



The Research Council
of Norway

Work programme

From 2018

Programme

Polar Research Programme – POLARPROG

Work programme from 2018

The Polar Research programme - POLARPROG

© The Research Council of Norway 2018

Visiting address: Drammensveien 288
The Research Council of Norway
P.O.Box 564
NO-1327 Lysaker

Telephone: +47 22 03 70 00
Telefax: +47 22 03 70 01
post@rcn.no
www.rcn.no

The report can be ordered and downloaded at
www.forskningsradet.no/publikasjoner

Translation by: Carol Eckman
Graphic design cover: Design et cetera AS
Photo/illustration: Shutterstock

Oslo, October 2018

ISBN 978-82-12-03671-0 (pdf)

This work programme for the Polar Research Programme (POLARPROG) is a restructured revision of the 2014 work programme, which has its framework in the Research Council's policy document *Norwegian Polar Research (2014–2023)*. The 2017 revision process has been based on portfolio analyses, the mapping of polar research activities carried out in 2015, the evaluation of Norwegian polar research carried out in 2017, and experience gained in the first years of programme operation. This work programme may be revised at regular intervals to ensure that the programme has the most appropriate scientific and operational focus at all times and promotes the greatest possible scientific and societal relevance.

Contents

- 1 Summary 4
- 2 Background and challenges..... 4
- 3 Objectives for the programme..... 6
 - 3.1 Primary objective 6
 - 3.2 Secondary objectives..... 6
- 4 Thematic and scientific priority areas 7
 - 4.1 Climate and the environment 7
 - 4.2 Natural resources and industrial activity..... 9
 - 4.3 Policy and management 10
- 5 Priorities for structuring the research effort 10
 - 5.1 Promote integrated perspectives and cooperation in polar research 11
 - 5.2 Promote creative thinking and innovation in polar research..... 11
 - 5.3 Enhance the international profile and contribution of leading Norwegian research groups 11
 - 5.4 Ensure continuity in polar research by recruiting young polar researchers 12
 - 5.5 Expand applicable knowledge in trade and industry and the public administration..... 12
 - 5.6 Facilitate dynamic, targeted communication activities 12
 - 5.7 Increase the accessibility and efficient use of data and research infrastructure..... 12
 - 5.8 Give priority to research related to Svalbard 13
 - 5.9 Strengthen research in and about Antarctica..... 13
- 6 Cooperation with related instruments 13
- 7 Anticipated results, impacts and societal outcomes 14
- 8 Resources and budget..... 14
- 9 Governance and organisation 14

1 Summary

The Polar Research programme (POLARPROG) is the Research Council of Norway's most important funding instrument for achieving wide-ranging, high-quality Norwegian polar research. POLARPROG will contribute to fulfilling Norway's special responsibility to generate research-based knowledge that is essential for designing policy and promoting sustainable management and industrial development in the polar regions to the benefit of society. The programme is a key instrument for following up the Research Council's policy document *Norwegian Polar Research (2014–2023)*.

POLARPROG operates with three thematic priority areas, reflecting the programme's main scientific priorities:

- **Climate and the environment** is directed towards generating knowledge about processes that drive climate and environmental change in the polar regions, and their impacts on the natural environment and society.
- **Natural resources and industrial activity** is directed towards generating knowledge about sustainable industrial and social development.
- **Policy and management** is directed towards generating knowledge about geopolitical, international law-related and institutional conditions for policy design and sustainable environmental and resource management.

Multiple programmes at the Research Council provide funding for research on polar issues, and the objectives set out in this work programme will best be achieved through effective cooperation with these programmes. The subject areas to be given priority by the programme at any given time will be determined in light of ongoing activities in related Research Council programmes, the project portfolio, and international calls for proposals and research activities. POLARPROG primarily targets Norwegian research institutes, universities, university colleges and other research environments, in addition to relevant actors in the private and public sectors.

2 Background and challenges

The rapid changes taking place in the polar regions do not merely affect those regions in isolation, they affect our entire planet. Similarly, pollution from human activity in other parts of the world has an impact on the climate and environment in the polar regions. Thus, these regions are important for studying climate change as well as the levels and impacts of hazardous substances. Climate change is making the polar regions more accessible. The prospect of increased human activity, particularly in the polar Arctic, will add to the growing pressure on the polar regions' climate and environment. Technological development will be needed in several areas to ensure that industrial development proceeds safely and cost-effectively. The rapid changes intensify the need for new knowledge to ensure sustainable development of these regions.

