



EU-PolarNet

*Co-ordinating and Co-designing
the European Polar Research Area*

DIRECTORY OF EUROPEAN POLAR RESEARCH FUNDING PROGRAMMES



Photo from the Arctic Century Expedition, an Argo float being deployed on the sea ice. Photo: © 2021 Swiss Polar Institute, CC BY 4.0
Title: Sunset view of Smith Island, Photo: Dragomir Mateev



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Hunter's glacier, Livingston Island. Photo: Oleg Vassilev

Introduction

The polar regions are sentinels of climate change and human resilience and they are also a proven bastion for international cooperation in research and nature protection. European researchers have made significant contributions to understand the consequences of climate change and the structure and functioning of ecosystems at both polar regions, and their global interconnections. Unifying, disseminating and coordinating all European research actions is one of the tasks of the EU-PolarNet 2 project. EU-PolarNet 2 - "Coordinating and co-designing the European Polar Research Area" is a coordination and support action funded by the European Commission in Horizon 2020. It comprises 25 partners representing all European and associated countries with well-developed Polar research programmes and activities. EU-PolarNet 2 aims to provide a platform to co-develop strategies to advance European polar research and its contribution to policy-making processes. By involving all relevant stake- and rightsholders it supports the development of transdisciplinary and transnational polar research actions of high societal relevance. To ensure that such an important platform is sustained after the four years of project duration, the project works with funding agencies, national polar research institutes, operators of national polar programmes, polar experts and the European polar research community to discuss and implement the identified research actions. The final goal of EU-PolarNet 2 is to create a permanent European Polar Coordination Office which will continue the work of EU-PolarNet 2 in a sustained way.

A strong European polar research environment requires efficient and effective national and European polar research programmes that are complementary and coordinated. Improved understanding of the landscape and diversity of the strategies, structure and priorities of polar research funding in Europe may therefore also contribute to facilitate stronger cooperation between them and by that contribute to the establishment of a European Polar Research Area. The **"Directory of Polar research funding programmes in Europe"** at hand is EU-PolarNet 2's initial step to improve the coordination and cooperation of national polar funding organisations in Europe. The directory provides an overview about the governance, strategies, and procedures of polar research funding in Europe.

With publishing this directory, EU-PolarNet 2 aims to contribute to improving the efficiency and effectiveness of European polar research. A better overview and understanding of each other's activities and structures shall avoid overlap, minimise fragmentation, and ensures the synergetic use of national resources and investments.



*Nicole Biebow, EU-PolarNet 2 Coordinator, Alfred Wegener Institute
Photo: Kerstin Rolfes / AWI*



*Jon Børre Ørbæk, Work Package 4 leader, Research Council of Norway
Photo: Jon Børre Ørbæk*

The directory at hand is closely related and complementary to another EU-PolarNet 2 deliverable, which is the "Catalogue of national polar research programmes and other large-scale programmes". Both deliverables have been developed together and are the result of a survey that was sent out to the whole EU-PolarNet 2 consortium asking a wide range of questions to collect as much information as possible. The information received for the directory reflects the different approach of each country to polar policy and research funding. The result is a structured but diverse document bidding the opportunity for countries to gain a better insight in each others procedures and to intensify their collaborations. EU-PolarNet 2 will in the next steps publish a White Paper analysing the landscape and cooperation potential of the programmes. After consultations and dialogue with funding agencies and stakeholders, the final goal is to provide recommendations for a partnership in polar research under Horizon Europe supporting the implementation and development of future European research actions.



Greenland Mittivakkat c Glacier. Photo: W. Schöner

Polar research funding organisations and governance

Austrian polar research is diverse and not anchored in any funding organisation or polar programme. A larger number of funding organisations allow funding of polar research, but research proposals are always in competition with all other research disciplines. Funding institutions which are open to polar research in Austria are:

The [Austrian Academy of Sciences \(ÖAW\)](#) runs specific calls for proposals e.g. to Earth System Sciences ESS (led by the ÖAW for the Federal Ministry of Education, Science and Research) open for topics of polar research. It aims to research the earth as a system, thus seeking to fill gaps in the Austrian research landscape, for instance with regard to interdisciplinary projects, long-term research projects and pioneering research. The three thematic orientations of the ESS programme are global change, geo/hydro sciences and UNESCO Man and the Biosphere.

The [Austrian Science Fund \(FWF\)](#) is the main funding organisation for basic research in Austria open for all disciplines of research. The purpose of the FWF is to support the ongoing development of Austrian science and basic research at a high international level. In this way, the FWF makes a significant con-

tribution to the advancement of a knowledge-based society, and thus to the creation of value in Austria.

The [Austrian Research Promotion Agency \(FFG\)](#) is the main funding organisation for applied research, including a specific programme for space research including remote sensing. Its funding schemes play an important role in generating new knowledge, developing new products and services, and enhancing competitiveness in the global marketplace. FFG make it easier, or possible, to finance research and innovation projects, and help to absorb the risks involved in research. The FFG supports international networking and encourages careers in science.

The [Federal Ministry of Education, Science and Research](#) gives funding for basic research and supports research within the framework of global budgeting of the universities and specific programmes as e.g. [Sparkling Science](#) tailored to promotion of research-education cooperation.

The [Federal Ministry of Climate Action, Environment, Mobility, Innovation and Technology](#) and the [Federal Ministry for Digital and Economic Affairs](#) fund business-oriented research.

Polar research strategies and coordination

Austria has no dedicated polar research strategy or research programme focusing on polar regions. Polar research falls into the overall competitive R&I agenda.

There is no clear responsibility for polar research activities by governmental authorities in Austria. Austrian research funding is split into two key fields, basic research and applied research represented by different ministries which is also the case for polar research.

All funding agencies are open for both research in Antarctica and the Arctic. There is no specific funding for logistics.

At the level above the ministries, the [Austrian Council for Research and Technology Development](#) advises the Austrian federal government on the general strategy for research development and research funding in Austria.

Polar research funding and application procedures

The funding procedure generally comprises an evaluation of the scientific value of the proposals and additionally (but not in all cases) a trade-off according to strategic planning and international programmes. This applies to the main research funding organisations in Austria:

- [Austrian Science Fund](#) (FWF)
- [Austrian Research Promotion Agency](#) (FFG)
- [Austrian Academy of Sciences](#) (ÖAW)

After the International Polar Year 2007/08, Austrian polar research received funding from the Federal Ministry of Science and Research for the strategic development of polar research, which enabled both the Austrian Polar Research Institute APRI and membership in the International Arctic Science Committee to be established.



Greenland Zackenberg. Photo: C. G. Weyss

Substantial International research collaborations

Austria is member of the following international polar organisations: EPB for both polar regions, ISAC, the University of the Arctic (UArctic) and IASSA in the Arctic, and SCAR in the Antarctic. Austrian funding agencies (see above) participate in several European/international research initiatives such as e.g. ESFRI, JPI Climate, BiodivERSA, ERA4CS and the Belmont Forum.



Princess Elisabeth Station Antarctica. Photo: Polar Secretariat

Polar research funding organisations and governance

The [Belgian Federal Science Policy \(BELSPO\)](#) depends on the Ministry of Science Policy. Its mission is to optimise and strengthen the working of the Belgian, European and international research area by coordinating the research efforts of all public authorities in the country and inserting Belgian researchers in international research networks. BELSPO prepares and manages a portfolio of funding actions including various research programmes, research infrastructures and science-policy interfaces, and participates in national and international cooperation initiatives, inter alia related to the Arctic and the Antarctic. Thanks to its [research programmes](#), its [federal scientific institutes](#) and with 2300 employees, BELSPO brings together a wide range of expertise in various research fields. BELSPO is involved in various [European research initiatives](#) (ERA-NET, JPI, ESFRI etc.). BELSPO is responsible for the follow-up of the [bilateral agreements](#) for economic, industrial, scientific and technological cooperation with a number of countries. BELSPO also manages the Belgian contribution to the [European Space Agency](#). [Contact](#)

The [Research Foundation - Flanders \(FWO\)](#) finances Arctic as well as Antarctic research. Its mission is to stimulate and financially support fundamental scientific research, strategic basic

research, clinical scientific research, the purchase of large-scale and medium-scale research infrastructure, and the management of large computing capacity in Flanders. FWO is a member of [Science Europe](#) and supports the activities of the [European Research Council \(ERC\)](#) through various initiatives. In addition, FWO is involved in various European research initiatives (ERA-NET, JPI, ESFRI etc.) through a range of programmes. Furthermore, FWO has signed a large number of [bilateral cooperation agreements](#) with leading funding agencies worldwide.

[Contact](#)

The [Fund for Scientific Research \(F.R.S.-FNRS\)](#) finances Arctic as well as Antarctic research. Its mission is to develop basic scientific research in the framework of initiatives presented by researchers. It promotes the production and development of knowledge by supporting individual researchers and by financing research programmes carried out in laboratories and departments in the universities of the Wallonia-Brussels Federation. FNRS is involved in various [European research initiatives](#) (ERA-NET, JPI, ESFRI etc.).

The Belgian Polar Secretariat is a state service part of BELSPO created in 2009 and responsible for the financial, administrative and operational management of the [Belgian Princess Elisabeth](#)

Station and the coordination and implementation of the campaigns to the station (BELARE - Belgian Antarctic Research Expedition).

Polar research strategies and coordination

Belgium no longer has a dedicated polar research programme. The three research funding agencies have different missions and regional coverage and work independently from each other. Each funding organisation defines its own direction, science strategies, research prioritisation and coordination. Even though there is no strategic coordination between the three funding organisations, the type of funding is highly complementary - fundamental versus strategic, short-term versus long-term research.

Polar research falls into the overall competitive R&I agenda within the three funding agencies. Because of historical reasons and current Belgian operational activities, Belgian research activities are more prominent in the Antarctic, but BELSPO, FWO and FNRS all fund polar research in the Antarctic as well as the Arctic.

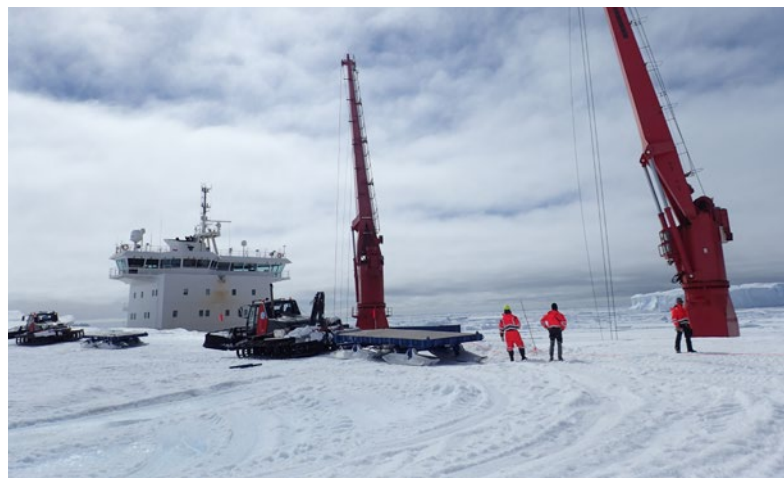
BELSPO organises the federal consultation in R&D in order to exchange information relating to policies led by the various Belgian authorities and to determine common stances.

