparative advantages are used to promote economic growth and value creation in Northern Norway and the rest of the country.

The Government's High North policy is additional to its general rural and regional policy and to various sector policies. All of this will help to maintain settlement patterns in the north and promote development that is conducive to cooperation with other countries and respects the rights of indigenous peoples.

The Government therefore intends to:

1. Develop knowledge about climate and the environment in the High North.
2. Improve monitoring, emergency response and maritime safety systems in northern waters.
3. Promote sustainable development of offshore petroleum and renewable marine resources.
4. Promote onshore business development.
5. Further develop the infrastructure in the north.
6. Continue to exercise sovereignty firmly and strengthen cross-border cooperation in the north.
7. Safeguard the culture and livelihoods of indigenous peoples.

These specific action points have a time horizon of 10–15 years. However, they need to be seen in a dynamic perspective and not as a final plan of action for the next 10–15 years.

New challenges will require new knowledge. In turn, new knowledge provides opportunities for economic and social development. New problems are bound to arise relating to the environment and climate change. New oil and gas discoveries could offer new opportunities and create new needs for infrastructure development, transport and business development, both onshore and offshore. In the next 10–15 years we will constantly be faced with new challenges and opportunities. The action points presented here will set a new course and serve as the building blocks of a dynamic policy for the High North.

Priorities between the various action points and the order and speed of their implementation will be considered on an ongoing basis, and will be described in the Government's annual budget proposal to the Storting (the Norwegian Parliament). Efforts in this area will have to be adapted to activity in the Government's other priority areas, and to the economic situation in each budget year.

The foreign and domestic policy dimensions of the High North Strategy are closely linked. The projects described in this document are intended to promote a stronger presence and increased activity and development in the three northernmost counties and in Svalbard, which will in turn enhance Norway's credibility and influence when High North issues are discussed internationally.

In the Government's strategy, the High North is not precisely defined, nor is it limited to Norwegian territory. Important Norwegian interests are linked to developments in the Arctic and the wider circumpolar area, and internationally the terms "the High North" and "the Arctic" are frequently used interchangeably. Norway's strategic efforts in the north must be seen in a geopolitical context. Norway will continue the active dialogue on High North issues with its neighbours, partners and allies, and will seek to make Norway's High North policy more visible in international and regional cooperation forums. Strengthened international cooperation in the north – both circumpolar cooperation and cooperation with Russia in particular – will in turn be beneficial for development in Northern Norway.

1. DEVELOPING KNOWLEDGE ABOUT CLIMATE AND THE ENVIRONMENT IN THE HIGH NORTH

Increasing international attention is being focused on the High North in response to environmental and climate change, polar ice melting and the challenges posed by these changes. Norway is uniquely positioned to monitor the impacts of anthropogenic environmental and climate change, which is particularly marked in the High North. Arctic climate change is affecting the global climate system and vice versa. Norway has the advantage of direct access to cold, ice-free areas. This means that research communities in our northern areas have a considerable advantage as regards research on climate change in general, and more specifically on the role the Arctic plays in the global climate system. Knowledge is at the core of the Government's High North Strategy. The Government intends to promote knowledge development to enable us to fully seize the opportunities and address the challenges we are facing in the north.

Research infrastructure is a basic requirement for research and knowledge development in the High North. Strategic investments in observation and communication equipment facilitate research of global significance and make Norway attractive as a base for international research activities. Improved research infrastructure can also generate ripple effects in the form of innovation and technological and business development. In turn, technological and business development will strengthen the existing knowledge base and encourage research on climate and the environment in the region.

1.1 Developing a centre for climate and environmental research in Tromsø

The Government is focusing on developing knowledge about climate and the environment that will enable Norway to further improve the management of its sea and land areas in the north and the resources found there. Sound resource management and efforts to protect the environment and address climate change are key elements of the Government's High North Strategy. Environmental and climate change, increasing pressure on natural resources and large-scale new activities could have far-reaching impacts on society and the environment, not least because a large part of the value creation in the north depends on the natural environment and living resources. However, there is great uncertainty about what the impacts are likely to be. More knowledge about climate and the environment is therefore of great strategic value in connection with management, adaptation to climate change and planning in the north.

The Government will facilitate the establishment of a leading international centre for environmental and climate research in the High North by further developing existing knowledge institutions in Tromsø (the Norwegian Polar Institute, the University of Tromsø, the Institute of Marine Research, Akvaplan-niva, the Norwegian Institute for Nature Research, the Norwegian Institute for Air Research, Nofima and the Norwegian Radiation Protection Authority). Making Tromsø a focal point of knowledge and expertise on climate and the environment will strengthen Norway's role and influence in international cooperation in the north, and will therefore help to ensure

that Norway's interests are safeguarded in the best possible way. It is particularly important to build expertise on the growing international problem of climate change and ocean acidification. This is a field where Norway, with its large sea areas, has an interest in staying at the forefront of research. Research in this field must be seen in connection with other processes, including the implementation of the plan that has been adopted for building up climate-related research and the Klima 21 forum for climate research. Arctic climate processes play an important role in the global climate system as well. A better understanding of these processes is crucial for predicting future climate change. Knowledge building in this field will therefore be an important contribution to international climate-related efforts. Tromsø is the centre of a region that offers an abundance of natural assets and living resources, a number of important knowledge institutions that can be further developed, and geographical proximity to key areas as regards climate, resource exploitation and changing patterns of activity.

The centre will be organised as a network with a joint secretariat, established in conjunction with the Polar Environmental Centre's secretariat. The secretariat will be responsible for coordinating cooperation between the participating institutions both nationally and internationally. Developing the knowledge institutions in Tromsø into a leading international centre for environmental and climate research in the High North will require closer coordination between the participating organisations and other R&D centres in Northern Norway.

An ice-class research vessel based in Tromsø will be an important part of the infrastructure for the environmental and climate research centre (see separate discussion in section 1.2.3).

The Government's goal is for the following elements to be included in the development of the environment and climate research centre in Northern Norway:

- *The establishment of the Centre for Ice, Climate & Ecosystems (ICE):*
  Establish the centre in 2009. The main purpose will be to strengthen research on and monitoring of climate and ice conditions at the Norwegian Polar Institute in cooperation with key institutions in Norway, particularly the University of Tromsø, the University Centre in Svalbard and the Bjerknes Centre for Climate Research. The goal is for the centre to become a world leader in its field.

- *Generating knowledge of the environment and living resources in the marine environment in the north:*
  Sea: Strengthen research and resource management expertise and survey and monitoring programmes related to the implementation of the integrated management plan for the Barents Sea–Lofoten area. Field stations that monitor coastal and fjord ecosystems in Finnmark county will be drawn into these efforts. Further development of the Norwegian Polar Institute and the Institute of Marine Research will be key elements in this connection.

Svalbard and the Arctic: Strengthen management-oriented expertise adapted to needs in Svalbard, for example necessary expertise on the impacts of climate change and possible changes in business activity and traffic, including opportunities for the development of new business activities. Further development of the Norwegian Polar Institute and the Institute of Marine Research will be key elements in this connection.
Terrestrial environment: Strengthen expertise on the impacts of climate change on the natural environment and the traditional livelihoods of indigenous peoples and on adaptation strategies. This competence building should mainly take place at the Norwegian Polar Institute, the University of Tromsø, the Sami University College and other relevant institutions in Northern Norway.

- *New research programme on climate change and ocean acidification:*
  Major changes in the marine ecosystems in the north are expected as a result of ocean acidification. Norway is responsible for large and economically important sea areas in the north and should therefore remain at the forefront of developments on understanding and predicting the effects of the chemical changes that take place as CO2 levels in the oceans rise and they become more acidic. As part of the plan for building up climate-related research, a new research programme on ocean acidification has been proposed under the Research Council of Norway.

- *Knowledge building on the impacts of and adaptation to climate change for business and industry, based on cross-sectoral cooperation:*
  Climate change and ocean acidification will lead to changes in living conditions for marine species. Some species may change their migration patterns and feeding and spawning grounds, while others may spread to new areas. There may be corresponding changes in the conditions for aquaculture. Building up an understanding of the links between climate change, ocean acidification, marine ecosystems and the conditions for commercial/business activities based on natural resources is essential, particularly in the High North, where the fisheries are a vital basis for settlement patterns.

- *Knowledge building on the impacts of the growing volume of maritime transport in the Arctic:*
  The ice conditions in the Arctic are changing rapidly, and this is opening up new areas to shipping. Research on the effects of local pollution and of the physical breaking-up of the ice is therefore important.

- *Further development of expertise on coastal and fjord ecology:*
  The intention is to develop knowledge about the changes that are occurring in coastal and fjord ecosystems. These efforts are being led by the Institute of Marine Research. The aim is to understand the causal factors behind changes in fjord ecosystems, with a particular

focus on Porsangerfjorden. The programme will play an important role in generating knowledge to be used in the management of our coastal waters.

- *The establishment of an environmental specimen bank of ecological toxins:* Possible locations for the environmental specimen bank are being considered by the Norwegian Pollution Control Authority. One alternative is co-location with the marine biobank Marbank, which is already established in Tromsø.

1.2 Establishing new technical research infrastructure

1.2.1 Establishing an Arctic earth observing system in Svalbard

The establishment of the Svalbard Integrated Arctic Earth Observing System (SIOS) is a major pan-European infrastructure project in Svalbard. It will be an important element in the Government's efforts to achieve the objectives of its High North policy. The project will increase the scientific value of monitoring and research activities, and reduce the risk of overlap and unnecessary environmental pressure in Svalbard. It will also play an important role in promoting international research cooperation and coordination in Svalbard. This centre of expertise will provide a basis for research cooperation, teaching and knowledge transfer, and will create a joint Arctic platform for climate-related research in Europe.

The Government will give high priority to the SIOS. Establishing the system will involve upgrading existing and providing new infrastructure, particularly at the Svalbard Science Centre in Longyearbyen, which is responsible for collecting data from land, sea, ice and air/atmosphere, and establishing a knowledge centre to make the data accessible. The project will promote international cooperation and coordination, and increase the value of research activities.

1.2.2 Building a next-generation radar system in the High North (EISCAT 3-D)

EISCAT (European Incoherent Scatter) installations are large radar systems located in northern Scandinavia. They are used for geophysical research by researchers from many countries, and are useful for a number of purposes related to space research, climate research and monitoring of "space weather". There is now an urgent need to upgrade the radars on the mainland, both because they are beginning to be outdated and because the radio frequency bands they operate on are to be taken over by mobile telephony and digital radio broadcasting. EISCAT 3-D is a project to set up a new EISCAT radar system in northern Scandinavia. The project proposal includes at least one new active phased-array radar illuminator (transmitter/receiver) and two to four new passive receiver arrays. Possible locations for the transmitter are Ramfjordmoen near Tromsø, where the existing transmitter is located, or a location close to Andøya Rocket Range. Receivers will be built in northern Sweden and northern Finland, and possibly one in Sweden and one at Masi in Finnmark county.

The new EISCAT 3-D system will play a key role in climate change research. The radars will provide data that are important for the atmosphere-based platform that forms part of

the Svalbard Integrated Arctic Earth Observing System. In addition to facilitating scientific advances, EISCAT 3-D will promote technological development and could potentially lead to new business innovation.

1.2.3 A new ice-class research vessel

Increased value creation in polar areas and accelerating climate change have made it essential to develop more and better knowledge of these areas. Such knowledge is necessary as a basis for making decisions related to resource management, environmental policy and value creation. The Government intends to facilitate the development of knowledge about Arctic and Antarctic sea areas and to step up Norway's year-round presence in the Arctic. An active presence in these areas is of great importance in giving Norway legitimacy, credibility and influence as a steward of the marine resources and marine environment of the northern seas, and in enabling Norway to contribute to international cooperation on the management of the Southern Ocean.

The Arctic and Antarctic play a key role in the global climate system. Climate change is now high on the political agenda, and ice melting is one of the keys to understanding future climate trends. An ice-class research vessel would enable Norway to make important scientific contributions to international climate cooperation by enhancing the country's research efforts in Arctic and Antarctic sea areas.

There is a need to strengthen marine research and monitoring of the northern sea areas, partly to monitor changes in the biological resources directly associated with the sea ice, such as polar bears, Arctic cod, zooplankton and algae. This means that it must be possible to take samples in the ice, under the ice and below the water surface, as well as from animals and birds on the surface or in the air.

Because climate change is affecting sea temperatures and the marine environment, marine research and monitoring of the northern sea areas should be stepped up, for example to monitor changes in the populations and migration patterns of marine species. Data collected by a research vessel would be important in providing the best possible knowledge base for determining quotas and in enabling us to meet our international obligations as regards the management of joint stocks. A new research vessel would also play a key role in improving maritime monitoring, which will become more important as a result of increasing petroleum activity in the north.

The existing Norwegian research vessels are to some extent outdated, and only two of them are ice-class vessels. The marine research community in Norway has recommended that the top priority should be to procure a new ice-class marine research vessel.

A new ice-class research vessel would constitute one element of a research platform for fields such as the environment, climate, natural resources, polar research, fisheries-related and marine research, geological and petroleum-related research, and other areas. The knowledge obtained would improve the basis for making decisions related to natural resource management, and climate and environmental policy in the polar seas.

The Government aims to acquire a new vessel of this kind, provided that our quality requirements are met, during the next few years. This vessel would operate from Tromsø. The final decision on procurement and specifications will be made following the completion of a quality assurance process.

1.3 Mapping the diversity of the seabed

The Government will facilitate the development of management-oriented knowledge. MAREANO is a programme for systematic surveys and basic research on physical, biological and chemical conditions on the seabed in all Norwegian coastal and marine areas. All data are collected in a single database. The MAREANO programme is a pioneer in the field of mapping. The knowledge generated by the programme will be important for finding a good balance between use and conservation and between the interests of various users. The programme also offers a unique platform for exploring opportunities for marine bioprospecting.

The Government will continue the MAREANO programme. The first phase of MAREANO has been designed to be used in the 2010 revision of the integrated management plan for the Barents Sea–Lofoten area. MAREANO is intended to cover the southern part of the Barents Sea including the Lofoten and Vesterålen islands by the end of 2010. Priority areas are Eggakanten, Tromsøflaket, Troms II and Nordland VII. At the current level of funding, the mapping of the areas that are indicated in the integrated management plan will be concluded in 2014 at the earliest.

2. IMPROVING MONITORING, EMERGENCY RESPONSE AND MARITIME SAFETY SYSTEMS IN NORTHERN WATERS

Melting of the Arctic sea ice during the summer will make new areas accessible for human activity. The volume of maritime traffic in the High North will increase with the opening of shipping routes via Arctic waters and the expansion of oil and gas extraction in Norwegian and Russian waters. A higher volume of traffic will pose considerable challenges to Norway as a coastal state with a special responsibility for management in the High North. This will require improved monitoring, emergency response and maritime safety systems in our northern sea areas. It will also be important to maintain our high health, safety and environmental standards as petroleum activity in the northern sea areas increases.

With increasing activity in Arctic and other northern waters, existing emergency response systems should be reviewed. Norway will seek to promote regional cooperation, for example within the framework of the Arctic Council, on search and rescue cooperation in these waters.

2.1 Establishing an integrated monitoring and notification system

Access to integrated information is necessary for sound management of the northern sea areas and the Arctic. Integrated real time information is also essential for dealing with environmental and other disasters in these areas.

Various systems already exist for monitoring maritime traffic, the fishing fleet, the marine environment, meteorological conditions and so on. However, there is no overall coordination

of these systems. The Ministry of Fisheries and Coastal Affairs, in cooperation with the Ministry of Foreign Affairs, has launched efforts to develop an integrated monitoring and notification system. In principle, this should build further on the existing systems. An integrated national web-based system would receive data from the various sectoral systems, for example on the environment, marine resources, oil and gas activities, and fisheries, and offer users a complete overview of relevant information about the northern sea areas. The system would provide public bodies with a better and more complete overview for management purposes, and private sector users with more readily accessible and more complete information. The establishment of such a system will be important at national level and will also have a clear foreign policy dimension. The EU and other countries are also considering similar systems, but the Norwegian system will be a pioneering project. The Government will continue the development of a more integrated monitoring and notification system.

2.2 Improving pollution and emergency response systems

2.2.1 Further developing the Norwegian Coastal Administration's maritime safety expertise

The growing volume of maritime transport in the High North means that maritime safety and oil spill response must be given high priority. It is necessary to focus both on preventive measures to reduce the probability of accidents and on measures to reduce their impact. This will make it possible for maritime transport to coexist satisfactorily with other industries such as fisheries and tourism, and play a role in their further development. Weather conditions in the High North are difficult, with low temperatures, ice, and darkness during the winter. Norway has taken on a special responsibility in this field in connection with the development of the integrated management plan for the Barents Sea–Lofoten area. This needs to be followed up and further developed, both nationally and in an international context.

Norway is today a world leader with expertise on oil spill response equipment and its industrial development. The Government wants to further develop the Coastal Administration's expertise in this area with a view to strengthening maritime safety, maritime monitoring and expertise on oil spill response in icy conditions. The Coastal Administration is responsible for addressing and highlighting the new challenges and tasks in the north, and for further developing its cutting-edge expertise in emergency response and pollution prevention in Arctic areas. One of its key tasks will be to follow up international efforts and take part in practical cooperation with Russia and other countries in the field of oil spill preparedness and monitoring of Arctic areas. The Coastal Administration should also be given a particular responsibility for monitoring risk trends in this area. Cooperation with other entities is also important. Furthermore, the Coastal Administration should assess development needs and coordinate new research in this field in cooperation with other actors such as research institutions, oil companies, other industries and international partners. The expertise the Coastal Administration has established in Finnmark county

should be further developed. As regards knowledge building in cooperation with Russia, it is appropriate that the Vessel Traffic Service Centre in Vardø is involved.

2.2.2 Improving maritime safety

Climate change may result in a growing volume of maritime transport and opportunities for using new transport corridors. Increasing oil and gas extraction will also mean more maritime traffic in the High North. This will have implications for infrastructure, oil spill response and maritime safety, and cooperation with other countries.

As a shipping nation, Norway must be able to deal with any adverse impacts of maritime transport along its coast. If Norway proves not to have the capacity to deal with accidents in Arctic waters, this would not only lead to pollution damage, but would also tarnish Norway's reputation and jeopardise business development in the north. As a coastal state, Norway must therefore focus both on improving maritime safety and on reducing the impacts of any accidents through an adequate oil spill response system. The goal is to scale up response capacity in step with the expansion of petroleum and other activities.

The Government attaches importance to maritime monitoring and satisfactory information about maritime traffic and other activities in our neighbouring areas. This is important both to enable Norway to protect its strategic interests and to ensure a high level of maritime safety, adequate response systems and sound management. Norway's recognition of the need for maritime monitoring and adequate information is reflected in the project to establish an integrated monitoring and notification system, as discussed in section 2.1 above. The Vessel Traffic Service Centre in Vardø, which was established in 2007, is one concrete element of these efforts. The Vessel Traffic Service uses automatic identification system (AIS) to monitor shipping and ensure compliance with the mandatory routeing and traffic separation scheme between Vardø and Røst. In this connection it is also important to further develop Norway's close cooperation with Russia on maritime safety and oil spill response. One element here is the ongoing development of a joint notification and information system for shipping. Cooperation is also underway to improve electronic navigation signal coverage in the Barents Sea by linking the Norwegian Loran-C system and the equivalent Russian Chaika system. Norway is also cooperating with Iceland and a number of other countries around the North Sea on establishing a regional centre to coordinate information on maritime traffic in the northern part of the North Atlantic and in the Barents Sea. Canada could also become an important partner here.

In recent years, maritime traffic off Svalbard, particularly cruise traffic, has been increasing. In contrast to the situation along the Norwegian mainland coast, there is no AIS coverage in the waters off Svalbard. The Government is considering establishing AIS coverage around Svalbard to enable the authorities to monitor the growing maritime traffic and make it possible to take action against ships that pose a threat to safety and the environment. In line with the Government's High North Strategy, the Ministry of Fisheries and Coastal Affairs has also made the Harbour Act applicable to Svalbard. Given Svalbard's geographical loca-

tion and the increase in maritime traffic, the Government sees a need for further measures to ensure a satisfactory level of maritime safety in the area.

The current focus on building up expertise and education in maritime disciplines and air safety at the University of Trondheim and several university colleges is important in this connection.

A key objective of the Government's maritime strategy is to facilitate environmentally sound growth in the maritime sector. The Research Council of Norway and Innovation Norway will be given funds to promote more environmentally sound maritime transport. In its dialogue with the sector, the Government has designated key areas for maritime research and development. Priority will be given to reducing the environmental impact of maritime operations under difficult conditions, for example in the High North, and to advanced logistics and transport. As a result of the geographical location of Norway's sea areas and the prevailing weather conditions, the Norwegian maritime sector has developed particular expertise and comparative advantages as regards challenging maritime operations in a cold climate. Norway intends to consolidate its position as an innovative maritime nation. Support has therefore been given for a pilot project in connection with the establishment of a next generation research laboratory centre.

Norway plays an active part in the International Maritime Organization (IMO) which establishes safety and environmental standards for maritime transport. Norway has been calling for the IMO to put the Arctic Ocean and related issues and the development of legislation higher on its agenda. The IMO has started revision of the Polar Code, a set of guidelines for ships operating in polar waters. The Government will advocate making the Polar Code binding.