Norway's interests in the Arctic and Antarctic, as well as its national and international obligations, give the country a special responsibility to generate knowledge needed for sound management and industrial development in the polar regions. Greater knowledge is also essential for Norway to make its voice heard in international negotiations. Norway's high aspirations for and expectations of polar research, especially in the north, are set out in a number of government white papers and strategies,

such as the Government's Arctic strategy¹, the Government's Ocean Strategy², the white paper on Svalbard³ and several of the national "21" strategies⁴. The oceans, climate and sustainable development are central themes in this context, and several of the UN Sustainable Development Goals are also of relevance.

Norway has a long history of conducting polar research and is a major international actor in the field⁵. This is an area in which Norway has an outstanding opportunity to contribute to the global knowledge pool. Norwegian polar research activities are mainly oriented towards the Arctic, with Svalbard the key focus. The white paper on Svalbard³ sets out clear ambitions for continued development of Svalbard as a platform for Norwegian and international research activities. Greater collaboration, coordination of research and infrastructure, and quality of research are the main areas targeted. The white paper affirms that Norway intends to be a key actor in the development of knowledge in and about Svalbard.

The white paper *Norwegian Interests and Policy in the Antarctic*⁶ underlines the importance of research on the Antarctic for Norway. Considering Norway's limited research activity in the Antarctic, the Research Council's polar research policy stresses the need to increase research in and about the region. In addition, the evaluation of polar research⁷ (2017) highlights the need for a more clearly-defined initiative. Research Council activities must be viewed in the context of national support schemes such as the *Norwegian Antarctic Research Expeditions (NARE)*.

Polar research questions are often complex, and addressing them will require an integrated, broad-based approach across disciplines and thematic areas. There is a need for research in specific subject areas as well as for research that extends across disciplines. Increased efforts will lead to more relevant research, which in turn will enhance the societal outcome of Norwegian polar research. More research that combines social science, humanities and natural science perspectives is needed to find knowledge-based, sustainable solutions for industrial and social development in the polar regions.

While there is already extensive international collaboration in place, it is possible to expand cooperation even further. Sharing of data and infrastructure are important areas that should be given greater focus. It is anticipated that strong Norwegian research groups will assert themselves and succeed in international bilateral and multilateral arenas as well as in European research programmes. Well-developed research infrastructure and dynamic polar research groups make Norway well-qualified for coordinating international projects and campaigns.

Polar research is carried out by research groups throughout the country, including Svalbard, and encompasses all sectors performing research. The polar research evaluation points out a number of challenges that stem from the need for greater collaboration and coordination in Norwegian polar research.⁷

Polar research activities under the Research Council are long-term in nature and in keeping with the Government's *Long-term plan for research and higher education 2015–2024*, numerous other

¹ *Norway's Arctic Strategy – between geopolitics and social development* (2017).

² *New Growth, Proud History – The Norwegian Government's Ocean Strategy* (2017).

³ *Meld. St. 32 (2015–2016) Svalbard*, white paper from the Ministry of Justice and Public Security.

⁴ National strategies such as the *HAV21* national marine R&D strategy, the *Miljø21* strategy on environmental R&D, the *Maritim21* R&I strategy for the maritime industry, and the *OG21* technology strategy for the petroleum industry.

⁵ *Norsk polarforskning – forskning på Svalbard* (Norwegian polar research: Research in Svalbard), a 2015 report by the Nordic Institute for Studies in Innovation, Research and Education (NIFU).

⁶ *Meld. St. 32 (2014–2015) Norwegian Interests and Policy in the Antarctic*.

⁷ *Norwegian Polar Research – An Evaluation* (2017).

government white papers, the Research Council's polar research policy⁸ and strategy for international cooperation⁹, as well as its main strategy¹⁰, research strategy for the Arctic and Northern Areas¹¹, and the strategy for sustainability¹². Polar research activity will also incorporate perspectives relating to Norway's national climate targets, the Paris Agreement goals and the 17 UN Sustainable Development Goals¹³ adopted in 2015.

3 Objectives for the programme

The Polar Research programme (POLARPROG) is the Research Council of Norway's most important funding instrument for achieving wide-ranging, high-quality Norwegian polar research. The programme's broad scientific approach and mandate reflect an expanded responsibility to cooperate with related programmes, activities and instruments to achieve the programme's objectives.