The overarching priority research themes and topics are defined, considering the Belgian expertise (bottom-up), international research priorities defined by overarching science organisations such as SCAR, and IASC (top-down) and logistic availabilities and collaboration possibilities. They are generally broad, covering a wide variety of disciplines.

Polar research funding and application procedures

Requests for funding are introduced via calls for proposals launched by the different funding agencies ([BELSPO](#), [FWO](#), [FNRS](#)).

Depending on the funding organisation and the programme, proposals are scientifically evaluated by foreign and/or Belgian peers, followed by a strategic selection taking into account available funding, links with ongoing (inter)national initiatives and coverage of research themes. International researchers can



January 2016; unloading at the coast. Photo: BELSPO

participate in a Belgian coordinated project, in some cases with Belgian co-funding.

Some science-initiatives foresee a co-financing of the cooperation with non-Belgian universities or public research institutes within the Belgian research project. This co-financing tool is an extra incentive for international collaboration. Even without co-funding, international collaboration is encouraged and part of the scientific evaluation scheme.

Several Belgian projects perform their fieldwork from the Princess Elisabeth station in close collaboration with international researchers.

Logistics is open to foreign researchers. However, priority is given to projects in collaboration with Belgian scientists, thereby promoting research collaboration and preventing research competition. In case of collaboration with Belgian scientists, access to logistics is funded by BELSPO.

Substantial International research collaborations

The three funding agencies participate to various European research initiatives (ERA-NET, JPI, ESFRI etc.) through a range of funding programmes:

- [JPI Oceans](#)
- [JPI Climate - BELSPO hosts the secretariat](#)
- [BiodivERsA](#)
- [BiodivScen](#)
- [ERA-Net AXIS](#)
- [ERA4CS](#)

BELSPO has signed Memoranda of Understanding (MoUs) with Argentina, Chili, China, France, Japan, Peru and South-Africa to enhance scientific cooperation in Polar Science and Technology.



Bulgaria



Burdick Ridge, Livingston Island. Photo: Dragomir Mateev

Polar research funding organisations and governance

The [Ministry of Education and Science \(MES\)](#) funds both the national polar infrastructure on Antarctica (through the National Roadmap for scientific infrastructure programme) and the National Programme for Polar Research. In addition, **The Bulgarian National Science Fund (BNSF)**, which is part of MES, funds scientific projects, (some of them in the polar regions) on a general competitive base.

Funding is operated by the [National Centre for Polar Studies \(NCPS\)](#), Sofia University St Kliment Ohridski and the [Bulgarian Antarctic Institute \(BAI\)](#). Annually, NCPS and BAI apply to the MES for the funds and operate their usage within the National Programme for Polar Research and the National Roadmap for scientific infrastructure.

Additional institutional funding is received from the [Ministry of Environment and Water \(MOEW\)](#) for the infrastructure in relation to environmental improvements.

Polar research strategies and coordination

Currently, Bulgaria has a dedicated National Programme for Polar Research, which was adopted by a decision of the Council of Ministers in 2016. The Programme is coordinated by the Ministry of Education and Science and administered by the National Centre for Polar Studies, Sofia University St. Kliment Ohridski.

The main organisations in control of providing direction, science strategies, research prioritisation and coordination are BAI (Bulgarian Antarctic Institute) and the National Centre for Polar Studies (NCPS). Both organisations are also responsible for the Bulgarian Antarctic base.



Sunset view of Smith Island. Photo: Dragomir Mateev

Polar research funding and application procedures

Since 2016, three annual national calls for funding of polar projects have been launched within the frame of the National Programme for Polar Research. These calls are open to all scientists and research institutions in Bulgaria. The national call for polar research is organised by the National Centre for Polar Studies. The funds for the national calls come from the Ministry of Education and Science.

Applicants submit a project within one of the main areas of research: Earth Science, Biology and Ecology, Medicine, Geodesy and GIS, Oceanography, Engineering and Humanitarian studies. Each project is evaluated by peer review experts with established knowledge in the subject. If the project is accepted, a compulsory medical evaluation is performed.

Logistics and services are available to international applicants who are members of the scientific team of evaluated and accepted Bulgarian projects as well as to non-Bulgarian projects. They are provided with transportation from South America to Antarctica and back, as well as stay at the base and logistic support while on it.

All foreign participants are responsible for their own transportation to and from a hub city in South America, their insurance and stay while outside Antarctica.

The funds for logistics come from the Ministry of Education and Science through the National Polar Programme. Logistics and services are available for the successfully evaluated scientific projects from the annual national polar call, as well as for the projects that are funded by the Bulgarian National Science Fund (BNSF) which is part of the Ministry of Education and Science.

Substantial International research collaborations

Bulgaria does not participate in any large - scale international funding programmes at this moment.



Czech Republic



Automatic Weather Station and Open Top experimental site in Petunia Bay (in winter, Svalbard). Photo: Archive of the Centre for Polar Ecology, University of South Bohemia, Ceske Budejovice

Polar research funding organisations and governance

There is currently no coordination of polar research activities in Czechia. The Czech polar research programme is carried out by a network of research institutions, universities, governmental and non-governmental institutions distributed across the whole country. The Czech polar research is funded by grant agencies ([Grant Agency of the Czech Republic](#), [Technology Agency of the Czech Republic](#), and grant agencies of ministries – [Ministry of Education, Youth and Sport](#), [Ministry of Foreign Affairs](#), [Ministry of the Environment](#)). Logistics at both stations is supported by particular universities.

List of governmental polar authorities and strategies:

- [Ministry of Education, Youth and Sport](#)
- [Ministry of Foreign Affairs](#)
- [Ministry of the Environment](#)

At ministerial level, there is the Committee for the Antarctic within the Ministry of the Environment. Since 2008, polar research institutions have been associated in the National Centre for Polar Research.

Polar research strategies and coordination

At present, there is no state coordination of Czech polar research. However, the institutions and ministries are currently discussing how polar research will be governed in the future.

Two universities, the [University of South Bohemia](#) in České Budějovice, and the [Masaryk University](#) in Brno manage the two polar infrastructures respectively Arctic Research Infrastructure “Josef Svoboda Station” in Svalbard, and the Antarctic Research Infrastructure “J. G. Mendel Station” in James Ross Island.



*Adventfjord, experimental site - tide flat with invasive algae *Vaucheria compacta*
Photo: Archive of the Centre for Polar Ecology, University of South Bohemia,
České Budějovice*

Polar research funding and application procedures

Research projects are selected within the overall competitive R&I agenda (application via Czech Grant Agencies: [Czech science foundation](#) (GACR), [Technology Agency of the Czech Republic](#) (TACR), [Ministry of Education, Youth and Sports](#) (MŠMT) via [international grant agencies](#) or via INTERACT and other international initiatives ([application](#)).

Scientists can [apply](#) for a research collaboration as well as for the use of the station and logistic support for the station.

The Josef Svoboda Station located in the central part of the Svalbard archipelago is used by Czech and foreign scientists and offers all the comfort and logistics facilities for research in Svalbard. It may be used only for scientific purposes under a contractual agreement with the operator. All research projects must be registered in the database 'Research in Svalbard'.

Substantial International research collaborations

In the last period there was collaboration with 106 international institutions (72% - universities and 28% - research institutions).

Czech polar researchers are cooperating with several international and European partners through collaboration agreements to perform research in the Arctic and Antarctic.



Denmark & Greenland



Photo: Marie Frost Arndal

Polar research funding organisations and governance

Denmark has three major funding bodies where proposals on Arctic science may apply for competitive funding:

- The [Danish National Research Foundation](#) funds cutting-edge, curiosity-driven research-centres of excellence.
- The [Independent Research Fund](#) supports specific research activities within all scientific areas that are based on the researchers' own initiatives.
- The [Innovation Fund Denmark](#) invests in advancing research into science and technology and facilitates innovative solutions that benefit Danish growth and employment.

In addition to public grants and funding bodies, the funding landscape in Denmark is characterised by a significant philanthropic tradition when it comes to private funding of Arctic research and infrastructure.

In Greenland, the [Greenland Research Council](#) works to promote and strengthen research rooted in and benefitting Greenland. The council finances research and handles the research advice for e.g. the Minister of Research, the Naalakkersuisut (Greenland Government) and international stakeholders. The Greenland Re-

search Council engages with international partners to promote collaboration between Greenland and international research communities.

The polar research budget is partly (38%) financed by the institutions through institutional budgets (basic funding), partly through external sources such as research councils. Research councils account for approximately 16% of the total amount spent on polar research in the Kingdom. Ministries 17% (excluding appropriations allocated to the institutions as basic funding). Together, 79% of the polar research is funded through public sources within the Kingdom. 4% of the research funding comes from private funds. Business/industry contribute for 7%. Almost 10% of the expenditure is financed through foreign funding sources. In general, the EU Framework Programme is an important source of research funding in Denmark. It is the ambition of Ministry of Higher Education and Science (UFM) to make Arctic challenges more visible in Horizon Europe.

The [Ministry of Higher Education and Science \(UFM\)](#) funds many grants that support Arctic research in the Kingdom of Denmark. These include, inter alia, the programme Marine research in the North Atlantic Ocean run by the Research Council of the Faroe Islands, the Arctic Hub, which is financed jointly by Denmark and

Greenland, and funds for the Greenland Climate Research Centre. UFM also funds international networking projects under University of the Arctic (UArctic). UFM also provides funding for networking activities under an International Network Programme (INP) that can build a foundation for future project cooperation with Arctic partner countries. Collaboration partners in the selected countries can be government research institutions and other R&D-institutions, higher education institutions, national cluster organisations and Research and Technology Organisation (RTOs), national and local authorities, and private companies with significant R&D activities.

The ministry of Education, Culture, Sports, and Church (IKIN) funds some grants that support culture, sports, and research projects in Greenland. These include PhD projects and a small funding grant for research pilot projects or similar smaller projects. The funding for PhD and research projects is allocated through the Greenland Research Council. The Ministry also supports the Arctic Hub jointly with UFM. In the new Greenland research strategy international collaboration is of high priority as is the embedding of international research projects within Greenland institutions.

Polar research strategies and coordination

Denmark does not have a strategy for Arctic research and education at the moment. The Government of Greenland is currently working on a Research Strategy to describe Naalakkersuisut's long-term visions and goals for Greenland and international research in the country. The establishment of the new research hub in Nuuk represents one of the initiatives contained in the action plan.