2.2.3 Strengthening the oil spill response

Since 2003, a government emergency tugboat service has been operative from Finnmark county to the Lofoten Islands. There are plans to strengthen this service from 2010, by increasing the number of all-year tugboats to three. Funding will be provided by the Ministry of Fisheries and Coastal Affairs. Weather conditions in the north are harsh, and change rapidly. The established traffic lanes are located far enough from the coast to allow for sufficient response time for tugboats and other assistance, but close enough for ships that run into problems to reach port. The Government is drawing up an updated list of suitable ports of refuge in cooperation with relevant parties, including the municipalities.

Increasing petroleum activity in the north and the growing number of oil shipments from northwestern Russia past the Norwegian coast mean that there will be a continuous need for development, coordination and innovation. Existing oil spill response equipment has clear limitations in low temperatures and ice-infested waters. It is therefore necessary to develop methods and equipment for oil spill clean-up operations that are suited to such conditions. According to an Arctic Council report, oil spills are the greatest threat to the marine environment in Arctic areas. Cooperation on this issue, both as

regards research and response measures, are proposed as an important priority area. The Government intends to strengthen the oil spill response in the north.

An overall analysis of future oil spill response requirements is needed, and should consider both technological development and capacity. To deal with the challenges ahead, it will be important to have a good overview of existing oil spill response systems as a basis for assessing what needs to be done. The goal must be to strengthen the existing system, both in coastal waters and in sea areas further north. An overall approach including both public and private response systems is needed. The Ministry of Fisheries and Coastal Affairs has initiated a process that will form the basis for work in this field. In cooperation with other ministries and agencies, it will make an overview of knowledge gaps and ongoing and new research projects and studies in the fields of maritime safety and emergency response, focusing particularly on oil-in-ice problems. Several private initiatives in Norway may also provide more knowledge about dealing with oil spills in Arctic waters. In 2006, SINTEF, with support from the petroleum industry, launched an R&D programme focused on oil spills in ice-infested waters. The Ministry of Fisheries and Coastal Affairs will evaluate the results of this and other relevant projects as part of its follow-up of the Government's responsibility for the response system for acute pollution. The Ministry will also determine the need for further research and development in this field and consider providing government support for R&D projects to build competence and develop equipment for use in the oil spill response in the High North. In addition to private R&D efforts, there may be a need for government support for the development of equipment and expertise in the field of oil spill response in Arctic areas. On the basis of research in this field, the Government will determine capacity requirements for the oil spill response system in the High North.

The Government is also in the process of developing safety and emergency response requirements for the petroleum industry in the High North. The Ministry of Fisheries and Coastal Affairs, the Ministry of the Environment and the Ministry of Petroleum and Energy are all key actors in this work, and ensuring close coordination between these ministries and private actors is an important concern. In the Government's view, a broad-based emergency response forum is needed to ensure smooth cooperation between all the actors involved, both public and private. The Ministry of Fisheries and Coastal Affairs will take an initiative for the establishment of such a forum, where input from all parties should be considered and coordinated before recommendations are sent to the Government.

3. PROMOTING SUSTAINABLE USE OF OFFSHORE PETROLEUM AND RENEWABLE MARINE RESOURCES

Since time immemorial the fisheries have been of fundamental importance to the economy and settlement of the northernmost parts of Norway. They have provided a vital basis for the development of local communities. In the future, too, marine resources will continue to be important for business development and employment in the north. Long-term, sustainable resource management will help to secure further development and prosperity for coming generations. At the same time it is necessary to facilitate the use of new resources and development of new products by focusing on research and development. This is important in order to ensure that Northern Norway develops a more differentiated and robust business sector. Farming of new marine species, marine bioprospecting and petroleum activity in the north may play a major role in the further development of Northern Norway.

Developing Northern Norway's own resources will provide an important basis for value creation in the High North. Experience has shown that the petroleum industry generates substantial economic growth at national, regional and local level. There is now considerable interest and optimism in our northern counties related to the development of the High North as a petroleum province.

Petroleum extraction is dependent on exploration and the discovery of deposits. The ripple effects of the petroleum industry on the rest of the economy is contingent on access to new areas for oil and gas extraction, and vice versa. It is therefore important that Norwegian policy is designed to make the High North attractive to oil companies so that they give it priority in their portfolios. At the same time the Government is seeking to identify modes of field development solutions that maximise local and regional ripple effects while maintaining corporate and macroeconomic profitability. Several other countries that are engaged in petroleum activities in the High North are focusing on technological development and research related to petroleum activities in the Arctic. The Norwegian strategic task force for oil and gas research, OG21, has developed a technology strategy for the Arctic. Norway is engaged in dialogue on this issue with other countries.

Maritime transport changes in response to general economic development in Norway and the rest of the world. For example, an expansion of petroleum activities in northwestern Russia, the Norwegian Sea and the Barents Sea will lead to a growth in maritime transport. As a result of the geographical location of Norway's sea areas and the prevailing weather conditions, the Norwegian maritime sector has developed particular expertise and comparative advantages as regards challenging maritime operations in cold climates. The petroleum industry is a source of innovation and motivation for onshore maritime industries. Shipyards are building both vessels and installations for the offshore sector. This work also involves subcontractors, service providers and other activities connected with shipbuilding.

Presence and activity have an impact on resource management, the environment and

foreign relations. The Government uses the integrated management plan for the Barents Sea–Lofoten area to facilitate value creation based on the sustainable use of resources and coexistence between industries such as the fisheries, maritime transport and the petroleum sector. The Government's aim is to provide clear and forward-looking framework conditions for existing and future activities in the High North.

3.1 Developing marine industries

3.1.1 A national initiative for cod farming

Capture fisheries have reached a ceiling, and we will not see any significant increase in global fish catches in the years ahead. An increase in the supply of seafood must therefore come from an increase in aquaculture production. Norway has strong competitive advantages as regards cod farming due to its long coastline, its expertise on marine species and its experience of salmon and trout farming. Conditions in Northern Norway are particularly good for cod farming. Farmed cod thrive better in the cold water in the north than they do further south, and there are larger areas available for cod farming along the coast in the north. In recent years, the relevant research infrastructure in Tromsø has been upgraded with the addition of the Norwegian Cod Breeding Centre, the Tromsø Aquaculture Research Station and the Fish Health Laboratory at Kårvika. These facilities are all wholly or partially owned by the national industry-oriented research group Nofima, which has its headquarters in Tromsø. Its subsidiary Nofima Marin, which is Europe's largest unit for applied marine research, is also based in Tromsø. All in all, Tromsø now has world-class infrastructure with cutting-edge expertise in the field of applied research on cod. In addition, the Institute of Marine Research has a branch in Tromsø. Much of the required industry- and management-oriented research can therefore be carried out in the north.

A further development of cod farming will help to ensure a stable and predictable supply of fish to the onshore industry in the north outside the seasonal wild fisheries and thereby also help to ensure employment in the region. The Government will therefore facilitate a national drive to develop cod farming.

Developing farming of a new species until it is fully commercialised is knowledge-intensive and costly. Since 2001 the authorities have provided funding through Innovation Norway and the Research Council of Norway in a targeted effort. In recent years Investinor and the marine value creation programme have also been set up as key tools in the effort to develop cod farming.

There are, however, still many unresolved questions connected with cod farming. This applies for example to interactions between farmed and wild fish, diseases and welfare, breeding, feeding technology and development of feed, and market-related issues. More knowledge is also needed about the consequences for the economy of the coastal Sami. More research is needed in all of these fields. So is research aimed at developing a sustainable management regime. There are also gaps in our knowledge of the possible impacts of cod farming on ecosystems and

wild stocks. Such knowledge is also important for environmental impact assessments, which are required before a decision to expand cod farming. Impact assessments must include the impacts of escapes and spawning in net pens on wild stocks, the spread of diseases and more assessment of more "ordinary" factors related to spatial planning/localisation, parasite issues and discharges of nutrients. There is also a need for industry-oriented research to improve aquaculture operations, including new technical solutions, better feed, more effective responses to diseases, etc.

3.1.2 A national initiative for marine bioprospecting

Marine plants, animals and bacteria are genetically adapted to a life in the ocean in fierce competition with other organisms, often at temperatures close to freezing point. They contain molecules with unique properties that may be of use to human beings, for example in new medicines and in connection with oil production. Marine bioprospecting means searching for and carrying out research on such substances. There is considerable potential for the commercialisation of research findings in this field. Marine bioprospecting could become an important area within biotechnology, and may have commercial potential in a number of other areas. Applications might include medicines, flavours and nutrients in food and feed, and industrial processes for the production of textiles, cellulose and biomass/renewable energy, as well as applications in the oil industry.

Norway's prospects of success in marine bioprospecting are based on two key factors. Firstly, the end products developed through research on marine organisms can be used in many fields, and demand for such products will generate large revenues. Secondly, Norway has marine resources with unique properties, cutting-edge expertise and established infrastructure on which we can build further. This puts us in a good position to develop the whole value chain from prospecting and research to business development via innovation and commercialisation. In the north we have the combination of unique Arctic resources, marine industries with long traditions and well-established research communities. Important infrastructure is already in place, for example the Marbank marine biobank, the MarBio laboratory and the MabCent centre for research-based innovation. The MABIT programme, an independent industry-oriented R&D programme, plays an important role. We are now also seeing the emergence of a new generation of biotechnology companies in the north.

Marine bioprospecting is an element in the Government's innovation policy. The idea behind this is to further develop our key industries and make use of the conjunction of advantages, both those we have acquired by building knowledge and natural advantages. As the world economy becomes increasingly globalised, international competition is hardening. We must be capable of renewing ourselves and ensuring our competitiveness if we are to maintain our high standard of living. A lot of challenges need to be overcome in order to realise untapped potential. The public sector has an important role to play in the initial phase before a new industry has matured.

The Government intends to launch a national initiative for marine bioprospecting. The Government's committee of experts on the High North has played an important advisory role in the process of identifying the best solutions for promoting marine bioprospecting. The Ministry of Trade and Industry and the Ministry of Fisheries and Coastal Affairs, together with the Ministry of Education and Research and the Ministry of Foreign Affairs, have been tasked with developing the Government's national marine biotechnology strategy. This will be based on proposals from the committee of experts, the Research Council of Norway, Innovation Norway and the Industrial Development Corporation of Norway, and is to focus particularly on marine bioprospecting.

The strategy will discuss the best ways of making use of the opportunities that are emerging in this field. A key task will be to look into ways of improving interaction between research and the business sector at the regional, national and international level. This will include considering how to facilitate commercialisation and how the process of developing Marbank into a national marine biobank can be used to provide research communities and other users with effective access to marine biological material. It will be necessary to develop guidelines for use of the biobank's material and resolve biosecurity issues related to products resulting from marine bioprospecting.

3.1.3 Exploring the potential of bioenergy based on marine algae

The cultivation of marine algae in coastal areas in the north could provide a future source of bioenergy. Although seaweed farming offers a large energy potential in theory, it is still very uncertain whether farmed algae will be competitive as a raw material for energy production. Periods of high oil prices and more stringent regulation of greenhouse gas emissions have sparked renewed interest in energy production based on algae. Some research on the cultivation of marine algae and their use for bioenergy is being conducted under programmes run by the Research Council of Norway. The Government intends to commission a study of the potential of bioenergy based on marine algae, with a particular focus on how a future initiative in this field could provide a basis for business and research activities in the north. Any future initiative in this field must be based on close coordination between national and international research communities, energy companies and the authorities.

3.1.4 Combating illegal, unreported and unregulated (IUU) fishing

The Government intends to continue its efforts to combat IUU fishing to ensure the sustainable management of our fisheries resources. A satisfactory control regime both at sea and when catches are landed is an essential basis for sustainable use of the fisheries resources in the north. The Coast Guard plays a key role in monitoring fisheries activities at sea. The Directorate of Fisheries and the sales organisations carry out controls of landings and compliance with quotas at national level. Combating IUU fishing in the Barents Sea is a long-term process that requires further development of the policy and institutional cooperation forums Norway has helped to develop in recent years. The Russian and

Norwegian fisheries authorities have made it clear they would like to strengthen the institutions for bilateral management cooperation that have been developed over many years. Steps to improve coordination between the Norwegian and Russian law enforcement authorities must continue. The Government will give priority to controlling resource utilisation to combat IUU activities, as well as to confidence building measures and information work.

3.2 Developing maritime business activities

3.2.1 Developing Norwegian ports and supply industry in connection with a possible opening of new sea routes in the north

Ice melt in the Arctic is likely to result in a larger volume of maritime transport and the opening of new traffic corridors. For example, it may become possible to use new transport corridors from the US west coast and north-eastern Asia through the Arctic Ocean as alternatives to the existing corridors through the Panama and Suez Canals. Expansion of oil and gas extraction in the north will also lead to more maritime transport along the coast of Norway.

The increase in shipping could lead to positive ripple effects as there will be an increasing need for maritime service suppliers in Norway. The most important maritime services are related to ship financing, marine insurance, maritime law, classification, port services and brokerage. Many Norwegian maritime services suppliers are today among the largest and most important in the world in a number of fields. It is particularly important that Norwegian ports in the north position themselves and engage in relevant cooperation to attract activity. The Norwegian authorities will monitor developments and, if necessary, take steps to ensure that the infrastructure along the coast is adapted to an increase in the activity level. The Ministry of Fisheries and Coastal Affairs has tasked the Coastal Administration with coordinating cooperation between the ports in Northern Norway. These efforts must include an assessment of the potential of the various ports, such as their strategic location, water depths, etc. and existing infrastructure. The coordination role involves facilitating dialogue between the ports and putting common challenges and possible solutions related to transport development in the High North on the agenda. Specific cooperation projects with Russian partners may also be considered. The Government wishes to promote increased activity and value creation on the Norwegian side of the border.

An increase in maritime traffic in the north is also likely to create a greater need for onshore maritime industries in Norway, for example shipyards and producers of ships' equipment. Shipyards build and repair both vessels and offshore installations. This work also involves subcontractors and other activities connected with shipbuilding and repair.

3.2.2 Developing expertise on maritime activity in Arctic areas

It is the Government's goal that Norway should have world-class expertise on maritime activity in Arctic areas. Increasing activity in the High North increases the need for knowledge and provides opportunities for maritime operations in Arctic areas. The Centre for High North Logistics has already been established in Kirkenes as a cooperation

project between the shipping industry, Bodø University College, the Norwegian School of Management and the Ministry of Foreign Affairs.

The Government proposes to strengthen Arctic expertise and promote specific projects related to safe and environmentally friendly shipping in the High North. This a strategic priority in the Government's High North policy. It is important to ensure that Norway is a world leader as regards maritime expertise in this field. These efforts will also be in line with the Government's maritime strategy. The University of Tromsø, in cooperation with Maritime Forum North and the Norwegian Shipowners' Association, has developed a maritime Arctic expertise programme. The programme is intended to increase the level of expertise among masters and operators of ships and offshore installations in Arctic waters and set safety standards for operations in these areas.

The Government intends to enhance expertise related to safe and environmentally friendly shipping in the High North in cooperation with the maritime expert communities in Tromsø and Bodø.

3.2.3 Satellite-based automatic ship identification

A satellite-based automatic ship identification system (AIS) will be an important part of the integrated monitoring and notification system for the northern sea areas, and is a central element in the Government's High North policy. It also has an important commercial dimension. The Norwegian space industry is playing a key role in the development of satellite-based AIS. This system will provide a better overview of shipping in Norwegian sea areas. This is particularly important in the High North, where a harsh climate, long distances and a vulnerable environment are creating new demands as regards monitoring. In order to make correct decisions, it is important that reliable and updated information is available. Satellite-based AIS will improve monitoring of maritime traffic in the north and prevention and follow-up of environmental crime at sea, and will also make it possible to respond more quickly and effectively to accidents. The Government is giving high priority to the development of a satellite-based automatic information system.

3.3 Developing petroleum-based business activities

3.3.1 Developing a knowledge base for petroleum activities in the north

It has been estimated that a large share of the world's remaining recoverable petroleum resources are located in the High North, but it is unclear how large this share is. So far, one field in the Barents Sea has been developed, and a number of discoveries have been made in the north. It is expected that more commercially viable discoveries will be made in Norwegian areas in the north as well.

The question of how large the Norwegian petroleum resources are is not just a national concern, but is also important in terms of meeting the increasing international demand for energy. Developing the knowledge base related to the resource potential in the High North will help to provide a basis for making assessments concerning Norway's presence.

The integrated management plan for the Barents Sea–Lofoten area, which is intended to provide the framework for petroleum activities in the sea areas in the north, will be updated in 2010. Knowledge about possible petroleum resources in the management plan area, together with improved knowledge of the environment, will form part of the basis for decision-making when the framework for petroleum activities is reassessed in 2010.

The Government intends to launch projects with the aim of gaining an overview of existing knowledge and generating new knowledge that can serve as a basis for activity in the north. This will, among other things, entail a long-term and continuous process of collecting data in the relevant area in order to increase our knowledge about Norway's petroleum potential in the north. Mapping resources and improving our understanding of the High North, will involve a number of data collection projects, including in the northern part of the Barents Sea.

3.3.2 Encouraging regional ripple effects from petroleum activities in the north

Economic activity and business development play a crucial role in ensuring welfare and employment in the north. The petroleum industry can increase welfare by providing capital, employment and competence-building. The Government will seek to ensure that petroleum activities become a driving force of business development and economic activity in Northern Norway. Experience has shown that petroleum-related industry has developed in geographical proximity to the offshore petroleum industry, and it has gradually moved north as new areas have been opened. As petroleum activities in the north have so far been limited, so have the ripple effects.

The Government wishes to create conditions that encourage the generation of ripple effects by petroleum activities in the north and that stimulate other business activities, including ones that use petroleum as an input factor. It is very important to identify the conditions that encourage the generation of ripple effects by petroleum activities in the region. The Ministry of Petroleum and Energy is therefore planning a study aimed at identifying the links between petroleum activities and ripple effects, as well as the conditions that have a bearing on the possible links between petroleum activities and other commercial activities. This could help to promote activity and presence in the north.

Well developed infrastructure is essential for realising the potential oil and gas have for generating desired value creation onshore. New transport routes can give rise to new business activity. Important efforts are being made together with actors on both sides of the Norwegian-Russian border to identify industry needs and strengthen Northern Norway's comparative advantages. These efforts will build further on existing cooperation forums, the Russians' development of the Northern Sea Route and the experience gained in connection with the Northern Maritime Corridor project. They will be based on cooperation between national and regional authorities that administer relevant public support schemes, private companies and the Centre for High North Logistics in Kirkenes and Bodø.

In addition to facilitating petroleum activities it is important to develop local education institutions in order to build competence in the region. Studies of the petroleum industry have shown that supplier networks play an important role in promoting local suppliers. It is important that they are strengthened so they provide effective forums where oil companies and local suppliers can meet.

3.3.3 Assessing alternative locations for petroleum bases in eastern Finnmark

In the long term, an increase in petroleum activities in the Norwegian and Russian parts of the Barents Sea may create a need for onshore support functions. It would therefore be useful to assess alternative locations for bases in the eastern part of Finnmark county that could provide services to petroleum operations in the Norwegian part of the Barents Sea or in Russian areas. In this connection it would be useful to assess locations for possible ports, including water depths, as well as the possibility of using and developing existing infrastructure.

Preferably, an assessment of alternative locations for bases should be based on given parameters as regards the scope of the petroleum activities, and possible locations should be considered on the basis of specific criteria such as geographical and economic viability. The aim is to study three or four possible base locations using the same criteria. The Government wants such a study as a basis for considering locations for the establishment of one or more petroleum bases in eastern Finnmark.

4. PROMOTING ONSHORE BUSINESS DEVELOPMENT IN THE NORTH

The Government will strengthen its focus on onshore activities in the north. Fish processing, tourism, mineral-related industries, environmental technology and biotechnology are important onshore priority areas and will play a key role in the development of the knowledge-based economy of the future. By focusing on onshore business development we will create a sounder basis for exploiting the full potential of the north – both offshore and onshore.

Given that Norway has an open and export-oriented economy, we must make better use of all parts of the country if we are to maintain the current high level of growth and development. Innovation and restructuring are essential if our society is to have a competitive business sector in the future. The Government's efforts take our advantages, both those we have acquired by building knowledge and those conferred by nature, as a starting point. The Government is giving priority to providing framework conditions that are conducive to innovation today in order to promote sustainable development in the future. It is important to design an innovation policy that takes account of the unique opportunities offered by Northern Norway. Providing a boost for innovation in the business sector in Northern Norway including the Sami industries is a key element of the High North Strategy. It is also dealt with in some detail in the Government's white paper on innovation, which was presented in the autumn of 2008. It will be further discussed in the upcoming white paper on regional policy. The intention is to make use of Northern Norway's natural advantages to strengthen our competitive basis and

increase value creation. The Government's aim is that everyone should be free to settle where they wish, and to utilise the potential for value creation in all parts of the country.

4.1 Developing tourism

In its national tourism strategy Valuable Experiences, the Government sets out its objectives for the tourism industry and outlines measures for realising them. Tourism has considerable potential for value creation and is often singled out as one of the important comparative advantages of the High North in connection with future business development. The High North is a region of great cultural diversity, with vast undisturbed wilderness areas that are well suited for adventure tourism. The Government attaches importance to protecting the natural environment in Northern Norway and Svalbard, where some of the last remaining large wilderness areas in our part of the world are to be found. Particularly high environmental standards have been set for Svalbard, with a focus on protecting undisturbed areas. This is an important framework condition for the business sector. To enable the High North to continue to make use of its strategic advantages as a destination that offers unique experiences in the future, we must safeguard the natural and cultural heritage of the region.