3.1 Primary objective

POLARPROG will contribute to fulfilling Norway's special responsibility to generate new research-based knowledge about the polar regions to the benefit of society.

3.2 Secondary objectives

Scientific secondary objectives

POLARPROG will provide support for basic and applied research in all subject fields and disciplines to enhance knowledge about:

- processes that drive climate and environmental change in the polar regions, and their impacts on the natural environment and society;
- sustainable industrial and social development;
- geopolitical, international law-related and institutional conditions for policy development and sustainable environmental and resource management.

Structural secondary objectives

POLARPROG will cooperate with other research funding instruments and target its own funding announcements and grant allocations to develop an effective project portfolio, and will work to:

- 1) promote integrated perspectives and cooperation in polar research;
- 2) promote creative thinking and innovation in polar research;
- 3) enhance the international profile and contribution of Norwegian research groups;
- 4) ensure continuity in polar research by recruiting young polar researchers;
- 5) expand applicable knowledge in trade and industry and the public administration;
- 6) facilitate dynamic, targeted communication activities;
- 7) increase the accessibility and efficient use of data and research infrastructure;
- 8) give priority to research related to Svalbard;
- 9) strengthen research in and about the Antarctic.

⁸ *Norwegian Polar Research, Research Policy (2014–2023)* (2013).

⁹ *Research Council's Strategy on International Cooperation 2010–2020* (2011).

¹⁰ *Research for Innovation and Sustainability* (2015).

¹¹ Currently under revision.

¹² *Research for Sustainable Societal and Industrial Development: The Research Council of Norway's Strategy for Sustainability 2017–2020*.

¹³ <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

Geographic delimitations

The scope of the programme is limited to research activities in or about the polar regions of the Arctic and Antarctic as defined in the Research Council's policy document *Norwegian Polar Research (2014–2023)* (see figure below). The geographic delimitations do not preclude research where the polar component is enhanced by including the area outside the defined polar regions, for example circumpolar studies that include a large part of Norway's northern areas.

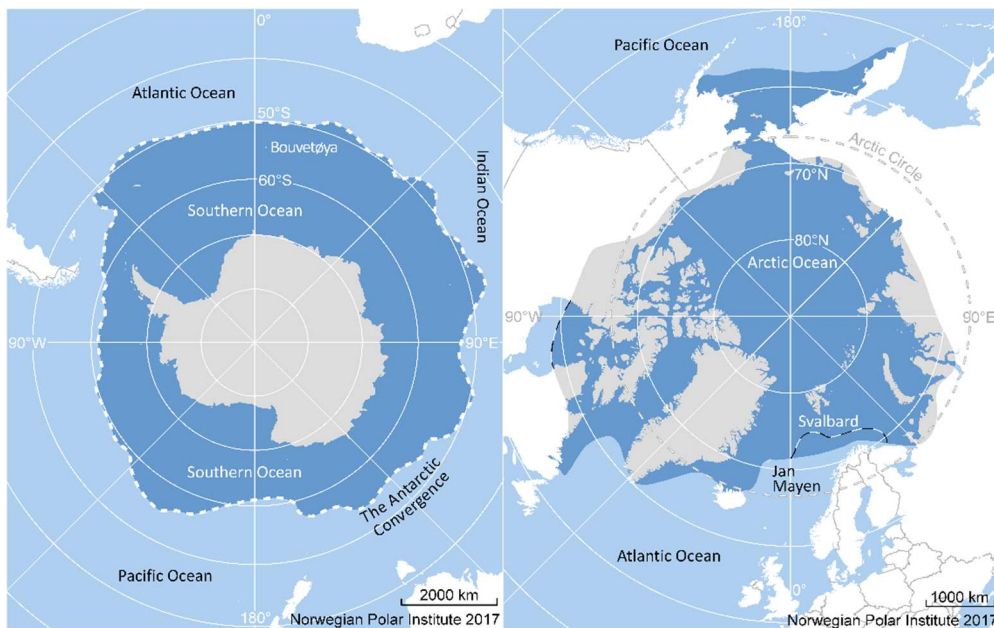


Figure 1. Geographic delimitations of the polar regions as defined in the Research Council's polar research policy.