The three parts of the Kingdom of Denmark (Denmark, Greenland, and the Faroe Islands), have a common strategy for the Arctic running from 2011- 2020 where the three governments have set out the most common political objectives for the Arctic. The three governments are currently working on a new strategy for the Arctic for the period 2021-2030. This strategy, on par with the former document, will have a significant focus on research and education and the role it plays in keeping the Arctic regions as peaceful and prosperous as possible.

[Read the Kingdom's strategy for the Arctic 2011- 2020 here.](#)

In Denmark, DAFHE and UFM have the responsibility for national polar research strategies and fund many grants that support Arctic research in the Kingdom of Denmark. The KFEM (Danish Ministry of Climate, Energy and Utilities) administers the DANCEA programme which supports evidence-based knowledge building related to Arctic nature, biodiversity, environment and climate issues.

An important platform for the coordination of polar research in Denmark and Greenland is the [Forum for Arctic research \(FAF\)](#). FAF operates as an informal platform for the Arctic university leads from all parts of the Danish realm, where Arctic research issues can be discussed and co-ordinated across disciplines and institutions. The Forum serves as a coordinating body for the key players and stakeholders within the polar research environments. It provides political perspectives and recommendations but has no formal decision-making or advisory authority.

[Isaaffik](#) is a user-driven web-portal that provides overview and supports collaboration on science and infrastructure in the Arctic regions.

Polar research funding and application procedures

Today there are no specific, targeted Danish and Greenland research programmes for Arctic research. This means that research in and about the Arctic must be retained within the existing research programmes and is subject to free competition, which is a guiding principle in the Danish and Greenland system of research councils. Funding opportunities for all research are often a combination of several financing sources and a mixture of public and private players. Applications for access to infrastructure are most often done by contacting the relevant operators.

Substantial International research collaborations

Denmark does not have a specific strategy for international research collaboration but participates in a range of ongoing international programmes and initiatives such as the MOSAiC expedition, IASC, SCAR, FARO, EPB and INTERACT.

The Greenland Research Council engages with international partners to promote collaboration between Greenland and international research communities.

The most recent and ambitious platform for Arctic international collaboration in Denmark and Greenland is the newly established [Arctic Hub \(AH\)](#). Arctic Hub is an element in Greenland and Denmark's efforts to create and facilitate increased international cooperation in the Arctic, as it is laid out in the Arctic Council's Agreement on Enhancing International Arctic Scientific Cooperation, and in the Government of Greenland's Research Strategy. In particular, the function of the Arctic Hub is to support Arctic research by facilitating collaboration and dialogue between researchers and research groups. Arctic Hub has six interdependent focus areas, which are: research, education, international cooperation, dissemination and citizen involvement, business, and consultancy.



Estonia

Estonian researchers profiling the water salinity and temperature at Storfjord on eastcoast of Svalbard in the frame of Damocles project. Photo: Timo Palo

Polar research funding organisations and governance

The [Ministry of Education and Research](#) implements the national research policy, organises the financing and evaluation of the activities of R&D institutions and coordinates international research cooperation at the national level. The Ministry is also responsible for the planning, coordination, execution and monitoring of the research policy related to the activities of universities and research institutes.

The main funding body for R&D in Estonia is the [Estonian Research Council \(ERC\)](#).

Polar research strategies and coordination

Currently, Estonia does not have an official national polar programme. The “Estonian polar research programme 2014-2020” was developed by a group of Estonian polar research experts under guidance of the Ministry of Education and Research in 2012. The Estonian Research Council organised the international evaluation of the programme which was accepted by the Ministry of Education and Research. Due to a restricted R&D budget and a recent lack of interest in polar research at the governmental (political) level, the programme was never activated.

Polar research funding and application procedures

The application, selection and evaluation for polar research projects funded by the Estonian Research Council falls into the general procedures from any field of science. An institutional research funding is awarded on a competitive basis to fund high-level research, development and related activities of a research and development institution. All researchers working at [Estonian R&D institutions](#), regardless of their citizenship or country of origin, can apply for research funding.

The grants are financed from the Estonian state budget by the directive of the Minister of Education and Research. The calls are organised by the Estonian Research Council. The Evaluation Committee of the Estonian Research Council is responsible for the evaluation of the applications as well as for drafting the funding proposal. The amount of annual institutional funding is established by a directive of the Minister of Education and Research on the recommendation by the Estonian Research Council.

On a regular basis, the following research grants can be applied for, corresponding to the different levels of a research career:

- A postdoctoral research grant: aimed at supporting the launch of a research career of researchers with a doctoral degree

obtained from an Estonian university or at a foreign R&D institution.

- A starting grant: aimed at supporting researchers with initial research experience to launch their independent research career at an Estonian R&D institution, to set up their research group, and to contribute to educating the next generation of researchers (incl. doctoral students).
- A team grant: aimed at supporting researchers in continuing their research career at an Estonian R&D institution, ensuring high-quality research, leading a strong research group, and educating the next generation of researchers (incl. doctoral students).

Since autumn 2021, the Estonian Research and Development Council, an advisory body to the Government of the Republic, advises the Government on the preparation of the draft state budget. It recommends the amounts to be allocated to research and development and to different ministries and types of funding for research and development according to their competence. Through this new financing scheme, the Estonian Ministry of Foreign Affairs (MoFA) received a sum for 2022 to develop research in the Arctic to enhance the visibility of Estonian R&D in this strategically important region. The main aim is to train a new generation of researchers in the field of polar research. MoFA will issue a call to finance a limited number of grants for research in the Arctic areas in spring 2022.

Substantial International research collaborations

Estonia has no infrastructures and logistics in polar areas and relies mainly on the logistics of its international partners.

During the Soviet period, the Estonian polar community cooperated primarily with the [Institute of Geography of the Russian Academy of Sciences \(IGRAS\)](#), which conducted ice core research as part of its glacier expedition to Svalbard. Estonia is working with the Arctic and Antarctic Institute in St Petersburg on ice cores from Severnaya Zemlya and from Antarctica (Dome B) in cooperation with the French ice core group from Grenoble.

Since 1991, cooperation in the Arctic has mainly been with the Norwegian Polar Institute. In Antarctica, there have been collaborations with Australia, India, Chile, Italy, Finland and Argentina since 1991.

Research in Antarctica is performed in close cooperation with Australia, India, Chile, Argentina and Italy.

The Estonian polar research community has built a good international reputation thanks to research performed in the Arctic and Antarctic, mainly through participation in different international projects including the EU FP projects.

In the EU projects DAMOCLES and within the international MO-SAiC expedition, Estonia cooperated with the AWI (Germany), the Finnish Meteorological Institute (Finland), Bern University (Switzerland), Heidelberg University (Germany), Hefei University of Technology (China) and with Argonne National Lab (USA).



Installation of solarphotometer by Estonian scientist at Polish station Hornsund on Svalbard. Photo: Timo Palo



Faroe Islands



Two Islands called Skúvoy and Sandoy. Photo: Jóhannes Danielsen

Polar research funding organisations and governance

Part of the research funded by the [Ministry of Foreign Affairs and Culture](#) is conducted in the university of the Faroe Islands, while a greater part is carried out in other governmental research institutions.

The [Research Council Faroe Islands](#) is the administration of the national research fund (Granskingargrunnur) and is governed by a board of five members representing the research community, covering relevant thematic areas. The administration also provides advice on 'how to apply' and hosts the National Contact Point service for Horizon Europe. In addition to informing about programme parts of Horizon Europe, the administration also sets the national agenda on policy issues and international standards.

The [Danish Environmental Protection Agency \(EPA\)](#) funds Arctic research and the work within the [Arctic Monitoring and Assessment Programme \(AMAP\)](#).

The research activities of the [Department of Public and Occupational Medicine and Public Health](#) have for three decades been within the priorities set by the AMAP Human Health group. The

funds come from the Dancea programme under the Danish Environmental Protection Agency, the Faroese Research Council and US-National Institutes of Health. The operator is co-lead of the AMAP Human Health Assessment Group, covering all circumpolar areas.

Polar research strategies and coordination

At the moment, there is no specific polar research strategy or programme available with respect to polar research activities and operations for the Faroe Islands. However, international co-operation and national initiatives are in line with Arctic and European policies. Faroese institutions focus on a number of areas on the Arctic, especially on marine and climate related research.

The Ministry of Foreign Affairs and Culture is preparing to launch a Faroese strategy for the Arctic at the end of 2021. The Faroe Islands are also co-author on the Kingdom of Denmark Strategy for the Arctic 2021-2030 – also in progress. The Faroe Islands have exclusive competence in research issues and contribute on equal terms to the joint Arctic strategy. Marine research on the Faroe Islands is partly supported by funds from the Danish Government, but the strategy in the area is Faroese responsibility.



Two Islands called Skúvoy and Nólsoy. Photo: Jóhannes Danielsen

The latest national research strategy and action plan under the headline “Knowledge & Growth” covered the period 2011-2015.

In January 2021, a new Act on Research, Development and Innovation came into force combining the three areas that had previously been managed separately. By law, a new Strategic Council on Research and Innovation will be established to coordinate all federal grants, support applicants, and develop a new strategic plan for 2021. Another duty of the council lies in strategic consultancy to the government and industry in questions of research, development, and innovation as well as international collaboration. No smart specialisation strategy has yet been developed at the national or regional level, but initial discussions on this topic are already taking place. Marine and Arctic research on the Faroe Islands is partly covered by Danish strategic programmes such as the Strategy for Research and Education concerning the Arctic from 2016, which was closely linked to the Kingdom of Denmark Strategy for the Arctic (2011-2020).

Polar research funding and application procedures

There is no specific polar research programme, but funds can be sought from the Research Council Faroe Islands’ annual general call. The calls are open for international applicants, but projects need to be of relevance to the Faroese Society. In practice it is recommended to cooperate with Faroese partners. [Conditions and procedure](#).

A dedicated call for Marine Research in the North Atlantic Ocean running from 2020-2023 is funded by Denmark and open for cooperation with international partners with own funding. [Conditions and procedure](#).

Substantial International research collaborations

The Faroe Islands have participated as an Associated Country in the European Framework Programmes for Research and Innovation since 2010 - (FP7 and Horizon 2020). It is foreseen that they also become an Associated Country in Horizon Europe, 2021-2027. The negotiations on the agreement concerning the association to Horizon Europe have been finalised and partners from the Faroe Islands may already participate on equal footing as Europeans.

[Nordic Atlantic Cooperation \(NORA\)](#) is an intergovernmental organisation under the regional cooperation programme of the Nordic Council of Ministers that brings together Greenland, Iceland, Faroe Islands and coastal Norway. The NORA constituents are interlinked by their location, shared traits and common challenges, in addition to multiple historical, institutional and cultural ties. The main office is in Tórshavn.