The High North has huge untapped potential as a tourist destination, but tourism in this region requires more in terms of organisation and knowledge that tourism in areas with a less harsh climate. In order to ensure that today's opportunities lead to value creation in the future, the Government will promote tourism in the High North by focusing on the following strategic priority areas:

- *Marketing and branding of the High North as a destination:*
  There is a general lack of knowledge about Northern Norway as a tourist destination. A company for coordinating the marketing and branding of Northern Norway abroad is currently being established. Examples of iconic tourist attractions that have already been established are the Hurtigruten Coastal Express, Sami communities, the Lofoten archipelago and the North Cape. Sites that have been included on the World Heritage List have particular potential for local community development and tourism. The Government's aim is that the Norwegian World Heritage sites should be developed as beacons of best practice as regards management of the natural environment and the cultural heritage.

- *Improving the quality of tourism products in the north:*
  It is important to offer a wider range of experiences. It is also important to promote cooperation between actors that provide transport, overnight accommodation and activities so that their efforts are more coordinated and targeted. The natural environment and the cultural heritage of the High North are unique, and the quality of the tourism products in the north depends on their preservation.

- *Improving access and further developing infrastructure in Northern Norway:*
  In order to unleash the potential of tourism it is important to improve infrastructure. Key elements here are development of the main airports in Northern Norway,

new direct flights from the rest of Europe, the Hurtigruten Coastal Express, cooperation with Russia and upgrading of the road network.

- *Developing year-round employment and year-round tourism:*
  Large seasonal variations are a critical factor for the tourism industry, and this is also the case in the north. Developing year-round products would help to provide year-round employment. Innovation and cooperation are key in efforts to increase value creation during the low season.

- *Raising the level of formal qualifications in the field of tourism – knowledge about nature, protection of the natural environment, culture, the cultural heritage, market development and product development:*
  The development of expertise adapted to challenges and opportunities in Northern Norway could create a basis for further business development and innovation. Developing sustainable tourism will require developing both expertise on tourism and the knowledge infrastructure related to tourism. The Government education and research opportunities offered in the High North in the field of Arctic tourism, giving environmental aspects and the development of ecotourism a more prominent place. These efforts will encourage centres of expertise to cooperate with each other, with the business sector in the region and with partners in the circumpolar region outside Norway. Finnmark University College, in cooperation with centres of expertise in Nordland and Troms counties, will be the central coordinating point for the development of higher education in tourism in the High North. Cooperation with national and international education and research institutions is also important in this connection. Raising the level of formal qualifications can help to improve coordination between actors in the tourism industry and promote project cooperation in the form of innovation, networking and marketing. Providing more employment for highly qualified people is important in order to maintain settlement patterns. It is therefore important to strengthen education and research opportunities in the field of tourism. Tourism is a priority theme in the knowledge infrastructure programme to boost research in the north (see section 5.1).

4.2 Developing mineral-based industries

Being one of the world's richest areas in terms of mineral deposits, the High North is the focus of international attention. Mapping metallic and non-metallic raw materials will ensure that mining continues to be an important industry in the High North. The Government intends to develop mineral-based industries in the north.

Through the subsidiary agency Geological Survey of Norway, the Ministry of Trade and Industry will work to make available necessary basic data from geophysical mapping carried out by planes and helicopters, including electromagnetic, magnetic and radiometric data. The results of this mapping are expected to provide a considerable stimulus to new mineral-based industries in the north. The project will also lead to better management of the natural resources in the area. Priority will be given

to the interior of Finnmark county, coastal areas of western Finnmark, coastal areas in the western part of Troms county, parts of the Lofoten-Vesterålen archipelago and the areas Rombak-Ballangen-Tysfjord in the northern part of Nordland county.

4.3 Developing expertise and business activity based on Arctic conditions

Knowledge is the key to business development in the High North. It is only by building knowledge for, about and in the north that we can make use of the unique opportunities these areas offer and resolve the challenges we are facing in the north. A qualified labour force is crucial to the development of the business sector and public services. The challenges Northern Norway is facing may, nevertheless, at the same time give the business sector in the region a comparative advantage. However, this requires that companies and research institutions in Northern Norway are able to translate the experience-based knowledge of their employees into documented knowledge. For example, this applies in relation to the need for know-ledge-based business development and the spin-off effects created by oil and gas development in an Arctic climate.

Increasing business activity in the north, particularly in connection with petroleum activity on the Russian side and greater demand for transport, add to this need. The unique characteristics of the High North call for specific expertise that must be developed, and should be delivered, by institutions in the region. Good educational opportunities are necessary if it is to be attractive to live in the region. The environmental threats are transnational in nature, and to address them, we must develop and build knowledge, awareness and technology in cooperation with other actors – both from the knowledge sector and from the business sector in the High North.

The Government intends to develop knowledge of new technology that is adapted to Arctic conditions. Through the knowledge infrastructure programme to boost research in the north, under the auspices of the Research Council of Norway, Northern Norway is now being given the opportunity to gradually position itself as a leader in research on tourism and Arctic technology. In cooperation with the Ministry of the Environment and the Ministry of Local Government and Regional Development, the Ministry of Education and Research will launch projects aimed at coordinating and strengthening education and research opportunities in the High North in the fields of Arctic technology, environmental technology, sustainable energy and Arctic business development. The establishment of a specific programme in the field of chemical oceanography will also be considered. A long-term approach is needed to develop strong centres of expertise and sustainable cooperation. The technological community in Narvik (the Northern Research Institute and Narvik University College) has, for example, been engaged in the field of cold climate technologies since 1991. It has expertise in hydropower, solar power/ solar panel production, wind power, bioenergy, etc. The Cold Climate Technology Research Centre focuses on present and future requirements for adapting structures, materials, infrastructure and operations for use in cold climates.

4.4 Strengthening innovation and development capacity

4.4.1 An innovation boost for business in the north

The northernmost part of Norway faces challenges that make it difficult to make full use of the region's potential for value creation. Its business structure is characterised by small companies that are scattered over a large area. Industry has to a large extent been based on raw materials. The area is also sparsely populated. Compared with the national average, the business innovation rate in Northern Norway has been low. The purpose of our innovation policy is to enable us to utilise the potential in the areas we have given priority. These include energy, the marine and maritime sectors, environmental technology, mineral-related industries and tourism. The Government's aim is to provide framework conditions that encourage innovation in the business sector in the north.

In its white paper on innovation, the Government sets out that its goal is a society with welfare schemes that are among the best in the world, a society with competitive companies in all parts of the country, a society that does not undermine the opportunities of future generations. In twelve points the Government describes how it intends to achieve its vision of creating an innovative and sustainable Norway. All of these measures are relevant in Northern Norway. The efforts to promote small and medium-sized enterprises and develop a culture of entrepreneurship are two good examples.

• *The Government will facilitate innovation in small and medium-sized enterprises in all types of regions*

For small and medium-sized enterprises, a lack of expertise and economic resources is an obstacle to innovation. Innovation Norway, SIVA (the Industrial Development Corporation of Norway) and the Research Council of Norway have been given the task of promoting cooperation to increase value creation. Based on its own studies, Northern Norway has concluded that increased onshore value creation can be achieved by:

- Strengthening efforts to industrialise, commercialise and internationalise new products and industries. Relevant themes could be marine bioprospecting, telemedicine, space activities, marine industries, mineral resources, environmental technology, energy and tourism.

- Developing regional business and knowledge clusters and networks in industries in which the region has comparative advantages. Examples include ARENA, the Norwegian Centre of Expertise and the VRI programme for regional R&D and innovation under the auspices of the authorities that administer relevant public support schemes.

- Implementing measures designed to develop a more market-oriented approach among companies in Northern Norway and help them to make better use of their market potential, both with respect to existing and to future products and services.

Easier access to financial support schemes will also make it easier for small enterprises to take the step from idea to commercialisation. Two regional seed money funds have been set up in Northern Norway. In 2008 the Government also established Investinor AS, a new state-owned investment company, to ensure Norwegian companies better access to venture capital.

• *The Government will promote a culture of entrepreneurship*
In order to make it easier for good ideas to find their way to the market, the Government will promote a culture of entrepreneurship. We will present an action plan for entrepreneurship, with particular emphasis on higher education. This will be a nationwide effort, and of great importance to Northern Norway. Entrepreneurship programmes have already been launched at educational institutions in Northern Norway. The efforts to promote entrepreneurship are essential in enabling people with the right qualities to see opportunities, act on them and commercialise their ideas.

Society's ability to restructure, innovate and adapt is essential to a future knowledge-based and competitive economy. These qualities have been decisive for Norway's ability to maintain continuous strong growth. An innovation boost in the north is a cross-cutting effort aimed at maintaining and increasing value creation in the northernmost part of our country. The Master of Science programme in business at Bodø University College will be a major contri-butor to developing Northern Norway's restructuring and innovation capacity. It is also important for our High North efforts as a whole that we further develop our expertise on Russia, as is being done, for example, at the High North Centre for Business at Bodø University College.

4.4.2 Strengthening local development efforts

A number of small municipalities and local communities, particularly in Northern Norway, are vulnerable in the face of the global and national changes that are affecting the labour market and the business sector, and young people's expectations as regards education, employment and leisure activities. This applies to all parts of rural Norway, but it is particularly evident in municipalities that have small populations and a poorly diversified economy, and that are located far from major centres. The Government allocates considerable funds to regional development in Northern Norway each year.

The Ministry of Local Government and Regional Development will implement the Government's policy for enhancing the municipalities' capacity and competence and strengthening local development efforts.

The specific content and form of the measures will be determined in 2009, through close cooperation involving the Ministry of Local Government and Regional Development, the Ministry of the Environment, the Sami Parliament, the Regional Development Centre, Innovation Norway and the country authorities, and in close dialogue with the Association of Local and Regional Authorities and the Norwegian Trade Union Confederation. The aim is to revitalise the municipality as a driver of local development so that more municipalities benefit from and make effective use of the public support schemes that are available at

national and regional level. The policy is also intended to enhance the county authorities' ability to play a more proactive advisory and supportive role vis-à-vis municipalities that have great development needs, but limited capacity and competence to address the challenges they are facing. The increased efforts to promote local development at municipal level should support and reinforce existing efforts at regional level regional.

The main goals of these efforts will be to:

- Support development efforts in municipalities where there is little development activity. The municipalities can focus on addressing local challenges related to social development in the broad sense, or to business development more specifically (business, local community development, services, image, etc.).
- Develop municipalities' and regions' expertise as regards local community development.
- Make better use of existing development resources (local, regional and national).
- Work proactively to develop effective regional cooperation with the municipalities on resource use and technical support.

5. FURTHER DEVELOPING THE INFRASTRUCTURE IN THE NORTH

Appropriate infrastructure must be put in place if the potential of the High North is to be fully realised. Transport policy in the north is important for both offshore and onshore value creation. Oil and gas activity could become a driving force in future economic development in the north. It is important to create conditions that are conducive to the establishment of the extensive onshore activity that the petroleum development is expected to generate, and one element here is ensuring a reliable and secure supply of electricity. The long distances both within Northern Norway and from the region to world markets pose a considerable challenge. The fisheries and tourism industries are just two of the sectors that are dependent on good roads and reliable air connections in order to reach regional, national and international markets. The Government intends to maintain and upgrade infrastructure in the north with a view to safeguarding industries in the region and maintaining settlement patterns.

Many of the policy measures outlined in the Government's High North Strategy are concerned with knowledge building: "knowledge is at the core of our High North efforts." The drivers of the knowledge building system will be a knowledge-based business sector, research institutions and administrative bodies, and universities and university colleges. It is important that all of these cooperate effectively to ensure local ownership and the strongest possible support for these measures in the north.

5.1 Developing the knowledge infrastructure

The Government intends to strengthen and further develop the knowledge infrastructure in the High North. In order to generate spin-off effects that benefit settlement patterns and business development in the north, it is essential that the knowledge institutions in the region are competitive, both nationally and internationally.

The University Centre in Svalbard is engaged in research and offers education at a high

academic level based on its unique location in the Arctic. The opportunity to use nature as a laboratory and arena for making observations and collecting and analysing data gives it particular advantages.

In the Government's view it is of great importance to promote the formation of networks and division of labour between higher education institutions in the north, as elsewhere. It also attaches importance to enhancing cooperation on knowledge building rather than competition between the institutions. This will in turn promote business development.

Knowledge is one of the most important building blocks in sustainable social and business development. The aim is to increase knowledge-based value creation and improve competitiveness in the north in areas where the High has natural advantages. Northern Norway faces challenges as regards knowledge building because its centres of expertise are small and relatively new, because of the vast distances and because it has limited weight in many business contexts. These challenges can be met through strategic cooperation between institutions and actors in the north. This will require closer cooperation between the various research and educational institutions and between centres of expertise and the business sector than is currently the case. The regional research funds that are to be established from 2010 onwards will be an important contribution to strengthening relevant regional research.

One example of a joint strategic effort to strengthen knowledge infrastructure across county borders is the knowledge infrastructure programme to boost research in the north, under the auspices of the Research Council of Norway and financed by the Ministry of Local Government and Regional Development. The programme is intended to promote closer cooperation on knowledge building and business development between universities, university colleges and research communities in the three northernmost counties. Tourism and Arctic technology are priority themes (see sections 4.1 and 4.3).

Another example of such cooperation can be found in the energy sector in Finnmark county: EnergiCampus NORD (ECN) in Hammerfest was established following an initiative taken by the Universities of Tromsø, Trondheim and Stavanger in cooperation with the university colleges in Finnmark and Narvik. ECN is to offer higher education in energy-related subjects. The basic idea has been to set up an integrated education programme that covers the field of energy, natural resources and the environment, and that draws on its proximity to relevant industry and infrastructure in Finnmark, including the Snøhvit plant.

The establishment of the Centre for High North Logistics is yet another good example of cooperation between private business actors and the public sector. This centre of expertise for the development of sustainable solutions for maritime transport and logistics in the High North will be located on the axis Murmansk-Kirkenes-Bodø. The centre was established in 2008 as a result of cooperation between the shipping industry (Tschudi Shipping), Bodø University College, the Norwegian School of Management and the Ministry of Foreign Affairs.

Cooperation and coordination between higher education institutions in Northern Norway are important in order to create the strong knowledge networks that are necessary for the dynamic development of the knowledge institutions and the business sector in the north.

Producing a labour force with relevant qualifications and expertise in Northern Norway is a challenge. There is a high drop-out rate from upper secondary schools in Northern Norway, and the number of applicants to several of the university colleges is low. Measures aimed at stimulating centres of expertise in the north are therefore important to make it easier to recruit and retain highly qualified personnel and good students.

The Government intends to launch a process to promote closer cooperation between higher education institutions in Northern Norway with a view to improving coordination.

5.2 Developing the transport network

Northern Norway is characterised by vast distances, harsh topographic and climatic conditions and vulnerable nature. The Government intends to develop the infrastructure in the north as part of its efforts to make Norway more robust and competitive in its response to international developments in the High North. Considerable value creation takes place in Northern Norway. This calls for a well-functioning infrastructure. The Government will therefore propose a number of projects aimed at developing and modernising the transport infrastructure in Northern Norway. These proposals will be considered in the light of the needs in other parts of the country.

As part of its High North Strategy, the Government will present plans for an extraordinary strategic effort in the period 2010–2019. The Government's aim is to establish transport infrastructure between Norway and neighbouring countries to link different parts of the Barents region more closely together. Facilitating transport east–west will help to increase trade and cooperation with our neighbouring countries. This effort is primarily motivated by international and national concerns, but the results will also be important for regional development in the north.

Air transport is important in the north because of the vast distances, and there is a well developed network of airports in the three northernmost counties. Of Avinor's 46 airports, 28 are located in these counties and Svalbard. Finnmark county has 11 airports. In addition to their importance for passenger transport, these airports are important for air transport of fish, for tourism and for emergency response in connection with oil and gas production.

Maritime transport is important because of the vast distances and the population concentration along the coast. About 50% of freight transport between Tromsø and Finnmark is by sea. The fisheries and aquaculture sectors are among Norway's most important export industries, and they play an essential role in many local communities along the coast. As part of a strategy aimed at promoting value creation in the fisheries sector, the Ministry of Fisheries and Coastal Affairs intends to maintain and further develop state owned fishing ports. The Government will also implement important measures to improve the safety and efficiency of shipping lanes.

The Automatic Identification System (AIS) provides the Norwegian Coastal Administration with information about maritime traffic. This information serves as a good basis for making risk assessments and evaluating preventive maritime safety measures and for determining required oil spill response capacity.

The E6 highway is the backbone of the land-based transport system between the northern and southern parts of Norway. Eliminating bottlenecks will increase the competitiveness of the business sector, improve safety on stretches that have a high accident rate, and facilitate travel along the E6 and on connecting roads. As investment projects and minor measures are implemented, traffic safety will improve and at the same time travel times will be significantly reduces. Broadening narrow parts, straightening out curves and improving gradients will make the transport system more predictable and robust.

In order to improve connections between Russia and areas further west and south in Northern Norway, it is important to improve the national road network in Finnmark and Troms counties, both towards Russia and towards Finland. The stretches between the Norwegian-Russian border and Hammerfest and Tromsø are particularly important.

In its follow-up to the High North Strategy, the Ministry of Transport and Communications has considered the transport system in the border areas towards Russia and cross-border infrastructure providing connections to Sweden and Finland. In the spring of 2008, a working group made up of participants from regional authorities and road authorities in Norway and Russia presented a report containing recommendations for measures aimed at improving the transport system in the border areas in the short and long term. The Government attaches importance both to the group's recommendations and to the counties' priorities when considering measures to improve east–west transport corridors between Norway and its neighbours in the east.

The Government intends to further improve maritime safety in the High North. One of the most important preventive measures has been the introduction of the traffic separation scheme approximately 30 nautical miles off the coast between Vardø and Røst, which is mandatory for all tankers and cargo vessels with a gross tonnage exceeding 5000 tonnes.

Norwegian ports in the north should position themselves and devise ways of cooperating that will attract any increase in maritime activity in the north. The Ministry of Fisheries and Coastal Affairs has therefore requested the Norwegian Coastal Administration to coordinate cooperation between ports in Northern Norway. Concrete cooperation projects with Russian partners may be considered. These could build further on existing cooperation forums, the Russians' development of the Northern Sea Route and the experience gained in connection with the Northern Maritime Corridor project.

The Government intends to facilitate the further development of Kirkenes Airport at Høybuktmoen as an essential element in its High North efforts. The airport and the town

of Kirkenes could become a competitive and attractive gateway for the increasing activity that is expected in northwestern Russia.

There is close cooperation in the field of transport in the Barents region. Cooperation at national level takes place in the Barents Euro Arctic Transport Area (BEATA). The Working Group on Communications under the Barents Regional Council participates in this cooperation. The BEATA has been engaged in drawing up a transport strategy for the region, for example by developing transport corridors to link together two or more of the countries, thereby creating a common transport market. This is a demanding task, not least due to the differences between the countries as regards division of responsibility, and the divergent business interests within and between the countries. Norway is also participating actively in the establishment of a partnership in the field of transport and logistics under the Northern Dimension.

The Government has presented specific proposals for transport infrastructure measures in Report No. 16 (2008–2009) to the Storting: National Transport Plan 2010–2019.

5.3 Upgrading electric power infrastructure and security of supply

An adequate transmission grid is essential for business development in the High North and for the development of wind power. New petroleum activity in the Barents Sea, other business activity and the development of wind power may create a need for a better power supply in the region and an improved transmission grid. Because distances are so great and there are so few customers in the High North, infrastructure development is time-consuming and costly. It is therefore important to ensure close coordination between grid investments, electricity production and consumption. The Government will seek to facilitate appropriate development of the transmission grid in the High North.

Increased production of renewable energy will require improving the transmission grid. Under the current rules, the authorities may not instruct grid companies to increase capacity even if production capacity is increased. The Ministry of Petroleum and Energy has therefore proposed that the Energy Act should be amended so that grid owners would be obliged to connect new electricity producers to their grids if an overall evaluation indicates that the investments in production and upgrading of the grid will effectively serve society at large. If the amendments are adopted, the obligation to connect producers to the grid would result in closer coordination between grid capacity, production and consumption, and would thus trigger more investments. This would be of great importance, particularly for renewable energy production such as wind and small-scale power plants.

As the transmission system operator, Statnett is responsible for system coordination in Norway, and therefore for the sound economic operation and development of the Norwegian central grid. Statnett also analyses needs and plans investments to meet future needs, including in Northern Norway. In Norway a licence is required for any new transmission line. The Government is seeking to make the process of dealing with licence applications more effective with a view to ensuring the best possible coordination between grid development, production and consumption.