4 Thematic and scientific priority areas

POLARPROG will contribute research-based knowledge that is essential for enhancing our understanding of the climate system and ecosystems and for implementing policy and promoting sustainable management of the polar regions.

This work programme is divided into three broad thematic priority areas. Research activities will be carried out within and across these areas.

4.1 Climate and the environment

OBJECTIVE: Enhance knowledge about processes that govern climate and environmental change in the polar regions, and their impacts on the natural environment and society.

Knowledge about the climate system is the foundation for understanding both the relationship between natural climate variability and anthropogenic change and the impacts of climate change on nature and society. Basic knowledge about the climate system and its variability in the Arctic and Antarctic is of crucial importance for understanding the global climate system. Without a thorough understanding of the climate system and climate change, any knowledge about impacts and appropriate adaptation and mitigation measures and measures to reduce emissions will be highly

uncertain. Research on the climate system involves a number of scientific disciplines related to the atmosphere, cryosphere, hydrosphere, geosphere and biosphere.

Geophysical and atmospheric processes and feedbacks between them can intensify the impacts of climate change at regional level and have impacts on global-scale climate change. Understanding such links requires integrated studies of energy balance, atmospheric circulation and insight into sources of climate forcers and pollutants.

The dynamic response of the cryosphere and the links between the cryosphere and the climate, including the impacts of climate change on glaciers and permafrost thawing, are still not well understood. Improving knowledge will reduce uncertainty in, for example, future climate change predictions and estimates of sea level change.

Oceans and seabed: The large sea areas in the Arctic and Antarctic have not been studied and mapped to any great extent. There are gaps in our knowledge of the significance of ocean currents for important physical and biogeochemical processes and of natural variability in the marginal seas of the Arctic Ocean. Declining sea ice thickness and extent, higher temperatures and increasing inputs of fresh water from glaciers are altering the energy balance and ocean-atmosphere interactions. These changes are influencing the thermohaline circulation, and this will in turn have feedback effects on the climate and on the marine environment. Accordingly, it is important to gain a better understanding of the physical, chemical and biogeochemical processes in the Southern Ocean.

Ecosystems: Climate change will have impacts on all ecosystem components. As a result of rising temperatures in the polar regions, some species will suffer a steep population decline or be lost altogether while more temperate species may become established. This is resulting in changes throughout the ecological system. More knowledge is needed about species distribution, reproduction, species composition, ecological processes and productivity. It is also vital to generate more knowledge about the adaptive capacity of ecosystems and their resilience to external pressures as a basis for sound ecosystem management.

Pollution: Natural climate variability, anthropogenic climate change, changes in levels of long-range transboundary pollution and increasing human activity, for example industrial activities and tourism, may alter the pollution load at all levels in ecosystems. Important research topics include the transport of pollutants with air and ocean currents, bioaccumulation of pollutants along food chains, and cumulative environmental effects on ecosystems exposed to multiple pressures.

People and cultural heritage: It is essential to develop knowledge about vulnerability and adaptation to the climate and environmental changes that are affecting communities in the polar regions to varying degrees. Research on history and the cultural heritage plays a key role in building up an understanding of people's past and present, but also of how society is likely to develop in the near future.

Priority research topics for the thematic priority area "Climate and the environment" are listed below. These must be considered in conjunction with the other thematic priority areas.

Research activities should help to:

- strengthen the application of Earth system science perspectives in the polar regions through studies of the links between the biosphere, geosphere, atmosphere, cryosphere and hydrosphere;
- improve knowledge of the polar climate system and its interactions with the global system;
- improve knowledge of the polar ecosystems and the processes that govern them;
- enhance knowledge about the dispersion, impacts and interactions of long-range transboundary and local pollution in the polar regions;
- enhance knowledge about the impacts of climate change on Arctic communities;
- improve the basis for cultural heritage management in polar regions.

4.2 Natural resources and industrial activity

OBJECTIVE: Enhance knowledge about sustainable industrial and social development.

Ongoing climate change, improved infrastructure and technological development are making the polar regions more accessible and relevant for business interests related to resources and tourism alike. In the Arctic, it will also be possible to establish new sea routes. Industrial developments in the polar regions must be based on a sound understanding of the possible impacts on the natural environment and society, and measures to address these challenges must be implemented. New knowledge and technological development will be needed in several areas to ensure that industrial and social development proceeds safely and cost-effectively. POLARPROG focuses on the particular challenges that arise as a result of natural conditions in polar regions.