The Faroe Islands are also part of the Nordic R&I cooperation with observer status on the boards of [NordForsk](#) and [Nordic Innovation](#) and have access to funding from these organisations.

In the area of Health there are strong relations with the US, and a number of projects are funded by the [National Institutes of Health \(NHS\)](#).

Jarðfeingi, the Faroese Geological Survey, is part of the [INTER-ACT](#) project, a circumarctic network of currently 89 terrestrial field bases in northern Europe, Russia, US, Canada, Greenland, Iceland, the Faroe Islands and Scotland as well as stations in northern alpine areas.



Finland



Oulanka Research Station. Photo: Lasse Lecklin

Polar research funding organisations and governance

Arctic research in Finland is not administrated by a specific secretariat or a programme and is therefore not labelled as such and no specific records are available. A [recent survey](#) (2019, Prime Minister's office) concluded that it is impossible to either estimate or give a full picture of Arctic research public funding in Finland as it so scattered and comes from many sources incl. the business and industry sector. As an example, the survey lists the largest competing funders of Arctic research in Finland (in order from largest to smallest): EU, Academy of Finland, Ministries, Nordic funding sources, national private foundations, European Space Agency, and Business Finland (R&D, innovations).

The main research funding agency in Finland is the [Academy of Finland](#) where Arctic research is part of regular research funding calls. Other important national funders for Arctic research are ministries, mainly the [Ministry of Agriculture and Forestry \(MMM\)](#), the [Ministry of the Environment \(YM\)](#) and the [Ministry of Foreign Affairs \(UM\)](#).

The [Academy of Finland](#) is responsible for funding Finland's Arctic research projects. Since 1998, the Academy has regularly

organised a call for applications for Antarctic research with the latest call in 2020 for years 2021-24. The scope of the call covers all relevant areas of Antarctic research. The research may be global or circumpolar, focusing on both polar regions, but it must be research that cannot be conducted without Antarctic data. In accordance with Finland's Antarctic Research Strategy (2014), the funding supports interactive and multidisciplinary research. Only projects that involve international collaboration are eligible to receive funding. Applicants can be independent researchers or research consortia.

The [Finnish Antarctic Research Programme \(FINNARP\)](#) operations office is responsible for the logistics and maintenance of Aboa, the Finnish research station in Antarctica. FINNARP operates in connection with the [Finnish Meteorological Institute](#) under the [Ministry of Transport and Communications](#). FINNARP's main responsibilities are to perform Finnish Antarctic research activities in accordance with the Finnish Antarctic Strategy, to maintain Aboa, to arrange field research and supervise that both national and international law and obligations are complied with. In addition, FINNARP manages travelling expenses, transportation and health care of Antarctic expeditioners to Aboa and other destinations.

Polar research strategies and coordination

Polar research in Finland follows the policies set in Finland's Strategy for Arctic Policy and Antarctic Research Strategy (2014). The Arctic strategy was initially written in 2013, updated in 2016 and renewed in 2021 to Finland's Strategy for Arctic Policy. In Finland, the whole country is referred as an Arctic region and Arctic research falls into the overall competitive R&I agenda and there is no national polar programme or secretariat. All universities, Universities of Applied Sciences, and national research institutions in Finland operate in the Arctic and there is a well-established regional, national, and international cooperation between all these three actors.

Some Finnish universities have specific Arctic strategies and the [University of Helsinki](#), [University of Turku](#) and [University of Oulu](#) operate also research stations including the marine Baltic Sea stations Tvärminne Zoological Station and Archipelago Research Institute Seili as well as e.g. the most Northern research stations in Finland: [Kilpisjärvi](#) and [Kevo](#). The basic funding for Arctic research at the University of Oulu and at the University of Lapland is around 10 million euros annually for each university. In addition, both universities as well as all other Finnish universities have several millions of Arctic research funding from national and international competitive funding schemes (Academy, EU, Nordic, etc). The University of Oulu has internally formed an Arctic Researchers Network with special targeted mobility and networking grants. Around 160 Arctic researchers from the University of Oulu are included into the network. The Finnish Meteorological Institute (FMI) operates e.g. the Arctic Space Center (FMI-ARC) in [Sodankylä](#) which hosts the National Satellite Data Centre (NSDC). The Sodankylä Supersite is an essential platform for ESA and NASA to develop products and the scientific end-use of data from such globally essential environment and climate monitoring satellites. FMI also operates the Pallas Atmosphere-Ecosystem Supersite (67.973°N, 24.116°E), located 170 km north of the Arctic Circle.

Polar research funding and application procedures

Since 1998, the Academy of Finland has regularly organised a call for applications for Antarctic research. The Research Council for Natural Sciences and Engineering is responsible for organising the call. Applicants are independent researchers or research consortia.

International collaboration is included, required, and expected in research funding instruments and activities conducted in each of the Finnish Universities and therefore international research consortia are open to all international cooperation partners. In-

ternational partners cannot apply funding from national Finnish funding schemes, but they can be partners in the projects and thus be funded for a research visit. International students are eligible to apply for funded PhD positions at the graduate schools of the Universities in Finland. Calls are opened regularly for specific graduate programmes including also polar research topics.

International partners are welcome to do research at Finnish polar research infrastructures and can access them via cooperation in funded projects, such as [INTERACT](#) or by contacting the secretariat of the infrastructure. Infrastructures welcome also purely international research groups working with their own research funding.

Substantial International research collaborations

The Finnish polar community contributes to large international networks and organisations, such as

- Arctic Council and its working groups,
- University of Arctic and Arctic Five,
- Barents cooperation,
- IASSA, IASC, SCAR, LTER, EPB, INTERACT.

The cooperation, particularly with all Nordic countries, in the Barents region and with Russia is based on a long history and tradition and on nationally, regionally, and bilaterally established agreements.

All funding programmes promote international cooperation. Polar research is conducted in cooperation with European, North and South American as well as Asian partners. In addition to Europe and Russia, Japan and China are important collaborator in Arctic research and South American countries in Antarctic research. International cooperation between national Antarctic research programmes is vital and encouraged, and international cooperation is also required in Finnish Antarctic research funding, which is set to carry out the scientific activities as part of the Finland's commitment of being consultative party in Antarctic Treaty.

Finnish Research stations are open for educating students also beyond Finnish institutions, in collaboration with other universities and research institutions, and by offering access to national and international researchers.



France

Iles Kerguelen, Lac Athena, 2019: deploying instrumentation near lake Athena as part of PALAS project. Lake sediment archives are used to reconstruct the history and ecological impact of rabbit invasion since their introduction on the island in 1874. Photo: Art Verhage - Institut Polaire Français

Polar research funding organisations and governance

The [French National Scientific Research Centre \(CNRS\)](#) provides long-term support to joint international research initiatives such as International Research Laboratories focusing on Arctic research, observatories in the Arctic regions, international networks involving several Siberian universities, polar infrastructures (e.g. SAFIRE, PolarPod) and support to IPEV personnel. Project funding is also provided through research programmes managed by the different CNRS institutes. Through its direct employment, CNRS supports most of the polar research personnel in France.

Being the national agency, the [French Polar Institute Paul-Emile Victor \(IPEV\)](#) provides resources and expertise for implementation and coordination of most of France's scientific projects in the Arctic, Antarctic, and Sub-Antarctic, frequently in partnership with other countries. Support is made available through project funding for field work (implementation of scientific and technological projects). IPEV also operates the polar activity of the patrol-supply ice-breaker L'Astrolabe.

The [National Research Agency \(ANR\)](#) is the national funding agency for basic and applied research and a member of the Forum for Arctic Funders. ANR funds Arctic projects through the Belmont Forum. ANR also funds research related to large inter-ministerial research programmes like the "Make Our Planet Great Again" programme (attracting researchers from abroad) or the ongoing Priority Research Programme on Ocean and Climate with a dedicated pillar on Polar Oceans.

The [National Space Agency \(CNES\)](#) supports projects related to the objectives of CNES's Earth Observation programme.

The [Ministry of Higher Education, Research and Innovation \(MESRI\)](#) supports research actions led by public scientific bodies and universities, national research infrastructures and by IPEV (90% of the annual budget of IPEV comes from MESRI).

The [Ministry for Europe and International Affairs \(MEAE\)](#) supports the participation of French researchers and experts in international polar fora and to international cooperation. It supports mobility through coordination of bilateral research partnerships (in collaboration with MESRI) and grants provided by French embassies to foreign researchers and students.

The [Secrétariat Général pour l'Investissement \(SGPI\)](#) currently supports large programmes through the ANR.

The [French Research Institute for the Exploitation of the Sea \(IFREMER\)](#) operates the French Oceanographic Fleet (FOF) including the RV Marion-Dufresne in sub-Antarctic waters. This vessel is operated together with TAAF and IPEV for logistic operations supporting the French sub-Antarctic territories.

Polar research strategies and coordination

The [General Direction for Research and Innovation \(DGRI\)](#) of the MESRI is in charge of managing the development of the national research strategy in tight collaboration with the relevant ministries and stakeholders. The DGRI is assisted by five National Research Alliances, one being dedicated to Environment and Food (AllEnvi), another to Humanities and Social Sciences, in coordinating the National Research Strategy.

Currently, there is no national polar research strategy document covering the two poles. The present polar strategy relies on a variety of documents, including science plans and strategic documents which are related to specific sites, infrastructures or initiatives. A polar strategy document covering the two poles is currently under development.

Polar research funding and application procedures

French polar research is largely implemented in a European and international context. Cooperation exists with the main countries which are involved in polar research, either through shared operation of infrastructures, partnership in European and international consortia, bilateral agreements or research networks including universities.

At the national level, French polar research is mainly funded through competitive calls which are not dedicated to polar topics. Regarding institutional funding, the calls are issued by CNRS, mainly through its different institutes, the universities, the ANR or, for remote sensing related topics, by CNES. ANR relies on seven Programming Advisory Panels, corresponding to the five national research alliances and two panels on Mathematics and



Photo: Thibaut Vergoz /Institut Polaire Français

Physics, to develop the annual Work Programme. These panels bring together representatives of ANR, the MESRI and other ministries, national research alliances, CNRS, the Conference of University Presidents (CPU), and private research. Implementation of those polar projects that include a field work component requiring logistical support from IPEV can be funded through a competitive IPEV call.

International researchers can benefit from access to IPEV infrastructures only if they are associated partners in projects supported by IPEV under French leadership or are partners in international project consortia in which IPEV, as an institute, appears itself as a full partner like e.g. in Beyond EPICA. In this last case, international partners can access the same infrastructure service level than a French partner. Non-polar-specific institutions (CNRS, IFREMER, CNES, MétéoFrance) also support polar science through their infrastructures (research vessels, data infrastructures, aircrafts, instrumentation facilities) and staff.