According to Statnett's estimates, there is a need for investments in the central grid in Northern Norway totalling NOK 4.3 billion over the next ten years. This figure includes investments in the central grid by other actors. Assuming that there will be new petroleum activity in the Barents Sea, an increase in other business activity and further development of wind power, it has been estimated that investments in the transmission grid of NOK 9 billion will be needed in the period leading up to 2025. Statsnett's plans include investments of just under NOK 3 billion in new 420 kV transmission lines from Ofoten to Balsfjord, with an extension to Hammerfest. This will provide capacity for an increase in consumption and new production in Troms and western Finnmark. Increased capacity will be essential for phase II of the Snøhvit development. The production of large amounts of wind power in Finnmark and new processing plants for eastern Finnmark will create a need for 420 kV transmission lines from Skaidi to Varangerbotn and from Varangerbotn to Finland. Preliminary estimates put these investments at NOK 1.4 billion. In the event of a substantial power surplus in Northern Norway, it may be necessary to upgrade the transmission lines leading south. Several possibilities have been envisaged, for example upgrading the transmission lines from Ofoten to Rana and further south, which would require investments estimated at NOK 3.6 billion. An alternative would be to increase transmission capacity between Norway and Sweden if the grid in Sweden is also upgraded.

5.4 Further developing space-related infrastructure

Space-related infrastructure is an important management tool in the Government's High North policy and is an important component of infrastructure in the broad sense. Navigation, environmental monitoring and exercise of sovereignty are key themes where satellites play a significant role. The Government intends to build space-related infrastructure in the High North by participating in international programmes and national programmes such as the one to establish AIS via satellite.

One problem in the High North is that current coverage by navigation systems is limited. The EU is in the process of building its Galileo satellite navigation system. Together, GPS and Galileo can offer better availability and accuracy, and can help to increase reliability and safety in the High North. This will be useful in connection with business activity, shipping and air traffic, environmental safety and the exercise of authority.

In the period 2011–2018, a number of advanced environmental and climate monitoring satellites will be launched under the Global Monitoring for Environment and Security (GMES) programme. These will provide extremely good coverage in the High North. This will significantly increase capacity that can be used to monitor climate change and air, sea and land pollution in the north. The system will also provide better ice forecasts, thereby improving the safety of maritime navigation in Arctic areas. National authorities and administrative bodies will be important users of the system. Norway will participate in GMES through European Space Agency (ESA) programmes. With a view to building expertise in these fields, the Ministry of Education and Research is planning to establish new graduate and post-doctoral research fel-

lowships in relevant fields. The space-related activities at Narvik University College, the University of Tromsø and NAROM at Andøya Rocket Range are all key elements in knowledge building in the north.

The Galileo satellite navigation system and the Global Monitoring for Environment and Security (GMES) programme are joint European projects based on cooperation between the ESA and the EU.

6. THE GOVERNMENT WILL CONTINUE TO EXERCISE SOVEREIGNTY FIRMLY AND STRENGTHEN CROSS-BORDER COOPERATION IN THE NORTH

Today the security policy situation in the north is complex and marked by a broad range of different risk factors. There is a growing international focus on the High North due to issues related to fisheries, energy, the environment and the melting of the polar ice. Dialogue and constructive cooperation with the coastal states in the north, particularly Russia, are an important dimension of Norwegian foreign policy in general and are vital for achieving the best possible results in the High North. They are also essential for ensuring that the High North continues to be a stable, secure part of Europe. The circumpolar nature of this cooperation is important in this context and must be underscored. Like the other Arctic states, Norway and Russia share a strong common interest in stable and predictable development in the region, marked by mutual understanding and constructive cooperation. The Government attaches great importance to this. The presence and activity of the Norwegian armed forces in the High North is a key part of the Government's policy in the north and helps to maintain stability and security in the region. Importance is also attached to maintaining a visible military presence that has the relevant capacity to exercise sovereignty, safeguard our sovereign rights in our 200-mile zones, exercise authority, and carry out surveillance, intelligence and crisis management.

These priorities are primarily reflected in the new Long-term Defence Plan, which was approved by the Storting in June last year, where it was among other things decided to locate Norwegian defence headquarters to Reitan, near Bodø, move the Inspector General of the Army to Bardufoss, and concentrate military helicopter activities in Bardufoss. The phase-in of Skjold Class MTBs is also important in a High North context.

The Government's aim is to improve border control procedures and increase their efficiency, and to continue the efforts to facilitate border crossing between Norway and Russia, by building a new border control station at Storskog.

There is a long tradition of cultural cooperation in a wide range of areas in the north. Closer cultural contact promotes understanding and communication and creates meeting places and networks between different countries and cultures. It enhances mutual confidence, insight and respect across geographic boundaries and often leads to cooperation in other areas.

Norway participates in a number of cooperation forums linked to the Arctic Council, the Nordic Council, the Barents Euro-Arctic Region, the Baltic Sea Region and the Northern Dimension.

An effort is now being made in a broader European context to make cultural cooperation in the north a new priority in the Northern Dimension Cultural Partnership. The challenges and opportunities in the region also apply to the cultural dimension, and to the cross-border creativity and communication that are now seeking new forms of expression. This opens up for new forms of cooperation in the fields of culture and industry, tourism and cultural tourism in the entire Barents region. Educational and research cooperation in these fields can also provide valuable input. There is cooperation in a wide range of areas between institutions of higher education and research in Northern Norway and corresponding Russian institutions. This is helping to promote people-to-people contact and knowledge development.

6.1 Increasing the activities of the Coast Guard

One of the Coast Guard's most important tasks is maintaining a presence in the sea areas in the north. Importance is attached to maintaining a regular presence, particularly in the Fisheries Protection Zone around Svalbard. Through its presence, the Coast Guard helps to carry out surveillance and uphold our sovereign rights in these waters, while at the same time exercising authority by monitoring fishery operations. An adequate control regime is essential for ensuring the sustainable use of the fisheries resources in the north. The Coast Guard, with the support of other branches of the armed forces, plays a key role in enforcing existing legislation in this area. The Coast Guard has, in cooperation with the fisheries authorities, helped to reduce illegal fishing in the Barents Sea substantially. The Coast Guard also contributes considerable capacity to search and rescue operations and assists other authorities such as the police and the customs authorities when necessary. The Coast Guard's operating budget has been increased since the Government took office, and in recent years many of its vessels have been modernised. This has increased the Coast Guard's capacity to carry out its primary tasks. The new vessels will operate in the High North, which reflects the high priority given to this region. The Coast Guard's operating capacity will be further increased when new helicopters are phased in.

The Government intends to strength the Coast Guard's capacity to maintain a presence in the sea areas in the north.

6.2 Further developing border control

The exercise of sovereignty and surveillances are key elements of the Government's High North Strategy. Norway's ability to exercise its sovereignty clearly and predictably on land, at sea and in the air is a fundamental prerequisite for other activity in the north. This important task has been assigned to the armed forces, which are therefore intensifying their activities in the north.

In our view, there is also a clear need to strengthen border control at the Sør-Varanger Garrison in Finnmark county. We cooperate closely with the Russians on border surveillance today, and we must take our share of the responsibility for ensuring that this surveillance is carried out in a satisfactory way. The land border between Norway and Russia is also part of the Schengen area's external border in the north. Thus, by providing adequate border surveillance, we are also fulfilling our Schengen obligations. The Government's

aim is to improve border control and make it more efficient. In this connection, it has been proposed that the six border stations currently in use should be replaced by two larger stations, each of which covers half of the border in Sør-Varanger. It would involve building two new border stations. This would make it possible to concentrate expertise and reduce the amount of paperwork. Such a solution would free officers from administrative tasks so they could spend more time on operative tasks. It would also enhance the capability and capacity for carrying out risk assessments and analysing relevant information.

6.3 Further developing civilian border surveillance and control

In recent years, the civilian border surveillance capacity for carrying out personal checks and combating cross-border crime and illegal migration across the Norwegian-Russian land border has been developed with a view both to preventing offences and to fulfilling Norway's obligations under the Schengen acquis. Although the civilian border control surveillance is headed by the police, it is carried out with the assistance of the armed forces/Garrison in Sør-Varanger, in accordance with section 20 (4) of the Police Act, and the border commissioner at the Norwegian-Russian border. Close cooperation has been established between the Russian and Finnish border authorities to combat cross-border crime. Not least thanks to this cooperation, there is very little cross-border crime in the area. The Government's aim is to maintain security and stability at the Norwegian-Russian border, and it recognises the need to further develop civilian border surveillance capacity in order to deal with any increase in crime or new threats. As the border is part of the Schengen external border, there will also be a need to adapt to new requirements for cooperation on border surveillance and border control, as is being done, for example, through the new Schengen European Border Surveillance System (EUROSUR), which is currently under consideration.

With a view to simplifying checks on persons at the Storskog border station, efforts to upgrade the passport control booths, etc., have been started during the past year. Other improvements have also been made to comply with recommendations made following the Schengen evaluation of Norway that was concluded in 2007. With a view to simplifying border procedures, an arrangement involving a local border resident ID card for people living on either side of the Norwegian-Russian border is being developed. A draft agreement on such an arrangement has been submitted to the Russian authorities. Such an ID card would be issued in place of a visa, and could, for example, enable people to commute on a daily basis between Sør-Varanger and Pechanga.

The Government attaches great importance to efforts to maintain the positive trend in people-to-people cooperation and economic cooperation with Russia. This is dependent on measures that facilitate border control procedures, among other things so that they do not put an undue strain on those crossing the border lawfully.

Capacity at the present Storskog border station is stretched to the limit. An increase in traffic volume would require considerable development of the physical infrastructure of the border station. The introduction of a border resident ID card would also require widening the road through the border control station to include additional

lanes. An increase in goods transport could also create problems for traffic flow through the Storskog border station, which currently lies right at the border, next to the Russian border station Borisgleb. If a new border station is built, the possibility of moving it to an area further back from the border should be considered.

The building of a new border station should be seen in connection with the construction of the interstate highway between Hesseng and Storskog under the National Transport Plan. Planning and construction should be carried out in close cooperation with the customs authorities and other control bodies, with due consideration to improving the infrastructure at the border in accordance with the needs of the transport sector and the border control authorities.

6.4 Strengthening competence-building cooperation

The Government will further develop Norway's bilateral cooperation with Russian in the High North. By means of concrete cooperation projects, we will build confidence and strengthen our ties and economic cooperation with Russia.

Our cooperation with Russia in the fisheries sector, particularly as regards marine research and monitoring the fish stocks and the marine environment in the Barents Sea, dates back more than a century. The cooperation in these fields was not, however, formalised until 1975. The Joint Norwegian-Russian Fisheries Commission, which was established in 1976, has been decisive for the management of fish resources in the Barents Sea. This institutionalised cooperation must be continued and further developed in the years ahead.

Through the programme for project cooperation with Russia, which is administered by the Ministry of Foreign Affairs, the Government has allocated NOK 130 million in 2009 for cooperation projects that promote cross-border network building. The programme also contributes to giving practical substance to the multilateral Barents Cooperation. The funds for project cooperation with Russia are used to support cooperation between Norwegian and Russian institutions of higher education in the Barents region. Funds are also allocated for cooperation projects between Norwegian and Russian players in the media and civil society. Priority is also given to people-to-people cooperation in the Barents region, with a particular focus on measures for young people, cultural projects and cooperation between indigenous peoples.

The programme also supports environmental cooperation with Russia. The purpose of this cooperation is to obtain a scientific basis for ecosystem-based management of fisheries resources in the Barents Sea by conducting surveys of fish stocks and vulnerability analyses and establishing research networks and cooperation on environmental data. A joint Norwegian-Russian report on the status of the environment in the entire Barents Sea is scheduled to be completed in the course of 2009. It will form the basis for further cooperation on ecosystem-based management. This work is being carried out in cooperation with the Joint Norwegian-Russian Fisheries Commission. Efforts are being made to establish climate change as a priority area in

the bilateral environmental cooperation with Russia.

In the field of higher education and research, efforts are being made to intensify Norwegian-Russian cooperation on enhancing knowledge in the fields of petroleum and energy, sustainable use of resources, business development, and the humanities and social sciences.

Close cooperation with our neighbouring countries is important for improving maritime safety and oil spill preparedness in Norwegian waters. Cooperation between Norway and Russia on safety at sea in the Norwegian Sea and the Barents Sea has been established on the basis of an MoU of 2006. Cooperation on oil spill preparedness has also been established. The cooperation is being followed up by the Russian Ministry of Transport and the Norwegian Ministry of Fisheries and Coastal Affairs through a steering committee and working groups on safety at sea and oil spill preparedness.

Norway's cooperation with Russia in the field of health and social services will continue to be linked to the Barents Cooperation Programme on Health and Related Social Issues and the Northern Dimension Partnership in Public Health and Social Well-being. Priority will be given to efforts to prevent the spread of infectious diseases such as HIV/AIDS and tuberculosis.

The Government intends to continue allocating funds for Norwegian-Russian cooperation projects in the time ahead. Kirkenes will continue to play a key role in the Barents Cooperation. The Government will advocate that the Barents Secretariat and the Barents Institute should be further expanded. The Barents Institute was formally established by the Ministry of Foreign Affairs on 1 February 2006 as a follow-up to Report No. 30 (2004–2005) to the Storting Opportunities and Challenges in the North. The purpose of the Barents Institute is to conduct research and studies and disseminate information concerning cross-border regional issues. The Institute is located in Kirkenes. The Government intends to ensure that the Barents Institute is given permanent status. At the general assembly in 2008, it was decided that the Barents Institute should be placed under the University of Tromsø.

6.5 Developing cultural cooperation

The Government intends to intensify cultural cooperation with Russia as a key element of its High North Strategy. The people-to-people cooperation and the cultural dimension of the strategy have contributed to closer cooperation in the Barents region, and a number of measures have led to closer contact and more frequent exchanges between networks in Northern Norway and northwestern Russia. In January 2009, the ministers of culture of both countries signed an agreement on common efforts to promote cross-border cultural cooperation. For the time being, the cooperation is divided into three-year action plans, the first of which will begin in 2010. Initially, the aim is to establish a Norwegian-Russian cultural forum and arrange annual cultural festivals in the region. At the same time, Russia aims to establish a Russian counterpart to the cultural grant programme BarentsKult, which is the framework through which much of the cultural cooperation in the High North is funded. The agreement already includes a number of specific priority areas: film, projects for children and young people, and indigenous culture.

Other equally important matters include the mobility of artists, general access to culture, intercultural dialogue and the cultural heritage and history of the peoples of the region.

The Norwegian-Russian action plan for cultural cooperation in the High North is based on the strong cultural ties that have been forged through history. The plan underscores the importance of continuing to develop cultural cooperation on the basis of local and regional initiatives, and ensuring regional participation and developing strong contacts in the north. This will be reflected in the wording of the first three-year plan. The Government intends to develop a comprehensive plan for the cultural dimension of its High North policy, in cooperation with the newly established cooperation forum for the three counties of Northern Norway and with the Sami Parliament.

A broad range of cultural activities that also involve people-to-people cooperation, sport and indigenous peoples have long figured prominently in the Barents region, and they have become even more important in the follow-up to the cultural dimension of the Government's High North policy. Cultural expression and cultural exchange foster greater understanding and respect between different cultures. The Government will seek to provide cultural meeting places and arenas that give visibility to the cultures and traditions of indigenous peoples and other peoples across national borders. For example, it will support the establishment of the Riddu Riðđu Centre for Northern Peoples. Norway participates in a large number of cooperation forums linked to the Nordic Council (such as the Northern Dimension Cultural Partnership) and the Barents Euro-Arctic Council, the Norwegian Barents Secretariat and, as of 2009, a Norwegian-Russian agreement on cultural cooperation with an action plan focusing on the High North is in place. In a European context, efforts are being made within the Northern Dimension to establish culture in the north as a new cooperation area.

7. SAFEGUARDING THE CULTURES AND LIVELIHOODS OF INDIGENOUS PEOPLES

The peoples of the High North are bound together by their livelihoods and dependence on the natural environment. Indigenous peoples' unique experience and knowledge give this an extra dimension. Indigenous peoples possess valuable knowledge about nature, the climate, the environment and traditional practices. They are stewards of cultural values and languages, and have specialised knowledge of ways of making a living under marginal conditions in a subarctic area. This knowledge must be preserved and further developed in order to meet future challenges related to ecological, economic, geopolitical and other forms of social change.

The Government's High North policy is intended to safeguard the language, culture, livelihoods and way of life of the indigenous peoples in the region. The Government will seek to provide conditions that enable the indigenous peoples themselves, in a proactive manner and in accordance with their own wishes and needs, to participate in the processes and benefit from the opportunities offered by the future development of the north. The measures are intended to promote

capacity and competence building. The centres of expertise at the Sami University College, the University of Tromsø, Finnmark University College and other relevant institutions should be encouraged to cooperate more closely on these issues.

7.1 Documenting traditional Sami knowledge

Indigenous peoples' traditional knowledge is valuable and constitutes a unique ability to live and work in the High North. To ensure that this knowledge is integrated into efforts to develop knowledge and utilised by the public administration, the business sector and future generations, the Government will initiate a cross-border regional project to document traditional Sami knowledge from a northern perspective, modelled on the national programme at the Sami University College. The purpose is to ensure that traditional knowledge is an element in the process of further developing our knowledge and that it is integrated into planning and management in the areas of land use, natural resources and the environment in the High North, and utilised in the monitoring of the region.

7.2 Establishing a programme for cultural industries

Conditions conducive to business development must be provided in order to ensure that small indigenous communities are able to cope with global changes without having to relinquish their own culture and livelihoods. This applies particularly to indigenous communities in Russia. The Government intends to establish a business development programme for indigenous peoples based on their own culture, under the auspices of the Barents Cooperation. The purpose is to ensure further progress and a more stable basis for social development in the Barents region through business development, value creation and the development of new cultural industries in the fields of tourism, business and trade, small-scale industry, Arctic food, design, artefacts, etc.

7.3 Developing ethical guidelines for economic activities in the north

Indigenous communities are vulnerable. Integrated resource management includes protection of indigenous peoples' livelihoods, traditional knowledge and reindeer husbandry areas. Companies engaged in exploiting natural resources in indigenous peoples' areas are responsible for meeting the high standards set for such activities. The Government will initiate a cross-border circumpolar project to develop ethnical guidelines for how different actors are to take Indigenous peoples' interests into consideration when conducting economic activities in the High North. The purpose is to ensure that indigenous peoples' rights are respected in the management and exploitation of natural resources and the natural environment in the High North. The project will be carried out under the auspices of the Lule Sami centre Árran, the Sami University College and the University of Tromsø, in cooperation with energy management experts at Bodø University College. It will be necessary to involve representatives of business and industry and branch organisations in this work. For more information on this subject, see Report No. 28 (2007–2008) to the Storting on Sami policy.

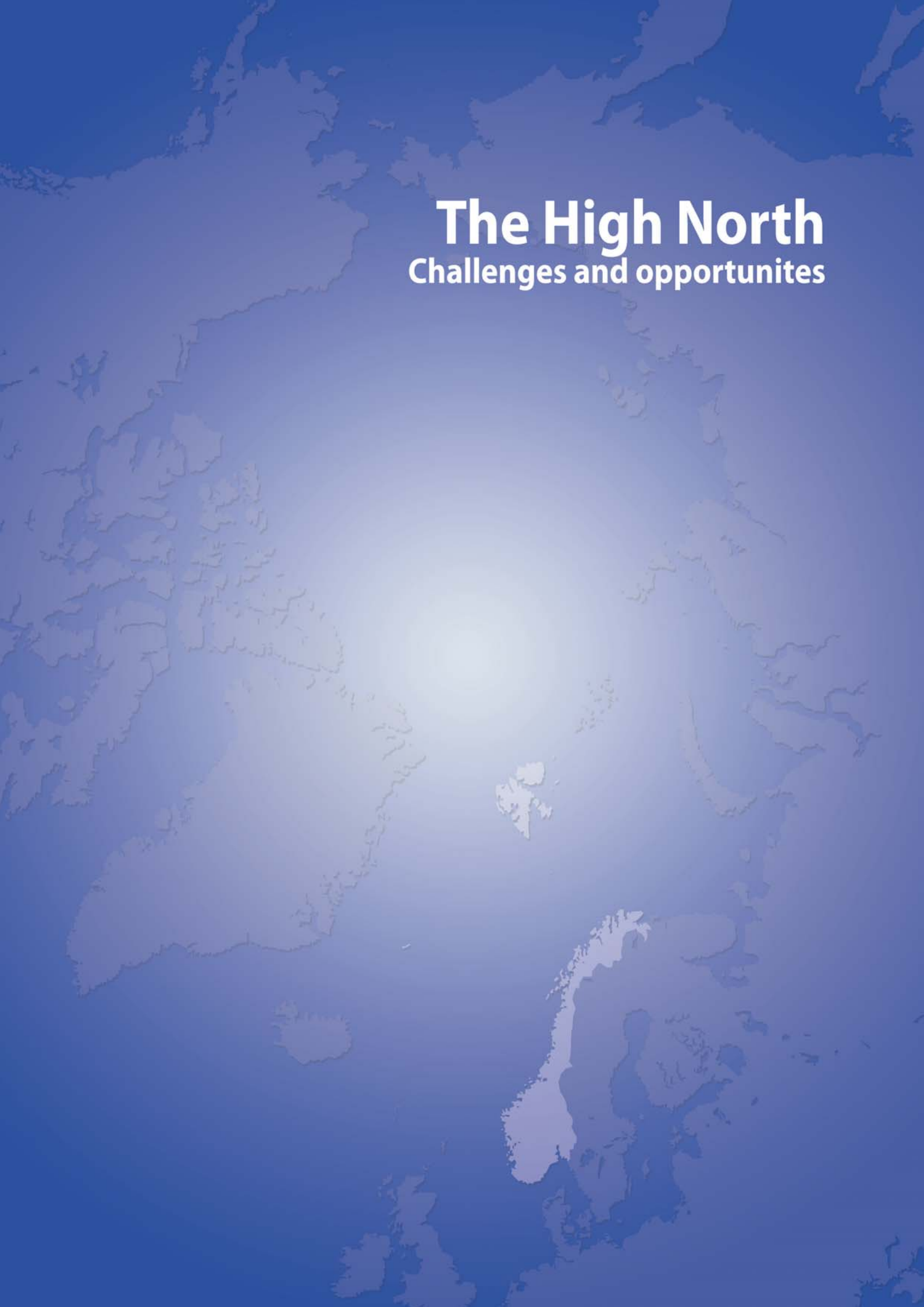
The Government presupposes that these ethical guidelines will be developed in accordance with the current state of the law, and that it will therefore not be necessary to establish new rights.