Activities that may have environmental impacts in the polar regions are mainly associated with the petroleum industry, maritime operations and transport, fishing and utilisation of other biomarine resources, the extraction of mineral resources and tourism.

Maritime operations: The increasing maritime activity in polar waters creates a number of technological challenges. Offshore petroleum developments and marine operations in the Arctic are exposed to cold climate, ice and icing, the polar night, and increased risk of disruption of atmospheric communications and navigation. The long distances and vast sea areas involved pose significant challenges to Arctic petroleum recovery. It is important to obtain adequate knowledge about, and develop a reliable forecasting system for, weather and climate-related conditions such as atmospheric circulation, ocean currents, ice formation and ice drift to ensure the safety of maritime operations. Other relevant issues to explore include more pressure on the environment, for example the introduction of new species and pollution from petroleum recovery, mineral extraction and maritime shipping activities.

Fisheries and biomarine resources: Marine ecosystems are changing due to a combination of rising sea temperature and declining sea ice thickness and extent. The changes are influencing the availability of commercial species. It is important to lay the foundation for knowledge development that promotes sustainable ecosystem management in this sector.

Industrial and social development in the Arctic must build on a platform of risk-based health, safety, and environmental (HSE) management. There must also be requirements for robust environmental monitoring systems. Polar research must play a part in developing knowledge and technology that reduce the risk of undesirable incidents and ensure HSE standards.

The tourism industry in the polar regions is on the rise. This applies to cruise tourism in particular, but also land-based tourism is growing. Easier access to and increased investment in tourism activities will have ramifications for a fragile environment. Knowledge that promotes sustainable development of this industry in the polar regions and sound management of the fragile ecosystems and cultural heritage will be vital (also see part 4.1).

Priority research topics for the thematic priority area “Natural resources and industrial activity” are listed below. These must be considered in conjunction with the other thematic priority areas.

Research activities should help to:

- enhance understanding of the effects of physical environmental parameters on risk level in maritime activities;
- strengthen the knowledge base for the impacts of new or increased industrial activity on the environment and ecosystems;
- improve forecasts by scaling and developing models for atmosphere, weather and ice conditions.

- strengthen the knowledge base for promoting sustainable development of the tourism industry and sound management of ecosystems and cultural heritage in this context.

4.3 Policy and management

OBJECTIVE: Enhance knowledge about geopolitical, international law-related and institutional conditions for policy development and sustainable environmental and resource management.

The political and economic importance of the polar regions is increasing steadily. Foreign and security policy analyses are vital to Norway, which has substantial resources and strong interests in the polar regions. In addition, climate and environmental change and expanding economic activity may put pressure on established management regimes. Studies of the geopolitical situation, of the effectiveness of established management regimes, and of the general framework for international cooperation in the polar regions will therefore be needed.

Geopolitical issues: More knowledge is needed about circumstances that may increase the level of conflict or undermine cooperation between states in the polar regions. Key questions are whether climate change will result in new or greater conflicts of interest between states, for example on access to natural resources such as petroleum, fish and minerals or to new shipping routes, and to what extent such changes will result in new patterns of alliance or conflict between states.

Issues relating to the law of the sea: Updated knowledge is needed on the extent to which the existing law of the sea can accommodate the changes taking place in the polar regions due to temperature changes, ice melt and sea level rise. Greater access to marine resources in the water column and on the seabed entails new challenges relating to environmental protection, preparedness and response and search and rescue, and also to principles for allocation of resources and access to new shipping routes.

Regimes for sustainable environmental and resource management: In both the Arctic and the Antarctic, changes in the distribution of fish stocks may put pressure on established management regimes and systems for allocating resources. Growing interest in the extraction of mineral and petroleum resources also entails management challenges. Research-based knowledge is needed on countries' approach to established and new cooperation regimes, and on the extent to which these cooperation regimes help to solve problems.

It is also important to identify the need for restructuring of industries and the public administration to prevent undesirable climate and environmental change.

Priority research topics for the thematic priority area "Policy and management" are listed below. These must be considered in conjunction with the other thematic priority areas.

Research activities should help to:

- expand the knowledge base on geopolitical issues;
- improve understanding of issues relating to the law of the sea;
- enhance the knowledge base on regimes for sustainable environmental and resource management.