Substantial International research collaborations

France is a member of the ATS, an observer at the Arctic Council and a member of the SAON board. Many French polar scientists act as delegates and experts in the working groups and expert groups of SCAR (incl. as a Vice President for Science in 2018-2021) and IASC. CNRS and IPEV are the two representatives of France at the EPB.

France is a member of the Belmont Forum and as such currently contributes to supporting Arctic projects under a dedicated Coordination and Research Actions. France is also a member of the JPI Climate and JPI Ocean (there represented by MESRI, IFREMER and ANR).



Germany



*The German Antarctic research station, Neumayer Station III at night.
Photo: Stefan Christmann / Alfred-Wegener-Institute*

Polar research funding organisations and governance

Long-term institutional funding for institutes performing polar research comes from the **Federal Ministries for Education and Research (BMBF)** and for **Economy and Energy (BMWi)**. The BMBF governs polar research in Germany, funds several institutes, and represents Germany in the Arctic Science Ministerial. The BMWi supports and governs polar research via the institutional funding of the Federal Institute for Geosciences and Natural Resources (BGR).

Project funding is mainly derived from different federal ministries and the **German Research Foundation (DFG)** as well as through EU programmes. The DFG priority programme “Antarctic research with comparative investigations in Arctic Ice Areas” (SPP1158), which was launched in 1981 as the priority programme “Antarctic Research”, takes a special position for Antarctic research carried out at universities.

The following ministries and organisations support polar research in Germany:

Federal Ministry of Science and Education (BMBF)

- Institutional Funding (AWI, GEOMAR, GFZ)
- Helmholtz Association (HGF) - HGF also funds research projects
- HGF-Research Programme: Changing Earth - Sustaining our Future
- Research programme Mare:N - publishes calls for proposals, all German institutions can apply

Federal Ministry for Economic Affairs and Energy (BMWi)

- Institutional Funding (BGR)

Environment, Nature Conservation and Nuclear Safety (BMUV)

- Portfolio funding

German Research Foundation (DFG):

- Priority Programme: Antarctic Research with Comparable Investigations in Arctic Sea Ice Areas
- Collaborative Research Centre: Transregio Arctic Amplification
- Regular (non-topical) funding based on science excellence



Ice station work during the RV Polarstern expedition "TransArc" in the central Arctic Ocean in summer 2011. Photo: Mario Hoppmann / Alfred-Wegener-Institute

Polar research strategies and coordination

Germany has an Arctic Policy and two dedicated Polar Research Programmes: the "Research Agenda Polar Regions in Transition" of the BMBF and the "Polarforschungsagenda" 2030 of the DFG. Polar research is also funded by competitive funding programmes.

National Strategies:

- [Research Agenda Polar Regions in Transition](#) (2021).
- [Germany's Arctic Policy Guidelines](#) (2018).
- [Polarforschungsagenda 2030](#) (2017) (in German only).

Germany has a dedicated project management organisation ([Projekträger Jülich PTJ](#)), which supports polar research funding by the BMBF. PTJ supports the German federal and state governments as well as the European Commission in achieving their funding policy objectives. It implements research and innovation funding programmes that have been tailored to meet their specific requirements and address socio-political needs. The PTJ also plays an important role in supporting and coordinating the development of Germany's polar research strategy with the help of scientific experts under the guidance of the respective Ministry.

Polar research funding and application procedures

The BMBF publishes calls for proposals to which all German institutions can apply. The call, the proposal submission and the evaluation are managed by the PTJ and the procedures depend on the type of call. The DFG provides grants for individual research projects or to support the career of individual researchers. Scientists can apply continuously throughout the year or on

dedicated calls. The proposal structure, submission and evaluation of the proposal depends on the type of project and is managed via the DFG.

Germany has several Foundations and the German Academic Exchange Service (DAAD), which fund international scientists to work in Germany or Germans who want to work abroad. Any research topic is accepted, funding is based on excellence of the applicant.

Applications of German researchers to EU or international funding organisations are highly appreciated, but not specifically supported. Some German institutions and universities have special EU funding offices to inform on EU calls and support their scientists in writing the proposals. These departments usually also administer the EU projects. The Helmholtz Association (HGF) runs an office in Brussels dedicated to supporting HGF researchers in all aspects of EU funding.

Substantial International research collaborations

Germany is a member of the Belmont Forum, JPI Oceans and JPI Climate. It is a member of the ATCM and an observer to the AC. German polar research is internationally networked, which is also reflected in the numerous German delegates to e.g. SCAR, to IASC, the EPB as well as to committees of WMO with a polar focus.

German polar research is open to all international cooperation partners. International partners can access German infrastructures if they have a cooperation with a German researcher, who acts as the PI. International partners cannot apply for projects in the German system except for dedicated programmes promoting international cooperation such as programmes from the [DAAD](#) or Alexander von Humboldt Foundation ([AvH](#)).



Iceland



Fieldwork Langjökull 2011. Photo: Allen Pope

Polar research funding organisations and governance

The **Icelandic government** provides national competitive funds that support Icelandic research on a wide variety of research topics.

The [Icelandic Centre for Research \(Rannís\)](#) supports research, innovation, education, and culture in Iceland. Rannís cooperates closely with the Icelandic Science and Technology Policy Council and provides professional assistance in the preparation and implementation of the national science and technology policy. Rannís administers the national competitive funds in the fields of research, innovation, education, and culture, as well as strategic national research programmes. Domestic funds administered by Rannís are: The Icelandic Research Fund; the Student Innovation Fund; the Technology Development Fund; the Climate Fund; the Strategic Research and Development Programme (2020-2023) Societal Challenges. Rannís represents the Icelandic science community in various international Arctic Science platforms and bilateral cooperation with other countries.

Polar research strategies and coordination

Althingi - The Parliament of Iceland adopted an updated [Arctic policy of Iceland](#) as a parliamentary resolution on 19 May 2021. The 2021 Arctic policy has a strong focus on Arctic research, including a proposal to establish an Arctic research programme and to strengthen Arctic research cooperation (domestic and international).

The [Icelandic Science and Technology Policy Council \(STPC\)](#) provides strategic direction for both national and international collaboration in research and innovation. Its role is to support scientific research, science education and technological development in Iceland to strengthen the foundations of Icelandic culture and increase the competitiveness of the economy. The Council is chaired by the Prime Minister and its members include the Minister of Finance and Economic Affairs, the Minister of Education, Science and Culture, the Minister of Tourism, Industry, and Innovation, as well as 16 representatives nominated by different ministries and higher education institutions and by the social partners. In addition, the chair may appoint up to four other ministers to the Council. The Council sets the official science and technology policy for a three-year period. The Council's deliberations in each of the two fields are prepared by its working committees, the Science Board, and the Technology

Board. The Science and Technology Policy Council is convened 2-3 times a year, and in general terms, the Council prepares and sets the agenda for the Strategic Research and Development Programmes.

Rannís administers the national funds, as well as Iceland's participation in international and EU funded education, research, and innovation programmes such as the EU Framework Programmes for Research and Innovation.

The Icelandic Joint Committee on Arctic Affairs is appointed for a four-year period by the Minister for the Environment, Energy and Climate. The role of the committee is to strengthen cooperation between the parties concerned about monitoring and research in the Arctic. The committee has organised Arctic Science Days and submitted a proposal for an Arctic Research Programme to the STPC. The following institutions have nominated representatives on the committee: The Agricultural University of Iceland, the Environmental Agency of Iceland, the Icelandic Centre for Research, the Icelandic Institute of Natural History, the Marine and Freshwater Research Institute, the Met Office, the Stefansson Arctic Institute, the University of Akureyri and the University of Iceland. Other regular participants in meetings come from the Arctic Council Conservation of Arctic Flora and Fauna Programme (CAFF), the Arctic Council Protection of the Arctic Marine Environment Programme (PAME), Icelandic Foreign Ministry and the [Icelandic Arctic Cooperation Network](#).

[The Icelandic Arctic Cooperation Network \(IACN\)](#) was founded in 2013 and is a result of cooperation between the Ministry for Foreign Affairs, the Ministry of Education, Science and Culture, the Ministry for the Environment, Energy and Climate, Eything (regional development agency), and the numerous parties involved with Arctic issues in Iceland. Its role is to facilitate cooperation amongst the Icelandic public and private organisations, institutions, businesses, and bodies involved in the region, among other things in research, education, innovation and monitoring, or other activity relevant to the Arctic region. Currently members of the IACN are approximately thirty, including universities and university centres; large research and public institutions, such as the Icelandic Meteorological Office, the Marine and Freshwater Research Institute and the Icelandic Coast Guard; and municipalities and other important stakeholders involved with the Arctic region.

Polar research funding and application procedures

A number of funds provided by the Icelandic government support, research, technology development and innovation in Iceland. Many of them are located within institutions and are only open for applicants within these respective institutions (for example, at HEIs, the National Hospital, etc.). Other funds are open to all, although they all make formal demands of their applicants regarding education, experience, and more. At the time being, no fund specifically targets Arctic research. However, this may change as the new Icelandic Arctic Policy adopted by the par-

liament in 2021 emphasises the need for a designated Arctic Research Programme.

The Icelandic Research Fund (administered by Rannís) is an open competitive fund that provides grants according to the general emphasis of the Science and Technology Council and the professional evaluation of the quality of the research project. The role of the fund is to encourage and strengthen scientific research and research-related postgraduate studies and defined research projects for individuals, research groups, universities, research institutes, and companies.

According to the desktop study [Mapping-Arctic-Research-in-Iceland-sidur.pdf \(rannis.is\)](#) conducted by the Icelandic Arctic Cooperation Network, the Stefansson Arctic Institute and Rannís (published in November 2020) Arctic research projects funded by the Icelandic Research Fund in the years 2009 to 2019 counted for 6.93% of the total available funding over the period. Of national funds, the amount of grants from the Icelandic Research Fund accounts for 79.08% of the total research funding in Iceland that goes into Arctic research.

Substantial International research collaborations

The ministries for Foreign Affairs of Iceland and Norway jointly fund Arctic Research. The grants are administered by Rannís. International research, innovation and education programmes managed by Rannís include the EU Research Framework Programme, Erasmus+, EEA grants, NordForsk, Nordplus and the Belmont Forum. Since 2017, Rannís hosts the Secretariat of the International Arctic Science Committee (IASC) in Akureyri.

For the EU Framework Programme on Research and Innovation (FP7), the total allocation to Icelandic participants for Arctic research projects was 3.02%. No Arctic research projects were funded in FP6.

The Horizon 2020 programme is equally important for funding Arctic research in Iceland as the Icelandic Research Fund. The percentage of Arctic research projects out of the total funding from Horizon 2020 to Icelandic participants is 6.08%. Iceland formally became an associated country for Horizon Europe in September 2021: [Iceland and Norway are the first countries associated to Horizon Europe | European Commission \(europa.eu\)](#).