7.4 Developing digital infrastructure for indigenous languages

The indigenous languages in the High North are threatened, and the use of modern technology to develop these languages poses a considerable challenge. The indigenous languages of the High North are essential for transmitting the unique knowledge of the Arctic way of life, communities and livelihoods. These languages must be documented, preserved and made accessible for general use in order to prevent them from dying out. The University of Tromsø has built up expertise in the documentation and preservation of minority languages, and has developed modern technology for language development. With a view to making these languages accessible in an effective, user-friendly way, the Government will implement a programme to develop digital infrastructure for indigenous languages in the High North, with a focus on minority languages in northwestern Russia.

7.5 Strengthening the capacity and competence of Sami institutions

In order to ensure satisfactory and equitable development in the High North, the indigenous peoples must have the opportunity to participate in political, social and economic processes. They must be enabled to build up their own capacity and competence so that they can exert real influence and participate fully in this process. This includes the opportunity to participate actively in international and cross-border regional cooperation. In order to ensure their participation and engagement in the development of the region, the Government will implement measures to facilitate capacity and competence building, particularly at institutions engaged in research and education on Sami issues and knowledge, business and cultural development. The Government will provide support for the establishment of a centre for Sami research and competence building on the Kola Peninsula in Russia. The Government will initiate a study of Sami knowledge development with a view to identifying the most important challenges facing Sami higher education and research in a High North perspective.



The High North
Challenges and opportunites

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COOPERATION IN THE HIGH NORTH

The Government plans to develop new knowledge, promote industrial growth, increase the level of employment, improve living conditions and conserve the environment, renewable resources and the multi-ethnic community of the High North. This will help to consolidate Norway's international position as a responsible and significant actor in the High North.

INTRODUCTION

The awareness of Norway as Europe's northernmost country characterises both the way we perceive ourselves and the way others perceive us. As a nation, we are associated with the sea and with icy coasts, perilous expeditions, heroes of polar exploration, winter sports, snow and ice. Of course, Norway is much more than this, but the elements that distinguish one from other people often contribute most to forming one's identity.

At the same time, this identity reveals something about our merits and about what the outside world expects of us. We have always been involved in the High North, often in cooperation across national borders.

Northern Norway occupies an important place throughout the history of Norway. In the age of migration, Hålogaland was already an organised political entity with extensive international trade links. One of our oldest reliable accounts of a Norwegian concerns the voyage of the chieftain Ohthere to Bjarmaland. The people of Hålogaland and the Lade earls who were their descendants played a prominent role during the unification and christianisation of Norway, and several of the important export products we know from the earliest times came from the north of Norway. For more than a thousand years, Northern Norway has been the most densely populated area so far north in the world.

While, in other parts of Norway, a multi-ethnic community is a recent phenomenon, Northern Norway has been multi-ethnic throughout its history. The indigenous dimension is an important element of the High North policy. In the north, people have had close contact with other ethnic groups, such as Pomors and Karelians.

It is our responsibility to look after the opportunities of the High North for the benefit of those who live there, but also for the country as a whole, and in cooperation with other countries and peoples. This must be done by means of targeted measures to secure our presence in the north, promote activity and develop new knowledge. This is the goal of the Government's High North strategy. By securing development in Northern Norway,

Photo: Johan Wildhagen/ Innovation Norway

we can also safeguard Norway's international role as a significant actor in the High North, and further develop this in a new era.

INTERNATIONAL COOPERATION

In international terms, the High North is in many ways synonymous with the Arctic, an area of the sea for which many countries show increasing interest. In order to regulate activities, protect traditions and distinctive characteristics, and ensure that developments take place for the benefit of all inhabitants of the High North, it is important that we cooperate well in international and regional organisations, as well as bilaterally with our neighbours and countries that border the Arctic.

The High North

No precise definition of "the High North" has been provided in the Norwegian political debate. The horizon is broader than Northern Norway and Svalbard since Norway has major interests to safeguard in a greater region. When the Government's High North Strategy was developed in 2006, the High North referred to the areas surrounding the Barents Sea. This is really a Norwegian perspective. With regard to closer international cooperation, we must bear in mind that the High North is gradually becoming more synonymous with the Arctic.

We Norwegians must broaden our horizon if we want to be involved in developing a sound policy for the High North in the future.

International interest

The melting of ice in the Arctic is the key factor driving an increased international interest in the High North. Just a few years ago, no-one envisaged how rapidly the ice in the Arctic Ocean would recede, exposing open seas. The Arctic is the first place where major consequences of man-made climate change are visible. And these consequences enable the prediction of increased human activity in the Arctic in at least three areas:

First, the Arctic is a unique platform for observing climate change and researching into the causes and consequences, not only for the Arctic, but for the whole earth. It will be necessary to intensify research activities.

Second, we will see a considerable increase in ship traffic as the ice recedes. The volume of cruise traffic is already rising, and it will not be long before we see the first commercial voyages with cargo vessels through the Arctic Ocean. These completely new shipping lanes will almost halve the distance between Western Europe and Asia.

Third, the petroleum deposits in the High North will become more accessible. Although oil and gas activities in Arctic regions are very demanding, part of the enormous petroleum resources are expected to become more easily accessible as technology improves and the polar ice recedes.

These changes confront us with major challenges with regard to the monitoring of ship traffic and the environment, search and rescue capacity and oil spill preparedness.

The states in the High North face a number of common responsibilities. How are we to regulate these activities, and what standards shall apply? How are we to provide for sound living conditions for the population, preserve traditions and distinctive characteristics and ensure that developments take place for the benefit of all inhabitants of the High North?

The international order

The Arctic - the area surrounding the North Pole - is not a land area like the Antarctic, but an ocean. The land areas that border this ocean are not a no man's land, but have a long history of human activity. They are more or less inhabited, and are undisputed parts of established states.

Cooperation via the United Nations and respect for international law are cornerstones of Norwegian foreign policy, and it is within the framework of the United Nations and international law that the legal framework for relations between the states of the High North is established. The United Nations Convention on the Law of the Sea of 1982 and provisions adopted pursuant to this convention provide clear rules governing the approaches to be adopted by states in resolving unsettled territorial claims and in regulating fishing on the high seas. Only now are these provisions being followed up and brought into force, since significant operations in the Arctic have not previously been possible.

Of course, most of the practical cooperation on current issues in the region takes place at levels other than the global. Where appropriate and desirable, two states can cooperate directly. An example of this that deserves special mention is the bilateral cooperation between Norway and Russia on managing the fishery resources of the Barents Sea. Since 1976, our two countries have operated a joint Fisheries Commission, which meets annually to set the quotas for the various fish species. It has been agreed that fishing vessels have a right to fish domestic quotas in the other party's area of jurisdiction outside the 12-mile limit provide that they respect the statutes and regulations that apply to the area concerned. This cooperation has developed from purely regulative measures to encompass management strategies, marine research and control issues. However, issues that apply to several countries in the region are best dealt with by multilateral organisations where all of the affected countries participate.

Regional cooperation organisations

All countries with territory north of the Arctic Circle (Norway, Denmark/Greenland, Finland, Iceland, Sweden, Canada, the USA and Russia) are members of the Arctic Council. This organisation has been particularly engaged in research and environmental studies. Studies to which the Arctic Council has taken the initiative have been of major importance for the conclusions of the Intergovernmental Panel on Climate Change (IPCC). This year, the UN Climate Summit in Copenhagen has an important place on the agenda. At the Arctic Council's Ministerial Meeting in Tromsø in April 2009, Norway handed over the chairmanship to Denmark.

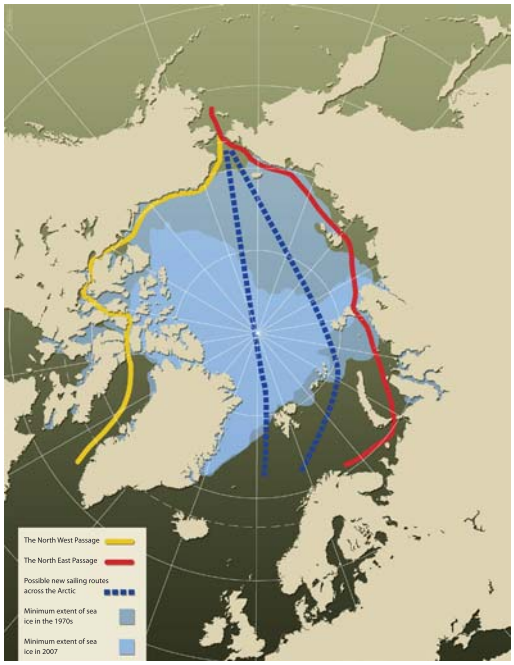
The Barents cooperation was established in 1993 on the initiative of Norway. Participants include the Nordic countries, Russia and the European Commission. The Barents cooperation is not one international organisation, but two, the Barents Euro-Arctic Council (BEAC) and the Regional Council. Each year, the foreign ministers meet in the Barents Euro-Arctic Council. The Regional Council gathers the chairmen of all of the counties in the Barents region. Participants are Nordland,

Troms and Finnmark in Norway, Norrbotten and Västerbotten in Sweden, Lappland, Uleåborg and Kajanaland in Finland, and Murmansk, Karelia, Arkhangelsk, Nenets and Komi in Russia. This way of organising a regional cooperation is totally unique.

The Barents cooperation has helped to bring together the people of the High North across national borders. Many thousands of people have participated in projects and events under the auspices of the Barents cooperation. There is cooperation in areas such as economics, trade, energy, culture, education and research, indigenous peoples, youth, health, the environment, rescue services, transport and communications and tourism.

The Northern Dimension is a new body, and its first Ministerial Meeting was held in October 2008. The concept "the Northern Dimension" arose when Finland and Sweden joined the EU. The cooperation that took place under this initiative has now formed the basis of an international organisation where the EU, Russia, Norway and Iceland are all members. This cooperation is concentrated around health and the environment, transport and logistics. The Northern Dimension may prove to be a valuable forum since it covers the Baltic Sea region, the Barents region and the Arctic.

Ice melting and transport routes in the High North



Important roles are also played by other fora. The Nordic cooperation plays a key role by virtue of its neighbouring area policy and information activities in neighbouring regions and through its various support and funding schemes. The EU makes a major contribution through its extensive funding schemes and through the support of European countries with considerable resources. NATO is present and must continue to be present in the High North, where the main task of the organisation is to help in maintaining stability and predictability and to preserve the low level of tension that has traditionally characterised the region.

Arctic strategies

Owing to the growing interest in the High North and the Arctic shown by all affected states, more countries and organisations have recently begun to address the question of the requisite policy in these areas. Some have developed policy documents, generally referred to as Arctic strategies.

The European Commission presented its strategy document in December 2008. This places particular emphasis on three main objectives: protecting and conserving the Arctic in agreement with those who live there, promoting sustainable use of the resources of the Arctic

and helping to improve collective solutions for administration of the area.

In January 2009, the US's strategy was presented. This notifies a closer US involvement in Arctic issues, making use of the established cooperative structures in the region. Canada too has ambitious plans for strengthening its presence in its extensive northern areas, particularly regarding research and the ability to operate in the Arctic climate.

Approximately half of the coastline towards the Arctic Ocean belongs to Russia, which considerably developed its presence and activities in its northern areas between the wars and after World War II. Russia has major, legitimate interests in the High North, and is expected to present an Arctic strategy in the near future.

The Government's High North Strategy

The Government's High North Strategy was presented on 1 December 2006, and Norway was thus early in developing such a strategy. The Government's Expert Committee on the High North, which was appointed in January the same year, played an active part in the preparations.

Seven main priorities of the High North Policy were defined by the strategy. These were: 1) good governance, 2) knowledge development, 3) sound management of the environment and resources, 4) facilitating development of petro-leum activities, 5) safeguarding the livelihoods and cultures of indigenous peoples, 6) further developing people-to-people cooperation, and 7) strengthening cooperation with Russia.

An overall goal is general strengthening of the economic base in this part of the country and providing for sound economic and social development, safeguarding settlements and creating the best possible living conditions for the people of the High North. The strategy also defined 22 specific action points for initiating follow-up of the main priorities. To date, most of these action points have either been implemented or started. A list of the action points and the status as regards implementation is given at the back of this document.

The strategy makes no distinction between foreign policy and domestic policy. Measures include both intensification of the dialogue with other countries and stressing of Norwegian views on High North issues in international fora, as well as a number of domestic measures in Norway. The idea behind this is that the progress made at home and abroad provides mutual reinforcement. Relations with Russia occupy a special place. Norway aims to develop its cooperation with Russia on the basis that our two countries have an objective common interest in practical cooperation.

The Norwegian Embassy in Moscow. Photo: Barents Secretariat

Minister of Foreign Affairs Jonas Gahr Støre and Russia's Minister of Foreign Affairs Sergej Lavrov exchange the documents for commencement of the Varangerfjord agreement of 2007. The agreement is the first border agreement between Norway and Russia since 1957, and it establishes the border between the two countries in the Varangerfjord area. The meeting was held in Kirkenes in June 2008. Photo: Torgrim Rath Olsen, Nordlys

Enforcement and presence

A natural consequence of greater activity and growing interest from many quarters is that coastal states take a more proactive view of issues concerning presence, the exercise of sovereignty, monitoring, intelligence and control. The Norwegian Coast Guard plays a crucial role in ensuring sustainable use of fishery resources. Provision of sufficient resources has helped to ensure the reduction of illegal fishing in recent years, and the Coast Guard will continue to focus on combating this.

The Norwegian defence establishment has traditionally played a key role in our presence in the High North, and this will be at least as important in the years ahead. The long-term plan for 2009–2012 for the Norwegian Armed Forces contains important High North measures, such as establishment of a new Operational Command Headquarters at Reitan outside Bodø, the movement of the Army Command to Bardufoss and stationing of maritime helicopters there, and the strengthening of the army in the High North. Modernisation of maritime patrol planes and phasing in of new naval vessels will also strengthen our presence in the northern seas.

Strengthening of the Sør-Varanger Garrison in Finnmark and the new border control station at Storskog are important, and also provide for the best possible border surveillance in accordance with our Schengen obligations and the most effective border crossing for an increasing number of persons.

GOOD NEIGHBOURLY RELATIONS WITH RUSSIA

Since the 1990s, Norway and Russia have developed closer neighbourly relations in the border areas. There is sound and broad cooperation within research and education and within trade and cultural exchange. Good neighbourly relations in many areas are also of fundamental importance for information exchange and for cooperation on resource management.

Contact between people

Norway and Russia are in the process of developing close neighbourly relations. Whereas, in 1990, no more than a couple of thousand people passed the border between our two countries, in 2007 the number was almost 109 000. Visiting NGOs, choirs and school classes all have something to learn from each other. Norwegian and Russian researchers cooperate in fields from medicine to marine biology and linguistics. Companies cooperate across the border, and invest in each others' countries. The prospect of increased oil and gas activities in the Barents Sea and the plans for new mining activities in Sør-Varanger further increase the importance of border crossing and labour migration.

The Government envisages a Norwegian-Russian border that functions as a bridge for cooperation between our two peoples. Norway has done a great deal to improve the efficiency of visa processing and to facilitate border crossing for Russian nationals. A "Pomor visa" has been introduced, which provides inhabitants of Murmansk and Arkhangelsk with the possibility of obtaining a visa without having an invitation. The processing time for visas at the Norwegian consulate general in Murmansk has been reduced to five days, and structural improvements have been made to the border control station at Storskog in order to improve the efficiency of border crossing.

On 1 December 2008, a new Norwegian-Russian agreement on simpler visa processing entered into force. The agreement reduces documentation requirements, sets limits for processing time and fees, and makes it simpler to obtain a multi-journey visa. The Government is continuing its efforts to make it easier for both skilled and unskilled workers to cross the national borders in the Barents region.

In June 2008, the foreign ministers of Russia and Norway agreed to attempt to establish a border resident ID card. The Schengen rules do not permit the abolition of visas between countries for all citizens, but allow for border resident ID cards. Such ID cards allow visa-free border crossing for permanent residents who live within 30 kilometres of the border. Negotiations with Russia on this began in August 2008, and are expected to take some time.

Cooperative projects and exchange

A number of ministries administer allocations that are more or less earmarked for cooperative projects with Russia. The Ministry of Foreign Affairs' allocation for 2009 is alone NOK 130 million (5 per cent more than the previous year) and is mainly applied to cooperation in the Barents region. The Barents Secretariat in Kirkenes administers almost 30 per cent of these funds. Transfer of knowledge and exchange of experience are important elements of the supported projects, and priority areas are people-to-people cooperation, support of civil society, environmental protection, business development, energy efficiency, health care and social welfare, and research and higher education.

Over 100 000 people now pass the border control station at Storskog each year. Photo: Barents Secretariat

A good example of a knowledge and competence raising programme is the Presidential Programme, responsibility for which in Norway is shared by the Confederation of Norwegian Enterprise and the Norwegian Association of Local and Regional Authorities. Through this programme, 30 young Russian managers are invited each year to internships in Norwegian companies and municipalities.

Considerable sums are allocated each year to cooperation with Russia on nuclear safety, for

2009 approximately NOK 100 million. In 2005, the programme "Barents 2020" was started; the allocation for 2009 is NOK 35 million. The money is used to provide grants in the form of seed funds for initiating projects based on knowledge and expertise on and for the High North, and emphasis is placed on cooperation with public and private partners.

Cultural cooperation Norway – Russia
During the period 2006–2008, NOK 25 million was channelled through the Ministry of Foreign Affairs for cultural cooperation measures in Northern Norway. This was additional to the support to the Barents Secretariat. For 2009, this will be increased by a further NOK 25 million from the Ministry of Culture and Church Affairs and NOK 15 million from the Ministry of Foreign Affairs. The measures during 2006–2008 were characterised by efforts to promote meeting places and bring to the fore projects that create favourable conditions for regional involvement in the High North – and to view the significance of the cultural sector in a broader social context.

In cooperation with the municipalities of Tromsø, Bodø and Sør-Varanger, the Ministry of Foreign Affairs has held the festival Barents Days, which focuses on cultural cooperation in the Barents region and on research cooperation, youth cooperation and cooperation on business development. From 2008, Barents Days has been made part of the culture festival Barents Spektakel in order to strengthen the local roots of the event and draw more attention to it. Barents Spektakel is run by Pikene på Broen, a company of art curators and producers based in Kirkenes.

In January 2009 Norway's and Russia's Ministers of Culture signed an action plan for cultural cooperation in the High North. The plan is to lead up to the first Norwegian-Russian three-year plan for cultural cooperation with a focus on the High North (2010–2012). The plan is intended to ensure better coordination of cultural investments at national and regional levels.

Barentskult was established in 2008 as a cultural fund and to encourage Norwegian-Russian cultural cooperation in the Barents region. The fund is owned by the county authorities, but also receives support from the Ministry of Culture and Church Affairs and the Ministry of Foreign Affairs. The Barents Secretariat has the practical responsibility in cooperation with the Sami Parliament and the Sami organisations.

Established festivals in the region have also been provided with funds for strengthening their network building in north-western Russia. From 2009, the festival Riddu Riddu has been granted focal-point status. For the Ministry of Foreign Affairs, it has also been important and natural to encourage international contact between Northern Norwegian culture with areas outside the region. This is essential for making the cultural sector even more robust. It also underpins natural cross-border relations in the High North, and helps to create cultural and human understanding across important national borders.

CULTURAL EXCHANGE

The Norwegian-Russian company of art curators and producers Pikene på Broen builds bridges across national borders by creating an interest in culture and policy in the High North. The

company is based in Kirkenes and has held the culture festival Barents Spektakel since 2004. The festival receives 5000 visitors each year, and is the only cultural festival of its kind that receives the support of the Ministry of Foreign Affairs. The festival is intended to be a meeting place, where musicians, artists and actors cooperate and create lasting ties across national borders.

We live on a border that has changed enormously since our neighbouring country was known as the Soviet Union. At that time, it was practically impossible to have contact with people on the other side. Border means many things. One can talk of both physical and mental borders, said Inger Blix Kvammen of Pikene på Broen in an interview with the Norwegian weekly newspaper Ny Tid.

The concerts at Barents Spektakel often combine artists from Norway and Russia or Finland, so that the audience receive cultural impressions from at least two countries.

TransBorder Café, which is held as part of the festival, is a concept involving presentations and debates on the challenges and development of the Barents region. There are contributions by artists, researchers and politicians. In 2009, the concept was also held in Nikel in Russia, where Barents Spektakel held a satellite festival.