5 Priorities for structuring the research effort

The primary project type employed under POLARPROG will be Researcher Projects, but other application types will be considered according to need. This will be particularly relevant in connection with efforts to promote international cooperation, greater user involvement and syntheses.

The programme attaches importance to achieving a satisfactory gender balance among project managers and, where relevant, will work to strengthen gender perspectives in the polar research carried out under the programme.

Measures to structure the research effort under the programme will be operationalised in the programme's action plan, which will be revised on an annual basis. The priorities for structuring the research effort under POLARPROG have their basis in the structural secondary objectives.

5.1 Promote integrated perspectives and cooperation in polar research

In response to society's interest in and need for knowledge about the polar regions, a number of programmes and activities at the Research Council have a significant polar component in their project portfolios. To maintain an integrated, strategic focus on polar research, POLARPROG will work to promote coordination across the Research Council's programmes. This includes creating a unified structure, identifying and filling knowledge gaps, and avoiding duplication and overlap between programmes. POLARPROG will strive to maintain a good overview of polar research activities funded nationally and internationally by others than the Research Council to target funding where it is needed most.

Addressing societal challenges requires research activities across disciplines and thematic areas. At the same time, polar research requires specialist expertise in various subject fields, and many research tasks are best solved through close collaboration between researchers in the same or related fields. Many of the research questions in the field will also require new collaborative constellations. The involvement of the users of polar research is called for in many contexts to ensure that the research is of high relevance and benefit, and to promote competence-building within research groups and among users of research in both the public and private entities (see also part 5.5).

5.2 Promote creative thinking and innovation in polar research

High quality in the research funded by POLARPROG is essential. The programme is directed towards knowledge development in Norway, and research activities must be of relevance to the Norwegian public administration and policy design. The programme will attach importance to boldness in scientific thinking and innovation in projects, meaning innovative ideas that can help to advance scientific understanding beyond the current research front. This may take the form of research based on unique natural conditions or original scientific perspectives, or research originating in innovative, interdisciplinary collaboration. There is an accepted risk that such projects may not achieve their objectives.

5.3 Enhance the international profile and contribution of leading Norwegian research groups

POLARPROG will focus on research areas of strategic importance for Norwegian polar research and will also play a part in establishing new strategically important research areas and research groups. It is also important to ensure that strong Norwegian research groups have an opportunity to maintain their position.

International cooperation is essential to enhancing quality and capacity in Norwegian polar research. POLARPROG will promote increased international cooperation by stipulating requirements in calls for proposals, through meeting places, and by expecting the projects to publish in recognised international scientific journals.

Addressing polar research challenges requires wide-ranging international cooperation and a coordinated effort. Norway is home to leading research groups that can make their mark in the international competitive arenas. POLARPROG will lay a foundation for Norwegian polar researchers to position themselves for success in international arenas by providing funding for the most important arenas and activities that are relevant for polar research at the Nordic, European and global levels, as well as bilateral cooperation with selected countries.

5.4 Ensure continuity in polar research by recruiting young polar researchers

POLARPROG will work to recruit talented researchers into the polar field in keeping with the Research Council's recruitment policy¹⁴, primarily through the incorporation of various types of recruitment and mobility grants in the projects under the programme. Other measures such as national graduate-level researcher schools in the polar field, may also be considered, along with potential recruitment positions of polar relevance. The programme will also encourage younger researchers to take on project coordination responsibilities.

5.5 Expand applicable knowledge in trade and industry and the public administration

Changes occurring in the polar regions in general, and the Arctic in particular, are opening up opportunities for more human activity. Society will seek up-to-date information, knowledge and research results that can be quickly applied. POLARPROG will expand expertise and the utilisation of knowledge among the public and private sectors by increasing the involvement and participation of users in research efforts, in designating research needs, and participation in research projects where this is relevant.

5.6 Facilitate dynamic, targeted communication activities

Polar research results are highly relevant for society, and the POLARPROG programme will facilitate their implementation by encouraging summaries and syntheses of knowledge for use by trade and industry, the public administration and the general public. The programme will encourage researchers to take part in the public debate and in compiling international syntheses.

5.7 Increase the accessibility and efficient use of data and research infrastructure

Norway has extensive research infrastructure and a long tradition of collecting, processing and storing vast amounts of data. Norwegian research groups therefore have an advantage in terms of compiling a research base and competing in the international arena. POLARPROG will facilitate the utilisation and processing of time series and data sets for use in research and the public and private sectors, and for better use and coordination of national research infrastructure in areas in which

¹⁴Recruitment to research, the Research Council policy for 2016–2020.