Iceland places great emphasis on international collaboration in science, innovation and education, and increased mobility of researchers. Iceland supports strengthened research cooperation with other nations in the Arctic region, protection of flora and fauna, observation capabilities and pollution prevention, as well as the social conditions and well-being of Arctic Indigenous peoples. Researchers in Iceland are highly internationalised in conducting Arctic research projects. **Horizon 2020** has been the most important international research funding mechanism for Arctic research in Iceland and for establishing international cooperation projects.



Italy



Activity at NYA (the Theteread balloon). Photo: Dirigibile Italia Station

Polar research funding organisations and governance

Italian polar research activities are mainly supported by dedicated programmes such as the [National Antarctic Programme](#) (since 1985) (**PNRA**) and the [National Arctic Programme](#) (since 2018) (**PRA**), both funded by the Research Ministry (MUR).

Additional resources can be provided by competitive funding programmes, in particular Projects of Relevant National Interest (PRIN). National Research Institutions, in particular CNR, also support Arctic Research through dedicated resources.

The [Ministry of Universities and Research](#) (**MUR**) supports research and innovation in both polar regions. MUR has a [dedicated Programme for the Arctic](#) (PRA), managed by the CNR, and a [National Research Programme in Antarctica](#) (PNRA). It provides resources to polar research also thanks to competitive national programmes as for example PRIN. It also provides dedicated funds to support the icebreaker RV Laura Bassi.

The [Ministry of Foreign Affairs and International Cooperation](#) (**MAECI**) can support polar research through its Executive Programmes for Scientific and Technological Cooperation.

The [National Research Council](#) (**CNR**), being the main national research Agency, has the mandate for scientific management of PNRA and full responsibility to implement the PRA. It allocates the budget resources for Arctic research. It manages the Dirigibile Italia Base in the Arctic and provides logistic support to projects funded by the PRA.

The [National Agency for New Technologies, Energy and Sustainable Economic Development](#) (**ENEA**) has the mandate to provide logistic support in Antarctica. It manages the Mario Zucchelli (MZS) coastal station and the Plateau Concordia Station in cooperation with IPEV. It is responsible for supporting projects operating in a non-Italian base.

The [National Institute of Oceanography and Experimental Geophysics](#) (**OGS**) is in charge of the Italian icebreaker RV Laura Bassi, managed together with CNR and ENEA.

Polar research strategies and coordination

PNRA was established in 1985, PRA in 2018. The two programmes elaborate research agendas/strategies that are approved by MUR.

Strategy and priority of polar research in the Antarctic and Arctic are defined on a 3-year basis by the **National Scientific Commission for Antarctica (CSNA)** and by the **Arctic Scientific Committee (CSA)**, respectively.

Polar research funding and application procedures

Both PNRA and PRA support activities through competitive calls for proposals. Research proposals are evaluated by external reviewers for their scientific value and are then selected by the National Arctic or Antarctic Scientific Committees. Foreign researchers may be unfunded participants in PRA and PNRA projects. As part of the project team, they can have access to infrastructures with the same procedures valid for Italian researcher. In addition, foreign researchers can make requests for access as guests. Application procedures are different for the Arctic - where CNR oversees the infrastructures - and the Antarctic - where decisions will involve CSNA and ENEA. Foreign researchers can contact CNR as the responsible organisation for the scientific coordination both for the Antarctic and Arctic, to guide them through the procedures.

Specific funding lines in PNRA are devoted to activities in foreign stations, as well as to further analyse old data sets acquired in previous projects.

Italy has a PhD Programme in polar sciences that aims to prepare students with in-depth scientific competences and original and innovative research activities for becoming experts on topics related to recent and past environmental and climate changes of the polar regions. This is open to foreign students and is taught exclusively in English.

Substantial International research collaborations

Italian research Institutions strongly promote application to EU proposals. At national level the [APRE agency](#) (Agenzia per la promozione della ricerca Europea) supports Italian scientist in identifying funding opportunities and writing proposals. CNR runs an office in Brussels dedicated to supporting CNR researchers in all aspect of EU funding, also talking with the National delegation at the EU ersetzen durch CNR runs an office in Brussels dedicated to supporting CNR researchers in all aspect of EU funding. The office is also working with the National delegation at the EU.

Italy is member of the Belmont Forum, as well as of several JPIs, in particular JPI Oceans and JPI Climate. Many times, CNR - as primary research Agency - represents Italy in these fora.

Italian polar research is open to all international cooperation partners. The procedure to establish new collaborations takes a bottom-up approach and takes place between the scientists. Foreign partners can take part in projects supported by the PNRA and PRA even if they do not receive funding. This participation can lead to various in-kind contributions and opportunities from the Italian side.

In order to network internationally, Italian institutions conclude Memoranda of Understanding (MoUs) with strategically important partners or enter into logistical and strategic cooperation, such as shared research stations. Other instruments to sustain international cooperation are bilateral collaborative programmes implemented by [MAECI](#) (Executive Programmes for Scientific and Technological Cooperation) and [CNR](#).

Arctic research collaborations are encouraged by taking part in international networks and Transnational Access (TNA) Arctic programmes. CNR participates to access programmes of SIOS, ARICE and INTERACT.

In Antarctica, international collaboration is promoted by providing access to and hospitality at the Italian stations and by supporting projects that aim to be carried out in non-Italian stations. Italy's main cooperation partners in Antarctic research are France, South-Korea, USA, Chile and Argentina. In the Arctic Italian scientists mainly cooperate with researchers from Norway, Germany, South-Korea, Denmark and Japan.



The Italian station from outside. Photo: Dirigibile Italia Station



The Netherlands



Ny-Ålesund. Photo: Ronald J. W. Visser

Polar research funding organisations and governance

The [Dutch Research Council \(NWO\)](#) is the principal source of funding for scientific research. Under its wings is the [Netherlands Polar Programme \(NPP\)](#) that guarantees research funding for both polar regions. Other significant sources of project funding are via universities' own programming, other NWO programmes and the ERC.

The NPP is funded via the Netherlands' Polar Strategy (see below) and a covenant between six institutions:

- Ministry of Education, Culture and Science
- Ministry of Infrastructure and Water Management
- Ministry of Foreign Affairs
- Ministry of Agriculture, Nature and Food Quality
- Ministry of Economic Affairs and Climate Policy
- Dutch Research Council (NWO)

The NPP is managed by a Programme Committee, in which both the Dutch Research Council and delegates from the Ministries are represented. The Netherlands Polar Programme has a dedicated secretariat.

Polar research strategies and coordination

[The Netherlands' Polar Strategy Prepared for Change](#)

The Netherlands has a governmental polar policy framework, the Netherlands' Polar Strategy *Prepared for Change*, which is effective 2021-2025. The Strategy has two funding instruments:

- For scientific research: NPP, a geographically and thematically balanced scientific research programme. It also provides input for strategic opportunities. It is operated by the Dutch Research Council via a covenant with the ministries.
- For assignment-based and consultancy research: Polar Activities Programme (PAP). This minor budget is operated directly by the Ministries and is not open for applications.

The ministries manage and finance the Dutch participation in the four [Arctic Council](#) working groups AMAP, CAFF, SDWG and PAME.

[PolePosition-NL 3.0, NPP](#)

The Netherlands Polar Programme, as the key funder of polar research, publishes its own research strategy document. It was developed by a group of scientific experts under the guidance of the [Netherlands Polar Programme](#), in consultation with the Dutch government.



PolePosition-NL 3.0 addresses the most urgent questions for the polar science community in the Netherlands. The strategy will guide the future of the NPP. It recognises four key themes:

- Climate change
- Ecosystem dynamics
- Social sciences and humanities
- Sustainable development

In addition to funding polar calls-for-proposal, the Netherlands Polar Programme is tasked with coordinating roles:

- National infrastructures, notably the Dirck Gerritsz Laboratory, currently based [Rothera Research Station](#), Antarctica. Special deployment of the mobile laboratories (Dirck Gerritsz) is available via the [NPP secretariat](#), in consultation with BAS.
- International cooperation agreements (see below)
- Polar memberships (SCAR, IASC, COMNAP, FARO, European Polar Board and Arctic Funders Forum)
- Network activities (Polar Symposium)

[Arctic Centre](#)

Access to the Dutch facility in Ny-Ålesund is granted via the [Arctic Centre](#), operated by [University of Groningen](#).

Polar research funding and application procedures

All NWO calls-for-proposal are announced and detailed on the [NWO website](#). Calls are open to all public knowledge institutions in the Kingdom of the Netherlands. Also, other programmes than the NPP, such as the Open Competition, Talent Scheme, User Support for Space Research and certain thematic programmes are open for polar proposals. In 2022 NWO operates a Dutch Research Agenda Thematic Programme call dedicated to Antarctic tourism.

NWO has the '[Money follows Cooperation](#)' co-investigator scheme, active in most calls, that allows foreign involvement in Dutch-led projects. All non-EU-sanctioned states could thus participate in most NWO calls as co-applicants.

Substantial International research collaborations

While Dutch researchers, institutes and universities cooperate with many international partners, NWO has, managed by the Netherlands Polar Programme, formal collaboration agreements with the British Antarctic Survey (BAS) in the UK and the Alfred Wegener Institute (AWI) in Germany. The Memoranda of Understanding (MoUs) stimulate scientific collaboration and facilitate access to their polar infrastructure. The MoU with BAS provides access to the Dirck Gerritsz Laboratory in Rothera and other local facilities, transport to/from Chile and the Falkland Islands, local transport and a permit framework. The MoU with AWI provides access to various German polar facilities, including ship-based and station-based facilities in both polar regions.

NWO is a member of the Belmont Forum. Two projects funded in the 2018 'Arctic Resilience' call, co-funded via the Netherlands Polar Programme, have a Netherlands-based work package.

Applications of Dutch researchers to European (Horizon Europe) or other international funding is highly appreciated and but not specially supported.

NWO hosts the [European Polar Board Secretariat](#).

A special Dutch initiative is the SEES.nl expeditions to Edgeøya Svalbard. The first expedition took place in 2015 and the second in 2022. This is a novel way of connecting academia, policymakers, and society. The second [SEES.nl](#) expedition has reserved berths for international researchers to consolidate collaboration across boundaries.



Norway



GPS Measurements Antarctica, Basecamp Icerise B.
Photo: Elvar Örn Kjartansson / Norwegian Polar Institute

Polar research funding organisations and governance

Research in Norway is organised according to the sector principle, which means that each Ministry is responsible for financing research within their area of responsibility. Several Ministries and their subordinate agencies and institutions are involved in the governance of polar affairs in general and polar research in particular.