The exhibition Pan-Barentz is part of the Barents Art Triennial, arranged by Pikene på Broen in cooperation with 0047 (Oslo), the University of Lapland (Rovaniemi), Koncentrat (Kiruna) and Anadolu Kultur (Istanbul). Here, the identity of the Barents region is explored by means of a collage of approaches and interpretations across national borders and disciplines. The exhibition will travel from Oslo to Tromsø, and during the next two years, will go on to Rovaniemi, Helsinki, Murmansk and Moscow.

The company of art curators and producers Pikene på Broen crosses a symbolic border on the frozen Pikevann at the Norwegian-Russian border. The performance was part of the festival Barents Spektakel in February 2008. Photo: Gustav H. Almvik

–This year's triennial is about the identity of the Barents region. Fifteen years after the start of the Barents cooperation, we ask whether there is such a thing as a common Barents identity, whether we can talk of Barents citizens or still only Russians, Norwegians, etc. said Luba Kuzovnikova, the Art Director of Pikene på Broen to the Tromsø newspaper Nordlys.

Eighteen artists and architects have been invited to throw light on various issues concerning Barents identity at present and in the future. They will also discuss the meaning of urbanism in the High North.

THE REGION OF OPPORTUNITY

Knowledge, innovation and exploitation of the inherent advantages of the region are key elements of the Government's plan for strengthening economic growth in the High North. We want to promote bridge building between research and industrial activities. Increased wealth creation is largely dependent on a well developed and well functioning infrastructure. Better transport and communications in Northern Norway will make it easier to live and do business in the region and to visit it as a tourist.

INTRODUCTION

In addition to providing for petroleum activities, the Government targets support of industrial activities in the High North. Knowledge development and innovation are of key importance to exploiting the distinctive natural resources of the High North. The Government therefore wants to make provisions for those who want to take advantage of business opportunities provided by research results. The Government encourages the business sector to look for profitable projects in research results, and encourage researchers to discover the commercial value of their research. Fruitful cooperation between the research and business sectors will improve the competitiveness of Norwegian companies, and contribute to economic growth in the High North. In the long term, this may create new industries.

The Government wishes to exploit the commercial potential of marine bioprospecting. Here, the cooperation between research and business development is all-important. Tourism and entrepreneurship in Northern Norway are also key elements of the Government's focus on the business sector in the High North.

Of course, there is already considerable wealth creation in Northern Norway. However, travel distances are considerable, including the distances to the markets. Increased wealth creation is therefore largely dependent on well developed and well functioning infrastructure. The Government therefore gives priority to targeted upgrading of infrastructure such as trunk roads, railways, airports, shipping routes and fishing harbours. Business development, particularly development of infrastructure, is long-term work that requires thorough preparations.

Photo: To-Foto/Hurtigruten

The hermit crab, Pagurus pubescens, contains substances with properties that may be useful for research and industry. Photo: Marbank/R. A. Johansen

WEALTH CREATION

Resources distinctive to the High North can be developed and sold. Innovation in areas such as exploitation of small molecules from marine organisms and experience of the great outdoors can provide good business opportunities.

Marine bioprospecting: Molecules for sale

Fish, oil and gas have made Norway's sea areas a major source of wealth. However, the genetic material of marine animals, plants and bacteria may also be of great value. This particularly applies to small organisms that have developed substances that tolerate temperatures close to freezing point and withstand attacks by and competition from other sea creatures. Some of these substances consist of molecules with unique properties. This can be exploited commercially and in a number of areas of research, from medicines for cancer treatment to methods for extracting a greater proportion of oil deposits by pumping micro-organisms into the wells on the seabed.

Prospecting for and research into marine organisms with unique properties is called marine bioprospecting. There are major opportunities for developing commercial products from research in this area. The Government hopes that marine bioprospecting may become a significant growth industry and an important part of a future knowledge-based economy both in the High North and in the rest of Norway.

The road from discovery of a bioactive substance to the mapping of properties and further to industrial application may be long and hard. In order to further this process, the Government wishes to strengthen the co-operation between research institutions, the business sector and the public sector, and to create sound framework conditions to ensure that the potential of the industry can be realised. For example, the marine biobank Marbank has received public support for gathering marine organisms from coastal and sea areas of Northern Norway and Svalbard. The initiative for the establishment of Marbank was taken by the Institute of Marine Research at the University of Tromsø, the Norwegian Institute of Fisheries and Aquaculture and the Norwegian Polar Institute, with the support of the Ministry of Fisheries and Coastal Affairs, among others.

An international conference on marine bioprospecting was held in Tromsø in February 2009.

– Why is marine bioprospecting important? Substances developed by marine organisms to defend themselves against predators in the sea may in the future be used to fight cancer cells in humans. In the High North the sea contains molecules with properties that may be of major importance for production of medicines.

The Government launched Norway's first national strategy on marine bioprospecting on September 8, 2009. Its vision is "Marine bioprospecting – a source of new and viable wealth creation". Its purpose is to better organize the utilization of our ocean resources. The Government will invest in national infrastructure and research that stimulates a broad spectrum of opportunities for wealth creation.

Promoting innovation

Knowledge development and innovation are key to exploiting natural resources distinctive to the High North. The Government therefore wishes to make provisions for those who want to take advantage of business opportunities provided by research results. The Government encourages the business sector to look for profitable projects in research results, and encourages researchers to find the commercial value of their own research. Fruitful cooperation between the research and business sectors will improve the competitiveness of Norwegian companies and contribute to economic growth in the High North. In the long term, this may create completely new industries.

Lecturers from the University of Tromsø cooperate with the University of Gothenburg on training young entrepreneurs. Photo: University of Tromsø

Educational institutions play a key role in bridge building between the research and business sectors. In cooperation with the University of Gothenburg and Chalmer's University of Technology, the University of Tromsø has established a two-year masters programme in Arctic entrepreneurship. On the basis of a Swedish model, teaching will be provided in business development and entrepreneurship. At the same time, the students will be given the opportunity to start companies on the basis of research or other viable concepts. The combination of classroom teaching and enterprise development is intended to provide favourable conditions for a culture of entrepreneurship and innovation.

Outdoor adventures for sale

The tourism industry is in process of becoming a key industry in Northern Norway, particularly in what is referred to as ecotourism or geotourism. This is tourism based on nature, culture and adventures, and is specially adapted to conser-ving the environment and cultural heritage. Visitors enjoy the distinctive attractions

The snow hotel in Kirkenes offers guests a warm experience in cold surroundings. Photo: Geir Moen/gofoto.no

of this part of Norway: watching killer whales break the surface of the water, seeing reindeer or going out onto the mountain plateau to view the Northern Lights in all their glory. In 2008, an adventure holiday in Sør-Varanger involving a stay at a snow hotel, a reindeer safari and fishing for king crabs was voted one of the world's 25 best new package tour concepts by National Geographic Adventure Magazine. This is an example of how visionary tour operators can delight tourists by tailoring adventures and activities to take advantage of the unique outdoor experience of the High North.

- What has the Government done?
The Government attaches importance to the development of innovative tourism, and to promotion of Northern Norway and Svalbard as tourist destinations. In 2007, the Government launched a national tourism strategy aimed at promoting Norway as a destination for sustainable tourism, and at developing the tourism industry to support regional economy.

TOURISM: THE KING OF KING CRABS

Lars Petter Øie thrusts his head out through a hole in the ice. Clad in a survival suit and diving equipment, he is holding an enormous king crab. He gives it to one of the guests on the king crab safari, then hauls himself out of the water and onto the ice. Øie's Arctic safari is part of a larger adventure holiday package in Sør-Varanger municipality that includes a stay in a snow hotel and a reindeer safari.

Øie is a tourism entrepreneur who has been as far as the USA to promote his "Arctic Adventure Resort" in cooperation with Innovation Norway and the Norwegian Embassy in Washington. He has also been featured in a combined food and travel programme broadcast by the BBC. In Kirkenes, the great outdoors is a magnet for tourists from all over the world. North of the Arctic Circle, visitors can stay at a hotel made of snow which is rebuilt every year, visit a reindeer park, admire the Northern Lights and try their hand at sea rafting, diving, kayak paddling or dog sledging. Perhaps the most exotic pastime is king crab hunting.

– Crab claws are very powerful, so you must be careful when you go diving for your dinner. It is best to sneak up behind them and grab them by their back legs, says Øie.

Guests who hold divers' licences are allowed to dive with Øie to catch their own crabs. Those who don't can enjoy the culinary experience of king crab cooked in seawater and served with avocado and garlic dressing, bread, lemon juice and pepper.

– King crab meat is one of the best things the sea has to offer. People come here from all over the world to catch this delicacy with their own hands, and enjoy it fresh from the sea, says Øie.

A full-grown king crab can measure almost six feet across, and weigh as much as 30 pounds. Since 1960, when researchers in the Soviet Union introduced the species to the Barents Sea close to the Norwegian border, millions of king crab have migrated west. Entrepreneurs such as Øie exploit the opportunity to pick the crab right off the ocean floor, and gladly offer this experience to adventurous tourists.

Lars Petter Øie reaches a freshly caught king crab to guests during the crab safari in Kirkenes. Øie's king crab safari is part of Sør-Varanger's award-winning adventure holiday package. Photo: Jørn Tomter

BETTER TRANSPORT AND MOBILITY

Northern Norway is characterised by great distances, and markets are often far away. Wealth creation in the High North is dependent on a well developed and well functioning infrastructure including postal and telecommunications services, roads, airports, railway connections and harbours. The Government's transport plan for the coming years is one of the cornerstones of the High North policy.

Important for the welfare of the inhabitants and for business and industry

In spring 2009, the Ministry of Transport and Communications will present improvements of roads, harbours, railways and airports for the whole of Norway in connection with the submission of the national transport plan for the period 2010–2019. The plan's measures for Northern Norway must be viewed in relation to the focus on the High North. The Government proposes a further strengthening of transport and communications in the High North. This publication was issued prior to the publication of the national transport plan, when details of these measures were made public.

Safety, mobility, environmental protection and efficiency are all key elements of the Government's transport and communications policy for the High North. Efficient transport, postal and telecommunications services are crucial to the safeguarding of settlements and a viable business sector. Effective and safe means of travel and transport are essential to people's welfare, transport of goods such as fish to the markets, tourism and the future economic growth of the Barents region in general.

Improved access to international markets is dependent on strengthening of transport connections between east and west in the High North as well as good connections with

the south. The road network in the three northernmost counties covers enormous distances. It is over 1600 kilometres on the E6 from Kirkenes to the county boundary between Nord-Trøndelag and Nordland. The distances and settlements along the coast underline the importance of sea transport too. Almost 50 per cent of the goods transported from Tromsø to Finnmark go by sea. Positive developments in the High North are also dependent on telecommunications and Internet connections of satisfactory quality and capacity to carry large amounts of data, adapted to new functions and services. Infrastructure cannot be developed overnight. Arriving at the right decisions is dependent on long-term efforts demanding thorough surveys. The national transport plan 2010–2019 is part of this work.

Simpler transport and communications in the border areas

As part of work on the national transport plan 2010–2019, the Ministry of Transport and Communications is reviewing a report presented by a Norwegian-Russian working group that has recommended measures to improve transport and communications in the border areas. The group was appointed on the initiative of the Norwegian Minister of Transport and Communications and the Vice-Governor of the Murmansk region, and represents state and regional authorities in the Murmansk region and Northern Norway.

The working group recommends, among other things, the planning of improvement of the stretch of highway between Borisglebsk/Storskog and Elvenes. The group recommends that the work be carried out from 2010 to 2013. Such an improvement would ensure a good standard on the Norwegian side of the border, compatible with the improvement of the stretch of road from Murmansk to Borisglebsk, due to be completed in 2010.

The report also proposes an overall plan for land management and physical infrastructure in the Kirkenes area.

The report also takes up the need to improve the trunk road network in Finnmark and Troms in the direction of Russia and Finland. Such an improvement will help to strengthen the communications between Russia and areas further west and south in Northern Norway.

Improving the road network

The challenges regarding improvement of the road network primarily concern improvement of narrow, winding stretches that are difficult to use during the winter, or which are subject to landslides. The E6 is the main land transport route in Northern Norway. In the coming years, the Government will invest in improvements to the national road network, i.e. the E6 and a number of national roads that cross the borders with Sweden, Finland and Russia. It is important to ensure good road communications with neighbouring countries. In the 2009 budget for the Ministry of Transport and Communications, funds have been allocated to the planning of upgrading of the E105 and roads in the Kirkenes area. This planning will be carried out as part of the Norwegian-Russian cooperation on infrastructure in the border areas.

Expansion of railway capacity
The Government will expand the capacity of the Nordlandsbanen and Ofotbanen railways. It is aimed to develop the railway to carry more of the goods transport to and from Northern Norway. Movement of goods transport from the roads to the railways will result in lower emissions of CO2, more efficient transport and increased road safety.

There has long been considerable local and regional interest in connecting the Russian railway to Kirkenes harbour by means of an extension of the railway line from Nikel to Kirkenes. However, such a railway connection would be very costly, and it is therefore a condition for building it that the Russian business sector expresses a need for and an interest in shipping a large volume of goods via Kirkenes harbour. There are currently no indications that the Russian business sector has such a need or interest, since the Russians prefer to use their own harbours. The Government therefore views such a development as somewhat improbable.

Air transport is important
Since 2006, more than NOK 1 billion has been invested in upgrading safety measures and extensions of facilities for the public at Northern Norwegian airports (including Svalbard). Northern Norway already has an extensive air service network, with scheduled traffic at a total of 28 airports, including Svalbard and the heliport at Værøy. Finnmark alone has 11 airports, three medium-sized and eight regional.

Ticket prices for domestic and international flights from major airports have fallen sharply in recent years. In order that passengers on the short runway network in Northern Norway shall benefit from this, the Government reduced ticket prices for flights on the short runway network in Nord-Troms and Finnmark by 20 per cent in April 2007.

The Government gives priority to improvements to the trunk road network in Northern Norway, particularly narrow, winding roads, roads that are difficult to use during the winter, and roads subject to landslides. The picture is from the stretch of highway from Nikel to Kirkenes. Photo: Barents Secretariat

The increasing importance of harbours
As a consequence of climate change, transport developments in the High North will result in a longer sailing season, the possible opening of new shipping routes and easier access to northern harbours. In view of this, the Ministry of Fisheries and Coastal Affairs has requested the Norwegian National Coastal Administration to coordinate cooperation between northern harbours in order to develop possible solutions to common challenges.

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WEALTH CREATION FROM OIL AND GAS

Europe is in the process of acquiring a new energy province: the South Barents Sea – the sea north of the Norwegian mainland. Petroleum activities in the High North may in the long term have major positive, regional and national ripple effects. The Government will make provisions for petroleum-based employment and wealth creation in Northern Norway.

INTRODUCTION

If we move the map a little, we can place the High North in the centre. The High North is a kind of new centre, not just on the map, but as a resource area. The fisheries of the High North are among the richest in the world, and must be managed so that they are there for future generations. We now see that the presence of oil and gas deposits also open up the Barents Sea as a new European energy province. Exploiting the opportunities of the High North is one of the most important components of the Government's High North Strategy. Responsible exploitation of these resources will help to safeguard the welfare of future generations.

In October 2007, Norway's first cargo of liquid natural gas was able to leave Melkøya. The Government provides for exploration activities, development and other oil and gas activities in Northern Norway. Via the Research Council, the Government channels considerable funds to provide for this.

It is important for the Government that the development of new oil and gas fields results in increased productivity in Northern Norway and in the rest of the country. Exploitation of the petroleum resources of the High North must support the positive developments in the High North. Petroleum activities will be a major driving force for new technology-intensive activities in Northern Norway. In order to bring this about, an industry must be built up in Northern Norway that can position itself both nationally and internationally.

Through dialogue and mutual respect, solutions can be found enabling the different users of the sea to live side by side in the same waters, and, each in their own way to contribute to exploitation of the natural resources of the High North.

Photo: Dag Magne Søyland/ StatoilHydro

Activity in the Barents Sea. Photo: StatoilHydro

FACILITATING DEVELOPMENT

The geological mapping of possible petroleum deposits in the High North will be completed in 2009. The Government will allow Northern Norwegian industry to position itself so that local and regional suppliers can benefit from developments.

The starting shot for establishment of petroleum activities in the South Barents Sea was fired at the start of the development of the Snøhvit field in 2002. The field, which became operational in 2007, is important for several reasons. It is the first gas development in the Barents Sea and the first plant for liquid natural gas in Norway. Snøhvit will in many ways be a driving force for developments in the High North throughout the 30-year lifespan that has been estimated for it. In the course of time, Goliat and Nucula, as well as new future finds will become operational. This will help to ensure petroleum activity in the Barents Sea for many years ahead.

The High North is a new and very important European energy province. In addition to Norway, several other countries are now opening up prospects of exploiting the resources of new areas of the sea. It is important to ensure responsible exploitation of the resources of the sea in the High North.

Exploration is the very precondition for making new finds, developments and activities. An increasing number of companies wish to take an active part in this. The Government's High North Strategy of 2006 states that the Government will "further develop petroleum activities in the Barents Sea through an active allocation policy in order to follow up results of exploration and the need for further exploration acreage. The Government will also provide for increased geological mapping of the High North." In order to follow up the High North Strategy, NOK 410 million have so far been allocated to geological mapping. In 2009, this work will be complete. We will then have the necessary knowledge base to consider opening new fields in this the area. Considerable interest and optimism is currently attached to petroleum activities in the South Barents Sea. The Government's focus on knowledge in the High North is also part of this provision. More than half of the Research Council's High North allocation, measured in terms of state research funds, is applied to petroleum activities in the High North.

Positioning of North Norwegian industry

The petroleum industry employs people throughout Norway. However, there are fewer specialised suppliers in the High North. The Government wishes to increase the ripple effects of petroleum activities. Petroleum activi-

ties in other areas of Norway have shown that it takes time to establish specialised suppliers. However, it is clear that coordinated efforts at several levels can help to amplify the ripple effects of petroleum activities. Experience shows that proximity to the activities results in establishment of new industry.

In the work on ensuring direct ripple effects of the oil and gas activities in the High North, the Government will make provisions for Northern Norwegian industry to position itself. It is important that industry acquires sufficient expertise and market networks to be able to compete with the business sector in other areas of Norway. Moreover, international and national industry must establish departments that employ local manpower. This is dependent on the existence of qualified local manpower.

Analyses show the great importance of international exposure for business development and employment in outlying regions. Actors such as INTSOK and Innovation Norway make active contributions to such internationali-sation, and will also do so for Northern Norway. The Government also supports other supplier networks and commercial associations in their efforts to strengthen the capacity of Northern Norwegian companies to prequalify for complex tender processes.

INTSOK is a foundation that was established in 1997 by the Norwegian government and the Norwegian oil and gas industry to market Norwegian oil and gas industry internationally. This is done by means of various joint measures for member companies to increase their penetration of international markets.

Innovation Norway provides services and programmes that stimulate regional development, increase innovation in the business sector and promote the Norwegian business sector and Norway as a tourist destination. Innovation Norway is primarily owned by the Ministry of Trade and Industry, and also receives funding from other ministries. The organisation is represented in all Norwegian counties and has offices in over thirty countries.

SNØHVIT AND GOLIAT: POSITIVE RIPPLE EFFECTS

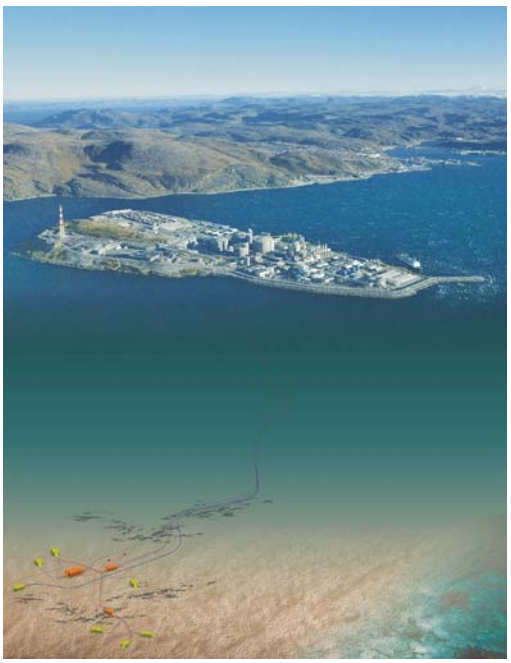
The Snøhvit field became operational in autumn 2007. This development is the first milestone of the establishment of petroleum activities in the South Barents Sea. Snøhvit is the first gas development in the Barents Sea, and the first plant for liqnified natural gas in Norway. After a five-year-long construction phase, the gas was at last able to stream from the fields in August 2007. The first ships loaded with liquid natural gas left Melkøya in October 2007.

Snøhvit has resulted in considerable local ripple effects. Hammerfest has experienced a growth in employment, population and housing. At the peak, the construction activities employed as many as 2500 persons. Operations, maintenance, modification and support services for Snøhvit have created 400 permanent jobs, and have recruited three-quarters of the workforce from Northern Norway.

There is now a shortage of manpower in the region. StatoilHydro cooperated closely on Snøhvit with local actors. The Snøhvit com-

mercial association, later known as Petro Arctic, has played an important role in bringing this about. Analyses show that Snøhvit has turned around a negative population and employment development in Hammerfest. New companies are setting up business in the town. The municipal income is expected to increase considerably. Extensive investments have been made in the upgrading of school buildings, infrastructure and development of cultural facilities. The development has resulted in competence building in the region, which has had positive effects on other industries as well.