Norway has special advantages, facilities or needs. The programme will comply with the Research Council's Open Access data policy¹⁵.

5.8 Give priority to research related to Svalbard

Svalbard plays a key role in Norwegian polar research, and the programme will use its calls for proposals to prioritise research in and about Svalbard.

5.9 Strengthen research in and about Antarctica

POLARPROG will take steps to strengthen Norwegian Antarctic research. This can be achieved by encouraging greater focus on research in the region in funding and international cooperation measures. Research Council activities must be seen in the context of other national and international support schemes such as the *Norwegian Antarctic Research Expeditions* (NARE) and international calls for proposals.

6 Cooperation with related instruments

The Research Council works to promote integration and effective coordination between its thematic research programmes. The broad thematic orientation of POLARPROG means that effective cooperation with related Research Council activities is necessary to achieve programme objectives. The programme plays a key role in the Research Council's polar research activities and will be a driving force behind this research.

POLARPROG will work to promote cooperation and coordination with related activities via joint strategies, funding announcements, dissemination activities, synthesis activities and meeting places.

Since polar research encompasses a wide range of disciplines and thematic areas, POLARPROG shares an interface with multiple activities, including the following Research Council initiatives (this list is not exhaustive):

- KLIMAFORSK - Large-scale Programme on Climate Research
- MARINFORSK - Research Programme on Marine Resources and the Environment
- MILJØFORSK - Programme on Environmental Research for a Green Transition
- PETROMAKS2 - Large-scale Programme for Petroleum Research
- DEMO 2000 - Programme on project-oriented technology development in the petroleum sector
- NORRUSS+ - Research Programme on Russia and the High North/Arctic
- ROMFORSK - Programme for Space Research
- SAMKUL - Research Programme on the Cultural Conditions Underlying Social Change
- MAROFF - Innovation Programme for Maritime Activities and Offshore Operations
- SSF - Svalbard Science Forum

Several centres under the Centres of Excellence (SFF) scheme and the Centres for Research-based Innovation (SFI) scheme have polar research-related components. In addition, polar research and infrastructure are supported via the FRIPRO funding scheme for independent projects and the National Financing Initiative for Research Infrastructure (INFRASTRUKTUR).

¹⁵ The Research Council's *Policy on Open Access to Research Data* (2017).

7 Anticipated results, impacts and societal outcomes

POLARPROG will follow up developments in the programme with the aim of achieving its stipulated scientific and strategic objectives. The programme will employ the Research Council's general quantifying mechanisms and programme-specific performance indicators to measure and assess whether the programme is on course in achieving its objectives. Regarding the scientific secondary objectives, analyses of the project portfolio will show the extent to which the measures implemented under the programme are helping to meet the knowledge.

The structural secondary objectives will be followed up and assessed regularly, both qualitatively and by using statistics and analyses. Information on how POLARPROG is being implemented, the actions taken and work methods selected, and the collaborative platforms developed will be set out in the programme's annual report. Furthermore, the programme board will assess the programme's performance achievement on an ongoing basis and introduce new concrete measures in the programme's action plans and funding announcements. Portfolio analyses will provide a statistical basis on, among other things: national and international cooperation; user participation; gender perspectives, commercial relevance and involvement of industry actors; gender perspectives in the research; research on Svalbard and the Antarctic; and recruitment and gender balance.

To assess the programme's impacts and societal outcomes in specific fields or thematic areas, the programme administration or programme board may initiate or conduct its own analyses and studies. External evaluations will be required to obtain a comprehensive assessment of the programme's impacts and societal outcomes in terms of reputation, governance and organisation, additionality and achievement of objectives.

8 Resources and budget

POLARPROG was established in 2011 with allocations from the Ministry of Education and Research over the national budget. It is an open-ended programme and has proven particularly important in the follow-up of the climate agreement in the Storting, the white paper on Svalbard, and Norway's Arctic strategy.

The programme is primarily funded by cross-sectoral funding from the Ministry of Education and Research (KD-SO¹⁶), but also receives some funding from the Ministry of Climate and Environment. In 2018 the programme has a total allocation of NOK 58 million in 2018, which includes fees to the *European Polar Board* (EPB) and the *International Arctic Science Committee* (IASC).