The [Ministry of Education and Research \(KD\)](#) has coordinating responsibility for the national research policy and is responsible for close to 50% of the national funding for research in Norway. The Ministry provides polar research competitive funding through the [Research Council of Norway \(RCN\)](#) as well as direct core funding to universities and colleges, among these the [University Centre in Svalbard \(UNIS\)](#), the [University of Tromsø - Arctic University of Norway \(UiT\)](#) and the [Nord University \(NORD\)](#), which lies within the Arctic region.

The [Ministry of Environment and Climate \(KLD\)](#) is responsible for ensuring integrated governmental climate and environmental policies. Its subordinate directorate, the [Norwegian Polar Institute \(NPI\)](#), performs research related to environmental management needs in polar regions. Another directorate under the

Ministry, the [Norwegian Environmental Agency \(MDIR\)](#), governs national environmental monitoring programmes and is responsible environmental authority in Svalbard. The [Directorate for Cultural Heritage \(RA\)](#) is an advisory and executive body for the Ministry on all matters pertaining to cultural heritage and cultural environments, in Svalbard and on the mainland. The Ministry is also responsible for polar research infrastructure and centres like the [Fram Centre](#) (FRAM - High North Research Centre for Climate and the Environment).

The [Ministry of Trade, Industry and Fisheries \(NFD\)](#) governs industrial and seafood policy with an eye to the future. The national [Institute of Marine Research \(IMR\)](#) is owned by and serves as an advisory capacity to the Ministry, operating many vessels and a significant research programme in polar areas.

The [Ministry of Petroleum and Energy \(OED\)](#) and [Ministry of Foreign Affairs \(MFA\)](#) provide some direct funding to companies and to RCN programmes. The [Ministry of Justice and Public Security \(JD\)](#) is responsible for the administration carried out by the [Governor of Svalbard](#) and coordinates the polar affairs for the central Government. The [Inter-ministerial Committee on the Polar Regions](#) provides coordination and recommendations for the central Government in all polar affairs. The Governor of Sval-

bard is the Norwegian government's highest-ranking representative on the archipelago and is administratively placed under the Ministry. The mission and activity programme of governmental institutes like NPI and IMR are governed by annual appointment letters from their respective Ministries (Appointment letters NPI and IMR for 2021).

The [Research Council of Norway \(RCN\)](#) is the key advisory body to the authorities on research policy issues and carries out tasks commissioned by 15 Ministries. RCN funding for Polar and High North research is governed by its [Executive Board](#) according to [RCN strategies](#). Funding under the various thematic areas of polar research is governed by the [RCN Portfolio Boards](#), including competitive funding for [national Research Infrastructure](#) and grants under the [Svalbard Science Forum \(SSF\)](#). Investments in very large research infrastructure (i.e. research vessels etc.) are made directly by the Government/Ministries.

The [Norwegian Polar Institute \(NPI\)](#) is a national provider of logistics and support for polar research in the Arctic and the Antarctic, with opportunity for participation by other research actors. Logistics and support services for polar research in Svalbard are also provided by the [University Centre in Svalbard \(UNIS\)](#), which equips and assures field security for field work activities, both for education and research.

Polar research strategies and coordination

The overall funding strategy for Norwegian research is the Governmental [Long Term Plan for Higher Education and Research](#). Strategic guidance for polar research comes from a number of Governmental White papers and Strategies. The [Strategy for research and higher education in Svalbard](#) (2018) gives the research in Svalbard a fundamental role in contributing to the international collected polar knowledge and its role in solving core societal and global challenges. [Norway's Arctic Strategy - between geopolitics and social development](#) (2017) incorporates both foreign policy and domestic policy. The Governmental White Papers [Arctic and the High North: People, possibilities and Norwegian interests in the Arctic \(2020-2021\)](#), [Norwegian Interests and Policy in the Antarctic \(2014-2015\)](#), and [Svalbard \(2015-2016\)](#) provide the national policy directions for these areas the following years, and new editions appear regularly. [The place of the oceans in Norway's foreign and development policy \(2016-2017\)](#) focuses on supporting Norwegian maritime interests and how to achieve UN sustainable development goals, also in Norwegian polar areas. Recently, the [Climate plan for 2021-2030 \(2020-2021\)](#) inserts important priorities. Some Ministries have also prepared plans describing knowledge needs and research, like the [Priority research needs of the Ministry of Climate and Environment \(2016-2021\)](#) under the Ministry of Climate and Environment.

The Research Council of Norway (RCN) is guided by its thematic funding strategies (Portfolio plans), one of which is the [Portfolio Plan for Climate and Polar Research](#). RCN has also prepared a [Research strategy for the Arctic and Northern Areas](#) (2019), which prioritises increased knowledge about geopolitics, climate and environment, business development, the sea as a resource, bioeconomy, renewable energy and petroleum, opportunities at sea and in space, and social development. The RCN [Policy for Norwegian polar research](#) (2014-2023) focusses on climate and environment, natural resources and business activity, international interaction, recruitment of young scientists, research infrastructure and dissemination. The [Ny-Ålesund Research Strategy](#) (2019) substantiates the government's ambitions of increased cooperation, better coordination, increased quality and sharing of data at the site. [Norway's research effort in Antarctica](#) (2013-2022) gives priority for Norwegian research activities in Antarctica, with special emphasis on utilisation of Norwegian infrastructure, knowledge on the climate system and management of Norwegian activity and cultural heritage. The report [Business development and polar research - commitment for a common future](#) (2011) identifies concrete research needs in a twenty-year perspective and proposes concrete measures linked to the petroleum industry, maritime activity, fishery and bioprospecting.

Norway does not possess a national polar committee or a national network of polar researchers. However, the [Follow-up plan of the Norwegian polar research evaluation](#) (2020) do recommend to set up such networks. Important coordination is performed by the [Norwegian Polar institute](#), [Research Council of Norway](#), [University Centre in Svalbard](#) and [Svalbard Science Forum](#). In addition, there are many centres, national research infrastructures and large national projects that provide coordination on specific research topics. Examples of these are the [Flagship programmes of the Fram Centre](#), [Legacy of Nansen project](#), national research vessel committee coordinating [marine research cruises](#). Several institutional polar research networks and advising committees also contribute, like the [Polar Research Committee at the University of Tromsø](#), [Northern Research Committee at the Univ. of Oslo](#), [Polar Research Network at the University of Bergen](#), [Research Leader Group at the Fram Centre in Tromsø](#), [Norwegian Scientific Academy for Polar Research](#). National polar research seminars like the bi-annual Svalbard Science Conference and the Antarctic Seminar, organised by RCN and NP, also contribute to coordination. Partnership in national and international research infrastructure and Global Observing Systems like [ARGO](#), [EMSO](#), [ICOS](#), [EISCAT](#), [SIOS](#) and more, which are promoted and funded under [Norwegian Roadmap for Research Infrastructure 2020](#), contribute significantly to coordination.

Polar research funding and application procedures

[RCN funding programmes](#) are open to the world, i.e. researchers from other countries can be partners and receive funding in Norwegian coordinated projects.

Norwegian polar research is carried out under a multitude of internal institute programmes, national competitive funding programmes under the Research Council, as well as programmes directly funded by Ministries (research centres) and Agencies (environmental monitoring programmes). The funding occurs through many channels. The [Ministry of Education and Research](#) provides the largest part to polar research and is responsible for the general university grants that accounts for 40% of the funding allocated to polar and High North research in Norway. The [Research Council of Norway](#) (RCN) funds on competitive basis approximately 25 % of Norwegian polar research through several programmes and funding instruments. There is one dedicated [Polar research programme](#) which constitutes approximately 1/5 of this funding. Other open and competitive R&I calls are given under thematic programmes related to Climate, Energy, Marine, Maritime, Social science, and Humanities calls. International polar research cooperation and partnerships in Svalbard is specifically stimulated through the [Svalbard Science Forum](#) (SSF), hosted by RCN, which offers funding of Arctic Field Grants and Svalbard Strategic Grants and provides information on how to plan and get permissions for field work and research for the international research communities. The [Svalbard Environmental protection Fund](#) is an economic instrument to protect the environment on Svalbard, created by the Ministry of Climate and Environment in accordance with [The Svalbard Act](#). Private and public enterprises, organisations and individuals may apply for funding.

Norwegian Polar Institute (NPI) is the Norwegian host at the Ny-Ålesund Research Station and acts as the point of contact for scientific research, while the state-owned [Kings Bay Company](#) **Kings Bay Company (KBAS)** facilitates logistics, housing, lodging, construction work etc. for all the international research institutions there. Access to the logistical services to Svalbard is done through the SSF service [Research in Svalbard database](#) (RiS).

Access to Antarctica and the [Norwegian Antarctic station Troll](#) is provided based on a written notification and agreement with NPI. The [Icebreaking Vessel FF Kronprins Haakon](#) is jointly used by IMR, UiT and NPI. Other users need to join in with cooperation agreements on their cruises. The cruise plan is prepared by the three institutions together. The coast guard icebreaking vessel KV Svalbard provides logistical support to Norwegian research groups based on applications sent through the Research Council of Norway.

Substantial International research collaborations

Norway is an associated member of the EU framework programme and Norwegian actors can apply for funding on equal footing with enterprises, public sector bodies, and research institutions in EU member states. RCN has several funding instruments to stimulate Norwegian research groups to take part. The [RCN Strategy of International Cooperation \(2021-2027\)](#) is a plan for implementing increased international cooperation and participation in EUs Research and Innovation Programmes.

Norway is taking a leading role in the [High Level Panel for a Sustainable Ocean Economy](#) that has published a series of reports also relevant for polar research. RCN is actively contributing to a number of joint programmes of polar relevance:

- JPI Climate, JPI Oceans and BiodivERsA
- Many ERA-NETs and new partnerships under Horizon Europe
- [Belmont Forum](#) calls (CRAs) related to polar research.
- [Interreg Programmes](#) involving northern Finland, Sweden and Norway, and Russia as well.
- [NORDFORSK](#), for example the [Responsible Development of the Arctic: Opportunities and Challenges - Pathways to Action](#).

Norway is fully part of the Antarctic Treaty System (ATS) and the Arctic Council (AC). RCN and NPI, secure national membership and appoint national representatives to SCAR, IASC and EPB working groups.

Polar research is emphasised in several bilateral Governmental agreements as well as MoUs on Agency and institutional level with many European countries as well as countries outside the EU. The [Governmental Panorama Strategy \(2021-2027\)](#) is Norway's strategy for bilateral cooperation on higher education and research with key partner countries outside the EU, and polar research is emphasised specifically with USA, Canada, China, Japan, Russia, India and South Africa. Bilateral cooperation agreements and projects with selected countries like the [Barents Region Cooperation](#), the historic Norwegian-Russian cooperation on fisheries management, should also be mentioned.