The development of Goliat may raise the level of employment in the region too. Goliat is expected to contribute to the technological basis for further development of petroleum activities in the region.



The illustration shows the seabed installation at Snøhvit, which supplies gas to the new plant at Melkøya. Snøhvit is the first gas development in the Barents Sea, and the first plant for liquid gas in Norway. Three-quarters of the 400 people whose work is related to Snøhvit have been recruited from Northern Norway. Illustration: Even Edland/StatoilHydro

OIL ENTREPRENEUR: AN OPPORTUNITY TO RETURN HOME

Astrid Tugwell has come home. After graduating from upper secondary school, Tugwell did the same as many other people from Northern Norway: she moved south to take higher education, and has since worked outside Northern Norway, for Shell both in Norway and abroad.
– Many of us who move south long to return home. That's why it is so important to create jobs in the north, so that people can move back, she says.

Today, Tugwell works for North Energy, an oil company located in Alta. The company's mission statement is "with Northern Norwegian ownership and expertise, North Energy will provide alternative solutions for profitable and sustainable oil activities in the High North".
– When it was decided that northern areas would be opened up for oil activities, I decided to help bring this about in a proper way. We are a Northern Norwegian company, and this is happening outside our front door, so we want to be an oil company that does things in its own way.

She points out that the company is owned by Northern Norwegian industry, and that the strategy is long-term.
– We will grow gradually, and want as far as possible to recruit the necessary expertise from Northern Norway. It is therefore important for us to market ourselves to education institutions in Northern Norway. We are also making an effort to make the industry see the potential of establishment in the High North.

Astrid Tugwell has a strong belief in the company's potential for success.
– We hope to be assigned operator responsibility in the Norwegian Sea and licence interests in the Barents Sea as early as the 20th licensing round. This is important for being able to take part in shaping developments in the High North and achieving our ambition to create alternative and sustainable solutions. We have built up an organisation that is ready to shoulder major responsibilities, and we are impatient to get started.

Tugwell encourages people from Northern Norway to see the opportunities of their own region.
– I attach importance to recruiting Northern Norwegian manpower, and have met many people who are glad that there can now be more jobs in the oil industry in the north.

In Astrid Tugwell's view, one must see the oppor-tunities of Northern Norway. As Development Director of a new North Norwegian oil company, she wants to take part in ensuring that oil extraction activities in Northern Norway respect the local environment and employ the local population.
Photo: Origo/Hege E. Johansen

ENVIRONMENT, LIVELIHOODS AND FISHERIES

Norway must lead the way in the environmental area, be an active partner for other countries and a long-term and trustworthy guardian of environmental and cultural values in the High North. The Government provides for wealth creation through sustainable use of marine and land resources, while safeguarding the functioning and productivity of the ecosystem.

INTRODUCTION

In the Arctic, we find some of the largest areas on earth of virtually untouched nature. Here there are hardy species only found at the North Pole. Norway has a major responsibility, together with other polar nations, for conserving these vast and vulnerable areas.

The High North has an important role to play in maintaining biodiversity, and has increasing importance both as a destination for outdoor adventure and as a reference area for environmental monitoring and ecological research. At the same time, major political, academic and administrative challenges must be solved in the years ahead. These challenges are particularly associated with climate change, long-range pollution, environmental toxins and increasing human activity. The management plan for the Barents Sea and the sea outside Lofoten is one of the most important instruments for balancing the regard for the environment with exploitation of resources.

Climate change will acquire increasing, direct significance for management of the environment and resources in the High North, since the physical environment and the sustenance base of plants and animals is very likely to change considerably. Climate change will also affect the transport and distribution in the environment of toxins conveyed to the High North by air and ocean currents. In the longer term, an increasingly ice-free Arctic Ocean may result in new routes for the international shipping between east and west. This will also give rise to increased environmental challenges and challenges with regard to emergency preparedness and safety in the time ahead.

Norway has a direct responsibility for stewardship of large areas of the Arctic. A sound research-based knowledge base is a prerequisite for Norway's ability to manage its polar territories in an environmentally sound manner.

Illustration: iStockphoto.com/mevans

NATURE CONSERVATION

The Government attaches importance to ensuring sustainable exploitation of resources and responsible environmental management of the Barents Sea. Cooperation and the exchange of knowledge with Russia and other Arctic states must be further developed in order to preserve vulnerable species and ensure responsible harvesting of natural resources.

The Barents Sea – Lofoten

In the area of sea between the Barents Sea and Lofoten, there are sub-areas that are particularly rich in resources, while also being environmentally vulnerable. Challenges are associated with the effects of fisheries, ship traffic and petroleum activities, and with environmental toxins, radioactivity and introduced species. This particularly applies to the area from Lofoten to Vesterålen, inshore areas, Tromsøflaket, Eggakanten, the ice edge, the polar front and the sea areas surrounding Svalbard. These are areas that, on the basis of scientific assessments, are of major importance for biodiversity and biological production, and where possible injurious effects may have long-term or irreversible consequences.

Comprehensive plan for the Barents Sea and the sea outside Lofoten

A comprehensive management plan for the Barents Sea and the sea areas outside Lofoten has been developed to protect the environment while providing for profitable industrial activities. The management plan sets limits for fishing, shipping and petroleum activities in the High North in order to balance exploitation and protection.

An advisory group has been appointed to follow up the plan, consisting of an expert forum chaired by the Norwegian Polar Institute, a monitoring group chaired by the Institute of Marine Research and a risk group chaired by the Norwegian National Coastal Administration. Major programmes are being implemented for survey of the seabed (MAREANO) and seabirds (SEAPOP). The plan is due to be updated in 2010. The allocations to comprehensive management of the marine environment are being increased by NOK 3 million in 2009.

The Ministry of the Environment has entered into a dialogue with the Russian authorities in order to ensure a common understanding of sound management of the Barents Sea. Exchange of knowledge and information with Russian institutions plays a key role in this. The Russian Ministry of Natural Resources will closely examine the Norwegian experience in order to strengthen the management of its own sea areas, and thereby enable the strengthening of the overall resource management in the Barents Sea.

Polar bear conference in March 2009

Norway invited "the polar bear countries", Denmark/Greenland, Canada, the USA and Russia, to an international polar bear conference in Tromsø in March 2009. The meeting was to be held under the Agreement on the Conservation of Polar Bears that was signed by the five countries in 1973. The reason for convening the conference is the serious threat to polar bears posed by melting Arctic

sea ice and the need to cooperate more closely on management of polar bear stocks in the Arctic, particularly in a situation where the species is expected to experience increasing problems as a consequence of climate change coupled with increasing economic activity in habitats.

The polar bear is a species that has considerable symbolic importance in a climatic and environmental context. This conference must therefore be viewed as a part of efforts to create a better understanding of climate change in the run-up to the climate meeting in Copenhagen in December 2009.

New white paper on Svalbard

The Government submitted a new white paper on Svalbard to the Storting in spring 2009. The white paper addressed major new measures and approaches to conservation of the wilderness in Svalbard. This applies not least in relation to increasing traffic, particularly associated with cruise tourism in protected areas. Key measures announced in the white paper include regulation of tourism in the nature reserves in East Svalbard and prohibition of the use of heavy oil by ships with routes in the national parks.

Norway has included Svalbard on its tentative list to the UNESCO World Heritage Convention. A nomination application can at the earliest be considered by the UNESCO World Heritage Committee in 2014. These approaches clearly express an active environmental protection policy in keeping with Norway's ambitious environmental goals for Svalbard.

Ivory Gull, here photographed over the Barents Sea, is one of many species threatened by climate change and human activity in the Arctic. The Ministry of the Environment is making efforts to protect the vulnerable ecosystems in the High North. Photo: Cecilie von Quillfeldt

The livelihoods of indigenous peoples

The Barents region is a multinational cultural community including four nation states and nine native ethnic groups: Norwegians, Swedes, Finns, Russians, Sami, Komi, Vepsians, Karelians and Nenets. Peoples are bound together by their livelihoods and dependence on the natural environment, and indigenous peoples' unique experience and knowledge provides an additional dimension to this. Indigenous peoples have valuable knowledge of nature, climate, the environment and traditions. They safeguard cultural values, languages and knowledge of industries and ways of life subject to marginal conditions in a sub-Arctic area. Indigenous peoples' communities in the High North differ with regard to vulnerability and sustainability in meeting future challenges associated with ecological, economic, political and social changes. The traditional ways of life of indigenous peoples are dependent on sustainable management of natural resources.

The fishery resources of our northern sea areas are among the world's richest. The Government is continuing its efforts to reduce illegal fishing in cooperation with Russian authorities. Photo: Kjell Ove Storvik/ Norwegian Seafood Export Council

Reindeer stocks in some parts of Finnmark are currently too large in relation to the natural resource base, which in the long term may threaten the basis for sustainable reindeer husbandry. The new Reindeer Husbandry Act, which entered into force on 1 July 2007, is an important contribution to efforts to ensure sustainable reindeer husbandry in Finnmark and other parts of Norway. The Act assigns greater responsibility to the reindeer husbandry industry and gives the industry increased influence over its own development. In addition to this, a new Convention on Reindeer Pasture has been negotiated between Norway and Sweden. The Convention is expected to enter into force in 2010.

SUSTAINABLE FISHING AND SAFETY AT SEA

The Government has implemented extensive measures to combat illegal fishing in order to ensure that fish remain a renewable resource. Ice melting in the Arctic will open up new sea areas for fishing and transport. It is therefore important to extend cooperation with other countries on management of fish stocks while developing systems for monitoring shipping, emergency preparedness, and search and rescue services.

Cooperation on combating overfishing

Our northern sea areas are among the richest in the world as regards fishery resources, and it is our responsibility to safeguard these for future generations. Climate change may lead to alteration of growth conditions for and changes in the distribution of fish. In addition to this, new areas in the Arctic Ocean may be opened up for fishing as the ice melts. A long-term and sustainable management must be scientifically based and be secured by strict enforcement. This requires close cooperation between the states.

Norwegian and Russian research institutions have collaborated for fifty years on surveying the marine environment and fish in the sea. The researchers decide what exploratory voyages shall be carried out, and exchange research results. On this basis, following consultation with the International Council for the Exploration of the Sea (ICES), they recommend how much fish can be harvested. This work is of key importance for a sound long-term management of the fish stocks. The joint Norwegian-Russian Fisheries Commission sets the total annual quotas for shared stocks on the basis of the recommendations, and has also developed separate management rules for the most important stocks.

In world terms, illegal, unreported and unregulated fishing constitutes the biggest threat to sustainable fishery management. In

the Barents Sea, cod in particular has been subjected to extensive illegal fishing. As much as 100 000 tonnes were fished illegally each year up to 2005. This is equivalent to one-quarter of the legal quota. Such overfishing is a threat to the whole marine ecosystem, the fishery industry and coastal communities.

The Government has adopted various measures to combat illegal fishing: cooperation on monitoring, exchange of catch data, cooperation on control of fishing boats and records in connection with the landing of fish and blacklisting of vessels. This cooperation is carried out not only with Russia and other countries with zones bordering on those of Norway, but also in international organisations such as the Northeast Atlantic Fisheries Commission (NEAFC). As a result of this, illegal fishing in the Barents Sea fell from 100 000 tonnes in 2005 to approximately 40 000 tonnes in 2007. This was the basis for the ability of Norway and Russia to agree on a cod quota for 2009 that was 95 000 tonnes higher than that of the previous year.

The efforts to combat illegal fishing in the Barents Sea are a long-term process. Both Russian and Norwegian fishery authorities wish to strengthen the institutions that have been developed for management cooperation. A satisfactory control regime is crucial to ensuring sustainable exploitation of fishery resources in the High North. The Norwegian Coast Guard and other parts of the defence establishment play a key role in monitoring fishery activity and in enforcing current regulations. The Ministry of Fisheries and Coastal Affairs and the Directorate of Fisheries give priority to the work on confidence-building measures, information work and development of resource control for combating illegal fishing. The Norwegian and the Russian Auditors General conduct parallel audits of fishery management in the Barents Sea.

Strengthening of safety at sea

Ice melting in the Arctic opens up new sea areas for fishing and transport. The sailing distance between Europe and Asia will be greatly reduced by the opening of new passages through the Arctic Ocean. The increase in ship traffic in the High North will place new demands on monitoring systems, rescue capacity, marine safety and oil spill preparedness, not least because the Arctic environment is particularly vulnerable to oil spill resulting from shipping accidents in open sea.

As a polar nation, Norway must take responsibility for increased safety and emergency preparedness needs in newly accessible sea areas. New civil monitoring systems must be developed to enable monitoring of ship traffic at all times, as well as coordinated arrangements for emergency preparedness and rescue. Such systems must be developed and operated in cooperation with Iceland, the USA, Canada and Russia. The Government has given support to the pilot project "BarentsWatch" under the auspices of SINTEF, which provides a basis for further cooperation and establishment of a comprehensive monitoring and warning system for the northern sea areas. Support has also been given to the Det Norske Veritas project for coordinating industrial standards for environment, health and safety measures in the petroleum industry in the Barents Sea.

Researchers from the Norwegian Polar Institute catching Kittiwakes at Bjørnøya in Svalbard. Photo: Hallvard Strøm/ Norwegian Polar Institute

A number of measures have already been implemented to strengthen marine safety in the northern sea areas. In 2007, the Vessel Traffic Service Centre (VTS) for Northern Norway opened in Vardø, with responsibility for monitoring and guiding ship traffic along the coast of Northern Norway.

In 2007, shipping lanes outside were established outside Norwegian territorial waters on the distance from Vardø to Røst. This will reduce the risk of accidents since traffic is kept apart and is monitored by the VTS in Vardø. Should an accident nevertheless occur, environmental consequences would be reduced because ship traffic would be moved further out from the coast, which facilitates the implementation of measures. The Government aims to increase the state tugboat preparedness in Northern Norway in 2010 to three tugboats for continuous operation throughout the year.

In 2006, Norway and Russia signed a memorandum of understanding on strengthening of cooperation in marine safety and emergency preparedness for acute oil pollution. An initiative was also taken to increase the activity in the Norwegian-Russian border region in connection with the Vardø VTS Centre (the Vardø initiative). This resulted in more training in oil spill response and marine safety, as well as courses in transport development, harbour cooperation and logistics challenges in Vardø and Murmansk.

In response to increasing traffic in Svalbard, the Ministry of Fisheries and Coastal Affairs has found it necessary to establish an improved framework to provide for the ship traffic around the archipelago. Enforcement of the Harbour Act in Svalbard from 1 May 2008 will strengthen marine safety in the archipelago and improve the possibility of organising harbour operations.

BIRD LIFE: BAD TIMES FOR NORWEGIAN SEABIRDS

A number of seabird species in northern and central Norway are struggling with food shortage and nest desertion. Along the coast, bird colonies are threatened with extermination, and the situation is viewed as alarming.

The guillemot population has declined over the last 40 years owing to a combination of malnutrition, bycatch in fishing gear, oil pollution and harvesting. The force of these factors varies from year to year.

– In the case of kittiwakes and Brünnich's guillemots, we know little about the causes. The direct cause where kittiwakes are concerned, is food shortage with resulting death of young birds, but the underlying cause

is uncertain. In the North Sea and parts of the Norwegian Sea, the cause is probably a regime shift in the sea, where the entry of warmer water bodies alters basic conditions in the food chain, resulting in the total or partial eradication of the animals that seabirds feed on. This type of change is often combined with overfishing or other man-made factors, explains Hallvard Strøm of the Norwegian Polar Institute.

– During the current period of unpredictable and complex climatic conditions, it is more important than ever to take control of other man-made factors that negatively affect seabirds. These include overfishing, resulting in reduced food access for seabirds, bycatch of birds in fishing gear, oil pollution, disturbance of important habitats and alien species, such as mink, that threaten nesting seabirds, he says.

Researchers are actively engaged in monitoring and mapping the bird life of the Barents Sea in order to obtain the necessary knowledge to improve the management of these marine environments. Through the seabird programme SEAPOP, which was started in 2005, researchers will, for the first time, map the distribution of nesting, moulting, resting and overwintering seabirds in numbers time and space from Skagerrak in the south to Svalbard in the north.

– Such detailed and extensive monitoring is intended to provide a basis for further research to determine the causes of the changes and predict future changes, says Strøm.

The purpose of the programme is to provide sound basic data that is needed when considering measures that may be employed in reversing current trends. It is staffed by researchers from the Norwegian Institute for Nature Research (NINA), Tromsø Museum and the Norwegian Polar Institute. The programme is funded by the Ministry of the Environment, the Ministry of Petroleum and Energy and the Norwegian Oil Industry Association (OLF).

EISCAT Svalbard Radar

KNOWLEDGE PAVES THE WAY

Future growth in the High North requires that we increase our knowledge, both of and in the High North. The Government is investing more in High North-relevant research and in strengthening universities and university colleges in Northern Norway. A key role in this is played by the Research Council of Norway. The Arctic is central to an understanding of global climate change. Through efforts in relation to Svalbard and our membership of the Arctic Council, Norway makes an important contribution to understanding global climate change.

INTRODUCTION

Research and education play a part in all areas of society and provide the basis for future stable employment. In a vast region with a scattered and often rather small population, a shortage of qualified manpower may limit economic development, and simultaneous development of multiple strong knowledge communities poses a considerable challenge. The knowledge sector is therefore a key sector in the High North policy.

Priority must be given to development of networks between various centres of expertise and to a close collaboration between research and the business sector and between the public and private sectors. International cooperation on research and education, and exchange of students and teachers help to strengthen communities in the High North.

Much of the regions' economic potential is not only unexploited, it is also uncharted. The key industries of the future will be knowledge-based, and without new knowledge the problems will not be solved. Strengthened knowledge is also essential to sound, sustainable exploitation of natural resources, and to conservation of a vulnerable environment.

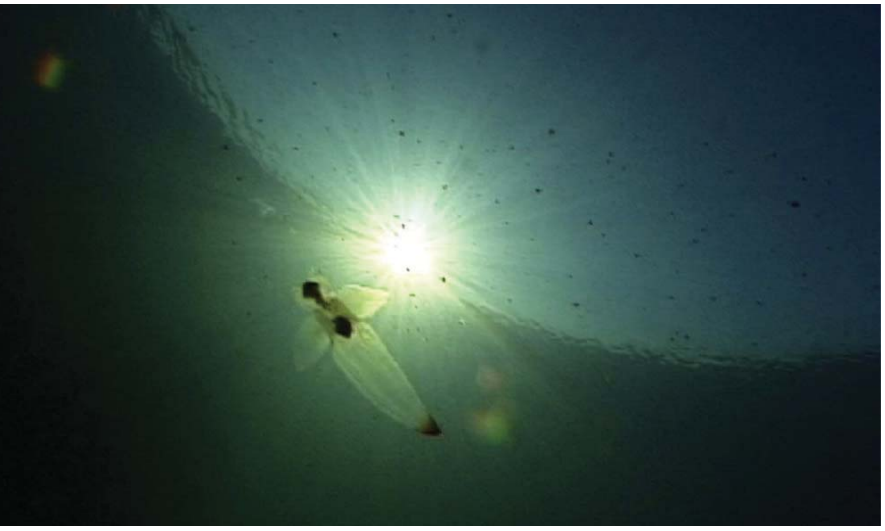
Photo: Adnan Icagic, Tromsø Museum

KNOWLEDGE TO ACT

General increases are being made in funds for research in the High North, but the Government also attaches importance to allocations in promising new areas, such as marine bioprospecting. The Research Council is establishing new regional funds, universities and other education institutions are being strengthened and a new centre for ice and climate will increase our understanding of political, environmental and social consequences of the melting of ice.

More funding for High North research

The Research Council of Norway distributes research funds on behalf of the Norwegian government, and thus influences the emphases taken within Norwegian research. In 2008,



Swimming snails or sea butterflies (Clione sp.) only grow to a few centimetres, and are an important part of the polar food chain. New research shows animal plankton maintains high activity throughout the winter, even under a thick layer of sea ice. This new insight into life under extreme conditions of light and temperature has transformed researchers' view of marine life. Photo: Geir Johnsen/UNIS

the Research Council of Norway submitted a strategic plan for an intensification of research in the High North and a strengthening of centres of expertise in Northern Norway. The aim of the plan is to raise research competence, enhance competence in the private sector, strengthen existing networks and forms of collaboration and develop new ones, develop and strengthen educational opportunities and increase the attractiveness of education and research institutions. In 2009, the Government will increase its efforts to adapt the North Norwegian education and research system to the needs of business and industry. 2009 also saw the establishment of a regional research fund which will primarily finance regional research that promotes innovation and business development.

Since June 2006, the Research Council has given priority to five areas in its High North Strategy: oil and gas, the environment and fisheries, innovation and business development, residence in the High North and foreign policy in the High North.

These are areas where increased knowledge makes society better able to exploit opportunities and meet challenges. Climate, indigenous peoples and business development are given priority in all areas. In addition to these priority areas, the Research Council wishes to exploit the unique opportunities of research in the High North. Many of the opportunities and challenges in the High North cross national borders. Particular importance is therefore attached to internationalisation.

More than half of the funds made available in the Research Council's High North allocation are currently applied to petroleum activities in the High North, there is also considerable and increasing activity within the environment, marine resources and research areas unique to the High North. In the fiscal budget for 2008, the funds allocated to environmental research and bioprospecting were increased.