9 Governance and organisation

The programme board of POLARPROG is appointed by and reports to the Research Board of the Division for Energy, Resources and the Environment. The activities of the programme board must comply with the framework documents approved by the division research board, including the work programme, action plan, long-term budget and schedule for funding announcements. The programme board's activities must also be in compliance with the Research Council's overall principles and guidelines for the operation of research programmes.

¹⁶ KD-SO refers to the cross-sectoral segment of the Ministry of Education and Research's budget.

The Research Council administration is responsible for all aspects of the programme’s day-to-day operation and for ensuring that this complies with the framework documents, plans and guidelines for the programme. The Research Council administration will serve as the secretariat for the programme board and is responsible for ensuring that the programme board can carry out its tasks.

The applicable terms of reference describe the roles of the programme administration and programme board in the operation of the programme. The terms of reference for the programme board and a list of programme board members may be found [here](#).

Programme logic model for POLARPROG:

Primary objective	Secondary objectives	Activities	Results	Impacts	Societal impacts
POLARPROG will contribute to fulfilling Norway’s special responsibility to generate new research-based knowledge about the polar regions to the benefit of society.	<p>Scientific To increase knowledge about processes that govern climate and environmental change in the polar regions, and their impacts on the natural environment and society.</p> <p>Enhance knowledge about sustainable industrial and social development.</p> <p>Generate knowledge about geopolitical, international law-related and institutional conditions for policy development and sustainable environmental and resource management.</p> <hr/> <p>Structural Promote integrated perspectives and cooperation in polar research.</p> <p>Give priority to research related to Svalbard.</p> <p>Strengthen research in and about the Antarctic.</p>	<p>Issue funding announcements for researcher-initiated projects and invest in outstanding polar research.</p> <p>Encourage boldness in scientific thinking and scientific innovation in projects, and fill knowledge gaps.</p> <p>Involve trade and industry and the public sector in polar research.</p> <p>Issue joint and coordinated funding announcements with priority programmes and priority partner countries.</p> <p>Utilise national competitive advantages in polar research.</p> <p>Provide funding for doctoral and post-doctoral research fellows.</p> <p>Facilitate dissemination of findings and results.</p>	<p>A targeted project portfolio</p> <p>High-quality scholarly publications</p> <p>R&D institutes have greater collaboration with trade and industry and the public sector.</p> <p>Users and the public sector have applicable knowledge and enhanced expertise.</p> <p>Norwegian research groups have a visible international profile, contribute to the global knowledge pool and influence international research priorities.</p> <p>Higher number of completed doctoral degrees and of young project managers in projects</p> <p>Effective dissemination of project results via various channels</p>	<p>Norwegian polar research groups maintain their expertise and quality and contribute to global knowledge production.</p> <p>Norway maintains its position as the third-largest producer of polar research scientific articles.</p> <p>Enhanced expertise on polar issues in the public administration, trade and industry and society as a whole</p> <p>The enhanced knowledge base is used for better management and policy design.</p> <p>Increased participation in internationally funded projects</p> <p>A new generation of polar researchers is recruited.</p>	<p>Norway has an extensive knowledge base for sustainable management and industrial development in the polar regions.</p> <p>Polar research provides a scientific basis for realising Norway’s commitments under the Paris Agreement and the Antarctic Treaty, and achieving national targets and polar-relevant UN sustainability goals.</p>

	<p>In addition: promote creative thinking and innovation, enhance the international profile and contribution of Norwegian research groups, ensure recruitment, expand applicable knowledge, facilitate communication activities, and increase the efficient use of data and research infrastructure.</p>	<p>Strengthen coordinated use of research infrastructure and comply with the Research Council's Policy on Open Access to Research Data.</p>	<p>Greater scientific capacity at R&D institutions</p>		
--	--	---	--	--	--



The Research Council of Norway
Drammensveien 288
P.O. Box 564
N-1327 Lysaker

Telephone: +47 22 03 70 00
Telefax: +47 22 03 70 01
post@rcn.no
www.rcn.no

Cover design: Design et cetera AS
Cover photo: Shutterstock

Oslo, February 2018

ISBN 978-82-12-03761-0 (pdf)

This publication may be ordered and
downloaded at [www.forskningsradet.no/
publikasjoner](http://www.forskningsradet.no/publikasjoner)