Bioprospecting involves searching for useful genes and substances in fish, algae and other living organisms. Some substances may have medicinal applications, others may perhaps be used in chemical industry. Research in bioprospecting is an example of the coherence of the High North policy: funds from the Research Council provide for wealth creation in the High North.

There has been considerable research activity in the priority areas of the Research Council's High North allocation right from the start. In 2006, the Research Council allocated NOK 440 million to High North-relevant research. In 2007, the amount was increased by NOK 176 million, an increase of 40 per cent. NOK 72 million of this is being applied to an in-

creased emphasis on High North research by the Research Council. However, much of this growth is due to the International Polar Year.

The world's largest research cooperation

The International Polar Year is the world's largest polar research programme ever, with the participation of 50 000 researchers from 63 countries. Norway's allocation of a total of NOK 330 million over four years makes it one of the largest contributors. The Polar Year involves intensive data collection during two summer seasons in the north and two in the south, during the period from 1 March 2007 to 1 March 2009. The purpose of the International Polar Year is to exploit the great potential of the polar areas for throwing light on enduring scientific problems, particularly in climate research.

Perhaps the largest Polar Year project, "Integrated Arctic Ocean Observing System" (iAOOS), involves making for the first time detailed measurements of the entire Arctic Ocean. Another major international project is "Contaminants in Polar Regions" (COPOL), the purpose of which is to study and compare absorption and transport of environmental toxins in food chains in different oceans.

As a result of the International Polar Year there has been an increase in research activity in Svalbard. A number of projects, both Norwegian and foreign, take place wholly or partly in the archipelago. Under the auspices of the International Polar Year, altogether 36 internationally financed projects and 16 funded by Norway are associated with Svalbard.

- The Government is strengthening research and higher education in the High North:
- The Research Council of Norway has received considerably greater funds for High North research.
- The Research Council gives priority to research into oil and gas, the environment and fisheries, innovation and business development, residence in the High North and foreign policy in the High North.
- More funding for programmes for surveying the seabed and for searching marine life for useful substances (marine bioprospecting).
- 13 new research fellowships at universities and university colleges in Northern Norway in 2009. In addition, the Research Council is establishing five research fellowships in connection with the High North allocation.
- The Research Council is establishing regional research funds that will be of benefit to Northern Norway. The funds will give priority to regional research, innovation and development.
- Establishment of the Barents Institute, which conducts research, studies and dissemination across national borders.
- Sami Knowledge Centre to open in 2009.
- Support for EnergiCampus Nord at Melkøya. This is a collaboration between the Norwegian University of Science and Technology and the Universities of Tromsø and Stavanger and the Finnmark and Narvik University Colleges to provide higher education and continuing education in energy technology adapted to Arctic conditions.

In Northern Norway and in Svalbard, millions of seabirds nest on bird cliffs. Researchers use the birds as an indicator of the state of the marine environment. The birds are dependent on the availability of food in large areas of the sea and are vulnerable to changes in the number of food species and in their migration patterns. The picture shows guillemots on Bjørnøya. Photo: Hallvard Strøm/ Norwegian Polar Institute

Strengthening of education institutions
The University and university college system in the High North is well developed, and these institutions play a key role in competence building in the High North. The seven Northern Norwegian institutions, the University of Tromsø, the Sami University College and the university colleges in Bodø, Finnmark, Harstad, Narvik and Nesna are important knowledge actors in the region.

In January 2009, the University of Tromsø and Tromsø University College merged. The new institution will be a national and international power centre for expertise, growth and innovation in the High North. In 2009, the Sami Science Centre opened. This will house the Sami University College and the Nordic Sami Institute, and will be a Sami Knowledge Centre. The institutions cooperate closely with each other and with other regional and international actors. An important international instrument is the Arctic University, an international cooperative forum for education institutions in the High North.

Centre for Ice, Climate & Ecosystems (ICE)
Norway is in the process of establishing a Centre for Ice, Climate & Ecosystems (ICE) at the Norwegian Polar Institute in Tromsø. The centre is planned to strengthen Norway's position as an active and visible contributor to international climate research. The goal is to build up a world-class specialist community in the area of ice and climate during the course of five years.

Norway already has well developed specialist communities with climatic and polar expertise and glaciology. We also have up-to-date infrastructure for research and environmental monitoring in both the Arctic and the Antarctic. It is this technical expertise that is to be strengthened, focused and further developed in cooperation with other national institutions. The centre will contribute to a major increase in knowledge concerning issues associated with ice melting. In countries of major importance for progress in the international work on climate-related issues, it is also intended to raise awareness of the importance of limiting emissions of greenhouse gases. The centre will collaborate with the world's "glacier states" on increasing understanding and knowledge concerning the political, environmental and social consequences of snow and ice melting and of thawing permafrost.

CLIMATE RESEARCH: THE KEY ROLE OF THE ARCTIC

Research into the Arctic has a key role in work on understanding how climate change will affect us. Svalbard's geographical location, good infrastructure and accessibility makes the archipelago a key area for obtaining such knowledge and for efforts to adapt society to climate change.

In order to understand global climate change, we must understand the Arctic. The Arctic plays a key role in global climate change. The warming of the Arctic is twice as rapid as the global average. This is a forewarning of global changes and, through reciprocal action, changes in the Arctic may contribute to changes further south.

There are still considerable gaps in our knowledge concerning global climate change and the role of the Arctic. Research in this area is therefore of major importance.

The shining white polar ice over the Cap of the North reflects considerable solar energy back into space. However, the polar ice is diminishing year by year. This exposes open seas which absorb much more heat from the sun. This is expected to further reinforce the warming, melting more ice and exposing more sea, and thus accelerating the warming process.

Another important question is how much and how rapidly the enormous Greenland Ice Sheet is melting or sliding into the sea. This melting is decisive for how much and how rapidly the world's oceans will rise during the coming decades. This is potentially a major problem. Such questions have increased international researchers' interest in the Arctic, and Svalbard is now an international arena for polar research.

Svalbard – unique access to the Arctic

Svalbard plays a major role in international climate research. Its geographical location, good infrastructure and accessibility make the archipelago a key area for acquiring knowledge about what happens when the temperature rises in the Arctic. Such knowledge is of great value both for the work on reducing global emissions of greenhouse gases and for work on adapting society to the climate change that now seems unavoidable.

Foreign research activity in the archipelago has increased considerably in recent decades. There are now 11 permanent research stations in Svalbard, and researchers from approximately 20 countries visit the archipelago each year to work on their research projects. Important infrastructure established since 2000 in Ny-Ålesund includes a South Korean research station (2002), The marine laboratory (Kings Bay AS, 2005), China's station (2004), India's station (2008) and Climate Change Tower (Italy, 2008).

Recent decades have seen a considerable increase in research and education, and these activities now constitute a major part of the Norwegian activities in the archipelago. In Longyearbyen, a new station for auroral research (the Kjell Henriksen Observatory) was opened in 2008. The station houses researchers from Norway and a number of

The picture shows the new building of the University Centre in Svalbard (UNIS). UNIS is the world's northernmost higher education institution, and offers unique courses to students from many countries. Photo: Nils Petter Dale/UNIS

foreign research institutions. Norway is still the country with most research activity in Svalbard.

Norway also operates an education institution in Svalbard. The University Centre in Svalbard (UNIS) is the world's northernmost higher education institution. UNIS provides unique range of courses in unique surroundings to 350 students from 26 countries. UNIS is owned by the Ministry of Education and Research, and cooperates closely with the Universities of Tromsø, Trondheim, Bergen and Oslo.

THE SVALBARD GLOBAL SEED VAULT SAFEGUARDS THE WORLD'S SEEDS

The Government has established a global security storage vault for seeds in Svalbard, which was opened in February 2008. The world has several more seed collections, but their valuable contents could be lost in natural disasters or as a result of political instability. The Svalbard Seed Vault however is well protected deep inside a mountain. The Government will use the Svalbard Global Seed Vault to provide increased understanding and awareness of biodiversity, genetic resources and food security in the time ahead. The Ministry of Agriculture and Food has allocated a total budget of NOK 4.3 million for 2009 for operation of the Seed Vault, information activities and management.

Space activities in Svalbard

Earth observation from satellites in space provides important information on how ecological processes and human activity change the environment on earth. Monitoring by satellite also facilitates prevention and follow-up of environmental crime at sea, and helps to enable more rapid response to accidents.

Svalbard is an optimal location for communication with satellites, particularly in polar orbits. As a result of this, Svalbard Satellite Station (SvalSat) has become the largest in the world for retrieving data from polar satellites. The station is also world-leading in retrieving data from polar weather satellites.

A Norwegian civilian monitoring satellite is under construction. This satellite will monitor ship traffic in large areas of the High North, and the information it provides will be of major help for maritime navigation and for the exercise of Norwegian sovereignty in all Norwegian sea areas north of Stad.

Dangerous melting needs to be understood

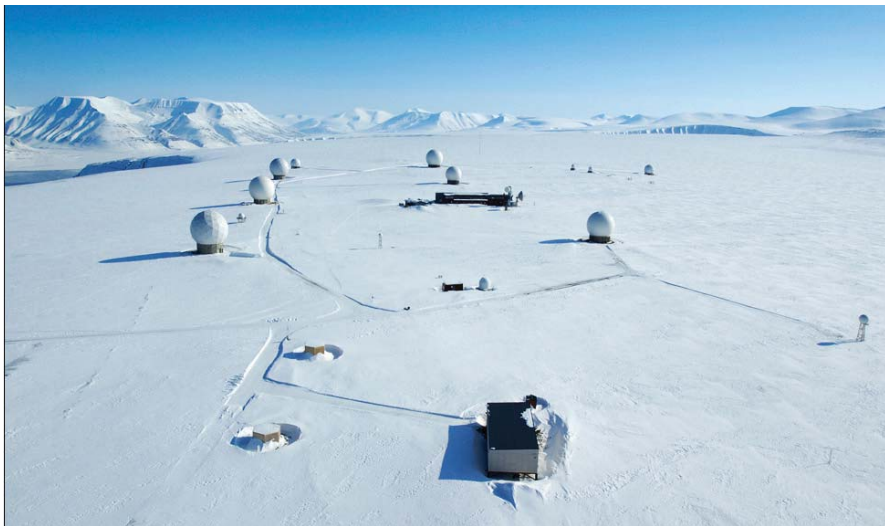
1.3 billion people are currently in danger of increasing water shortage as a result of reduced flow in vital rivers. This serious effect of climate change is due to the melting

of high-lying glaciers and snow that supply the rivers with water during periods of low precipitation.

The Himalayas are the "water tower" that supplies water to seven of the largest rivers in Asia. This mountain range is already severely affected by climate change, and approximately 70 per cent of the glaciers in the area are in rapid decline. The rivers that drain the mountain masses of Central Asia affect the sustenance base for altogether 40 per cent of the world's population. In addition to reduced flow, an increase in flood episodes is anticipated. Both of these changes result in reduced food production and negative economic ripple effects.

In addition to the Himalayas, mountain ranges such as the Andes, the Rocky Mountains and the Alps are in danger. These ranges are of major importance for the flow of rivers in periods of low precipitation.

Norway has considerable expertise in the area of snow, ice and glaciers, which will be further reinforced by the building of the new Centre for Ice, Climate & Ecosystems (ICE). The Minister of the Environment has therefore, in collaboration with the United Nations Environmental Programme (UNEP), taken the initiative to hold a research conference in 2009 on melting of snow and ice from high-lying glaciers. The conference will be hosted by the Norwegian Polar Institute. The aim of the conference is to disseminate knowledge and create a basis for raising these issues higher on the agenda of international climate work.



An Arctic success: The world's largest ground station for satellites in polar orbits is located in Svalbard. Photo: Norwegian Space Centre

NORWEGIAN CLIMATE RESEARCH: WARMER IN THE ARCTIC OCEAN

Norwegian measurements show that parts of the East Greenland current in Framstredet have become between two and three degrees warmer just during the last ten years. This area of the sea between Greenland and Svalbard is over 2500 metres deep, and measurements made here take the pulse of the sea in the far north of the world. The observations from Framstredet in 2007 and 2008 show that the larger proportion of the ice is now first-year ice, and that there is little multi-year ice. Previously, most of the ice was thick multi-year ice.

Here we can study how the ecosystems in the Arctic are affected by climate change. Warm Atlantic water flows northwards into the Arctic Ocean. The flow then follows the continental shelf eastwards, while the water is cooled down and becomes heavier. After several years of cooling and change of salt content, this water becomes the main flow out of the

Researchers take samples of ice cores in Framstredet between Greenland and Svalbard. In the background we see the icebreaker and the Coast Guard vessel "Svalbard". Research helps to explain the connection between Arctic and global climate change. The expedition was possible owing to good cooperation with the Norwegian Coast Guard and funding via the International Polar Year. Photo: Sebastian Gerland, Norwegian Polar Institute

Arctic Ocean. Over 90 per cent of all the ice drift out of the Arctic Ocean goes via Framstredet. These observations have been made as part of the international research project "Integrated Arctic Ocean Observing System" (iAOOS), which is perhaps the largest project under the auspices of the International Polar Year. Through the project, detailed measurements have, for the first time, been made throughout the Arctic Ocean. Norway has contributed to the project by detailed measurements in Framstredet. The Norwegian Meteorological Institute, the Norwegian Polar Institute, the Institute of Marine Research, Norwegian universities and the Norwegian Coast Guard have all contributed.

Satellite observations indicate a significant reduction in the annual minimum size of the Arctic ice cap since the end of the 1970s. In order to map ice conditions, the thickness of the ice must also be measured. However, this is difficult, and measurement of the thickness of the ice over large areas was first made possible by the International Polar Year. In Framstredet, the thickness of the ice was measured over a distance of more than 1500 kilometres. Corresponding aerial measurements were made north of Alaska, Canada and Siberia.

Together, these measurements by researchers from many countries give a more accurate picture of the effects of climate change on the Arctic. This information will in its turn give a more accurate picture of the effects of the changes in the Arctic on the global climate system.

THE GOVERNMENT'S HIGH NORTH STRATEGY

The 22 action points of the High North Strategy

The main priorities of the Government's High North Strategy presented 1 December 2006 have been followed up through 22 specific action points. The status summary shows that most of these action points were either implemented or started by March 2009.

1. Further develop the active dialogue with neighbours, partners and allies on High North issues

Active visit diplomacy in relation to the High North has increased international awareness of its importance, particularly regarding the Arctic dimension.

2. Strengthen the demonstration and coordination of Norwegian High North policy in international and regional cooperative fora

The High North policy has been presented in most international, regional organisations. International secretariats have been established for the Arctic Council in Tromsø and for the Barents cooperation in Kirkenes.

3. Further develop petroleum activities in the Barents Sea through an active allocation policy to follow up results of exploration and the need for further exploration acreage

In 2008, eight exploration wells were bored in the Barents Sea. In TFO 2008 (assignment of predefined areas) two new production licences were assigned for the Barents Sea. In the 20th licensing round in 2008, 28 blocks in the Barents Sea were announced.

4. Prepare a proposal for establishment of an economic and industrial cooperation zone including both Norwegian and Russian territory in the border areas of the High North

Positive Russian response to the idea of a Pomor zone. Work on realisation is continuing, among other ways, through the twin town cooperation Sør-Varanger – Petsjenga and the border resident ID card scheme.

5 Seek further measures to facilitate border crossing between Norway and Russia

A Norwegian-Russian visa agreement entered into force in December 2008. This establishes documentation requirements and processing time, and enables a various categories of people who travel frequently to obtain multi-journey visas for both Norway and Russia. Norway has also reduced the documentation requirements for Russians resident in Murmansk and Arkhangelsk, so that these persons do not necessarily require invitations in order to make regular trips to Norway (Pomor visas).

6. Investigate the need for new, research vessels equipped for journeys in polar waters in order to increase the year-round Norwegian presence in northern waters

The Government has started work on preparing the decision documents for procurement of a research vessel equipped for journeys in polar waters. The final decision on procurement and specification will be made on completion of quality assurance.

7. Strengthen both knowledge building in the High North and High North-relevant research through the Research Council

In 2007, NOK 616 million was allocated by the Research Council to High North-relevant research. The fiscal budget for 2008 included an increase of approximately NOK 20 million, while the fiscal budget for 2009 provided for an increase of approximately NOK 70 million, particularly within the priority areas innovation and business development.

8. Strengthen marine safety in the waters surrounding Svalbard, among other ways, by making the Harbour Act applicable to Svalbard and introducing a compulsory pilot service

The Harbour Act was made applicable to Svalbard on 1 May 2008. A compulsory pilot service is under consideration.

9. Strengthen the cooperation with the authorities of Russia and other countries in combating illegal, unregulated and unregistered fishing in the Barents Sea

Cooperation with Russia resulted in a reduction in overfishing of cod of 60 per cent from 2005 to 2007.

10. Strengthen efforts to follow up the comprehensive management plan through survey and monitoring of the marine environment and research into ecosystems and the ways they are affected by human activities

A systematic survey of the seabed in northern waters (MAREANO programme) was begun in 2005, and may be completed in 2010. The allocation of NOK 18.8 million in 2009 is to be divided equally between the Ministry of Fisheries and Coastal Affairs, the Ministry of the Environment and the Ministry of Trade and Industry.

11. Strengthen survey, monitoring and research of climate change and environmental toxins in the High North

"BarentsWatch": a pilot project financed by Barents 2020 funds for development of a comprehensive monitoring and warning system for the northern seas. Further process is to be decided in March 2009.

12. Continue engagement regarding nuclear safety and preparedness in the High North

Norway is due to complete the fifth and last dismantling of decommissioned nuclear submarines in 2009. Norway's contribution to the clearing up of Andreyev Bay will continue with a long-term perspective. The last highly radioactive strontium batteries in lighthouse lanterns in north-western Russia will be taken out of service this year.

13. Develop environmental technology for and in the High North by means of strengthened R&D investments

The Government is to give priority to Arctic technology. In 2009, the programme the Research Initiative for Northern Norway will be initiated under the auspices of the Research Council of Norway. One of the priority areas is environmental technology in cold climate.

14. Implement more knowledge and development projects under Barents 2020

A number of projects intended to provide more knowledge in, for and concerning the High North are to be supported via the Ministry of Foreign Affairs grant scheme. Several visiting professorships have been established or are in process of establishment.

15. Establish a High North scholarship programme financed by Barents 2020 funds

The programme was established in 2007. Each year, approximately 50 students from the USA, Canada and Russia study at North Norwegian education institutions.

16. Increase the focus on cultural cooperation in the High North, particularly with Russia

People-to-people cooperation and the culture dimension in the High North Strategy have contributed to increased cooperation in the Barents region, and have resulted in closer contact between communities in Northern Norway and north-western Russia. In January 2009, a cultural agreement was signed by the ministers of culture of the two countries.

17. Consider measures increasing recruitment of competent and relevant foreign manpower to the High North

New regulations enabling unskilled workers in the Barents region to obtain work permits in Northern Norway entered into force on 1 December 2008. Considerable efforts are also being made to make this easier for skilled workers (see action point 5).

18. Encourage increased efforts in bioprospecting and development of new products based on marine organisms

A state secretary committee chaired by the Ministry of Trade and Industry is due to submit its report in 2009. In April 2008, the Storting adopted a new Marine Resources Act, which also provides rules concerning marine bioprospecting. An international conference was held in Tromsø in February 2009. The Government is developing a national strategy for marine biotechnology with a primary emphasis on marine bioprospecting, which will be published in autumn 2009.

19. Provide for increased research into farming of cod and other marine species

The cod farming measures of Innovation Norway and the Research Council have been strengthened. Cod is also given priority by the marine wealth creation programme.

20. Consider supporting efforts to start up goods traffic in the transport corridor from Central Asia to North America through the port of Narvik

The Ministry of Foreign Affairs has sounded out other countries' interest in such a project. There did not appear to be sufficient international interest with regard to cost coverage. A minimum variant is now being considered involving transport to St. Petersburg or Moscow as a first step.

21. Consider whether there is a basis for investigating new transport solutions, such as a railway from Nikel to Kirkenes, and whether there is a market for new air services on the Northern Cap

A railway line from Kirkenes to Nikel has been considered in work on the national transport plan 2010–2019 (NTP). It is assumed that this must still be viewed as an industrial project. Local interest for various railway solutions must be viewed in context and in relation to traffic volumes. Railway solutions should be included in a study on development of the transport system in the High North (see action point 22). Measures for developing airports are being considered in connection with work on NTP 2010–2019.

22. Conduct a broader analysis of existing transport infrastructure and developmental needs in the High North in connection with work on NTP 2010–2019

As a part of work on NTP 2010–2019, the transport authorities have considered the infrastructure and recommended measures. The Government wishes a clear strengthening of investments in Northern Norway. In work on NTP 2010–2019, a study on development of the transport system in the High North has been considered.

The Government's High North Strategy was presented on 1 December 2006.

Sources of further information:
The High North portal is a collection of web pages for information on issues concerning the High North provided by the Government and the ministries. The purpose of the portal is to increase knowledge concerning the High North and concerning Norwegian policy in this area. It provides a collection of relevant articles, speeches and central documents as well as links to other websites concerning the High North.
The High North portal can be found in the pages of the Ministry of Foreign Affairs at the website regjeringen.no:
http://www.regjeringen.no/en/dep/ud/campaign/the-high-north.html

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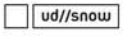
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