Poland

Ocenia, Horyzont. Photo: W. Kaszkin

Polar research funding organisations and governance

In Poland, the [Ministry of Education and Science \(MEiN\)](#) is the leading governmental institution supervising the organisation and financing of polar research, providing strategic solutions and implementing national and EU programmes. It supports:

- the Polish polar infrastructure, their maintenance with related organisation and logistics,
- special research equipment within the frame of the Polish Roadmap for Research Infrastructures, which includes: **The Polish Multidisciplinary Laboratory for Polar Research (PolarPOL)** and a part of the Polish EURO-ARGO (Global Ocean Observation System) with research floats deployed in the European Arctic (since 2009).

Subordinate financing agencies of the MEiN provide funding for research and innovation. Polar research projects fall into the overall competitive R&I agenda. The following agencies are funding research projects including polar ones in particular disciplines:

[National Science Centre \(NCN\)](#) in Cracow is a government agency set up in 2011 to support basic research in Poland. The NCN funds projects in Arts, Humanities and Social Sciences, Life

Sciences and Physical Sciences, and Engineering. It has funding schemes dedicated to researchers at different career stages.

[National Centre for Research and Development \(NCBR\)](#) in Warsaw is a governmental executive agency for supporting and developing innovative technological and social solutions, creating an ecosystem of knowledge of, and information about, innovation. Part of its activity is related to the implementation of programmes financed from European financial instruments.

[Polish National Agency for Academic Exchange \(NAWA\)](#) in Warsaw is set up to coordinate state activities driving the process of internationalisation of Polish academic and research institutions. The mission of NAWA is to foster the development of Poland in science and higher education.

Cooperation between national polar research organisations, the leading polar institutions and policymakers has been pursued via the [Polar Task Force \(PTF\)](#) - an inter-ministerial advisory group hosted by the Ministry of Foreign Affairs. The PTF gathered representatives of relevant ministries together with delegates of the Committee on Polar Research, Polish Academy of Sciences, the Polish Polar Consortium and operators of the large polar infrastructure. Following the Prime Minister's decree

of January 28th, 2022, establishing the governmental Committee for the National Polar Policy, PTF has been strengthened by a new high-level body auxiliary to the Council of the Ministers Republic of Poland.

Polar research strategies and coordination

The Government of Poland adopted the national strategy: The Polar Policy of Poland: Resolution of the Council of the Ministers Republic of Poland No. 129/2020 on the September 11th 2020, with the attachment: "Od ekspedycji z przeszłości ku wyzwaniom przyszłości. Polska polityka polarna" [From expeditions from the past towards challenges in the future. The polar policy of Poland - in Polish]. This first governmental strategy on policy related to polar regions has been based mainly upon the "Strategy for Polish Polar Research - a concept for the years 2017-2027" and "[Polish Polar Research: Green-and-White Paper](#)" under the aegis of the Polish Polar Consortium (PPC) and the Committee on Polar Research of the Polish Academy of Sciences.

The national Committee on Polar Research of the [Polish Academy of Sciences \(CPR PAS\)](#) (established in 1977) provides coordination on the strategic level. The CPR is the most important coordination and expert body in Poland, consisting of 40 prominent academics and other experts from different fields of the Arctic and Antarctic sciences appointed by the President of the Polish Academy of Sciences. The CPR PAS interoperates with the Polish Polar Consortium (PPC) established in 2012. The latter is a cooperation platform for 15 member universities and research institutes to encourage and facilitate collaboration in research projects and logistic supports. The University of Silesia in Katowice is the PPC leader and the host institution.

Polar research funding and application procedures

While the national polar strategy/programme is under process of implementation, a separate funding system for supporting polar research projects has not been developed yet. The funding of maintenance of the polar infrastructures falls into the overall competitive system for large research infrastructures in Poland, run by the Ministry of Education and Science. Research infrastructure maintenance calls are announced every three years. Polish research teams and individual scientists can compete for research grants provided by the NCN, NCBR and NAWA. The funding of polar research projects falls into general rules for projects from any field of science.

Applicants from abroad can:

- [Apply for joint projects for Polish and foreign participants.](#)
- Participate in selected projects funded by Polish agencies.
- Use the Polish infrastructure - only by bilateral or multilateral agreements with a research institution in Poland or the infrastructure operators.

A few Universities fund small polar projects within internal calls addressed to Ph.D. students and Early Career Researchers (ECRs) to develop internationalisation of their research, mainly in Svalbard.

Logistic services in the Arctic (Svalbard) and Antarctic (South Shetland Islands) are available for research groups and individual researchers from Poland and abroad by applying to the operators. The key infrastructure consists of the Siedlecki Polish Polar Station, Hornsund, Svalbard and the Arctowski Polish Antarctic Station, Admiralty Bay, South Shetland Islands. Services of stations are accessible for national and international researchers. Moreover, RV Oceania is open for international cooperation.

Direct contact with operators ([Institute of Geophysics](#), the [Institute of Biochemistry and Biophysics](#) and the [Institute of Oceanology](#)) for developing a formal agreement is necessary.

Substantial International research collaborations

Polish participation in international polar collaboration is realised on different levels and in various forms. The Republic of Poland is a full member of the ATS and CCAMLR and an observer member to the AC. Represented by the CPR PAS, Poland participates in the international polar organisations: SCAR, COMNAP, ATCM, IASC, FARO, EPB, and delegates experts to different relevant international scientific associations or working groups (e.g., International Permafrost Association, International Association of Cryospheric Sciences, Svalbard Science Forum).

Poland has several bilateral cooperation bonds and agreements fostering collaboration on polar research and logistics at the international level. The MEiN supports contribution to international polar logistics, infrastructure and observing networks (e.g., membership to SIOS, SAON, etc.). For instance, Poland contributes every year to international logistics in Svalbard by cruises of the RV Horyzont II between Hornsund, Longyearbyen and Ny-Ålesund within the frame SIOS collaboration.

The Institute of Biophysics and Biochemistry PAS, as the Arctowski Polish Antarctic Station operator, has bilateral cooperation agreements on collaboration in research and logistics with institutions in Brasil, Chile, Peru, Russia, and other countries. Polish research institutions have been involved in several EU-funded large polar projects (Horizon 2020, e.g. INTERACT and INTAROS) and within the frame of the Norway Grants and the EEA Grants. They also have other bilaterally and multi-nationally funded collaborations. Dominating are partnerships with institutions in Europe and the USA.

New collaboration might be established at the level of particular Polish academic institutions ([contacts and descriptions](#)) and more generally with the CPR PAS.



Portugal



Logistic Suport Portugal. Photo: Gonalo Vieira

Polar research funding organisations and governance

The [Fundação para a Ciência e a Tecnologia \(FCT, Portuguese Foundation for Science and Technology\)](#), part of the [Minist rio da Ci ncia, Tecnologia e Ensino Superior](#), is the State funding agency for research, including investigation in the polar regions. It hosts the Polar Programme which links with the Instituto de Geografia e Ordenamento do Territ rio (IGOT) - University of Lisbon, which manages the Portuguese Polar Programme (PROPOLAR). Information on the [Portuguese Polar Programme](#) and the FCT funding schemes can be found [here](#).

Polar research strategies and coordination

The FCT is the national agency responsible for coordinating and funding polar research through the [Portuguese Polar Programme](#) (PROPOLAR). The FCT links with other Ministries, and national and international organisations on polar research.

Research funding is supported through competitive open calls in all scientific domains. A national agenda for polar research is under preparation involving of all national research institutions. It will be completed in 2022.

Polar research funding and application procedures

Regular national calls for research projects are open to all scientific themes and polar research has no specific branch. The evaluation is based on principles of scientific excellency, with all research disciplines having the same priority.

Funding for polar research is provided mainly by two schemes:

- The [FCT national calls](#) for projects in all scientific domains, which have no specific theme for the polar regions, but funds also Arctic and Antarctic research. These calls support up to three-year projects. The FCT also funds polar research through other programmes, such as the [MIT-Portugal Open Call](#) for Exploratory Grants, the PhD grant and post-doctoral contract calls (annual calls), and different bilateral agreements.
- The national calls of the [Portuguese Polar Programme](#) for logistic support to polar research (coordinated by PROPOLAR hosted by IGOT). These calls open annually and support short-term field-based projects, or research in laboratories in foreign institutions. Upon request, PROPOLAR provides logistical support for other FCT-funded projects and for national teams involved in European-funded projects.

Some institutions fund their own polar projects with internal calls. One example is [the University of Lisbon College on Polar and Extreme Environments](#), which funds polar expeditions and has a grant programme to support the internationalisation of students on polar research topics.

Substantial International research collaborations

Through the FCT, Portugal is represented in the main international organisations supporting polar research and logistics: IASC, SCAR, EPB, COMNAP and FARO. The national delegation at the Antarctic Treaty System is under responsibility of the Ministry of Foreign Affairs.

Portuguese research institutions are involved in several European funded polar projects. Portugal has several bilateral collaborations and agreements fostering collaboration on polar research and logistics at the international level. Through the FCT, scientific and/or logistical cooperation exists for several years with the British Antarctic Survey (BAS), CNPq – Brazil, the Bulgarian Antarctic Institute (BAI), the Chilean Antarctic Institute (INACH), the Italian Consiglio Nazionale delle Ricerche (CNR), the Korean Polar Research Institute (KOPRI), and the Spanish Polar Committee (CPE). These collaborations are sustained by Memoranda and/or Letters of Understanding. Besides these, the Portuguese Polar Programme maintains regular logistic cooperation with Argentina (Instituto Antártico Argentino), Brazil (Programa Antártico Brasileiro), China (Chinese Arctic and Antarctic Administration), Peru (Dirección de Asuntos Antárticos), Turkey (TUBITAK Marmara Research Center - Polar Research Institute), United States of America (National Science Foundation) and Uruguay (Uruguayan Antarctic Institute).

Portugal contributes to the international logistics in Antarctica with an annual freighted flight operating from Chile but has no stations in the polar regions. Hence, international cooperation is essential for national field activities, especially in Antarctica. Since the start of the Portuguese Polar Programme, Spain has been the main cooperation partner, supporting the transport of personnel and equipment, as well as the accommodation of scientists in the Spanish Antarctic stations. This collaboration is framed by a bilateral scientific agreement signed in 2009.



Antarctic Activities Portugal. Photo: Gonalo Vieira

Spain



Iceberg by Marguerite Bay. Photo: Antonio Quesada

Polar research funding organisations and governance

Spain has no polar institute as such. The coordination body is the Spanish Polar Committee, in which ministries involved in polar activities are represented.

Logistics and polar science are funded by the **Ministry of Science and Innovation**, through its Research Council, and by the **State Research Agency** (Agencia Estatal de Investigación). The State Research Agency reserves a certain amount of funds every year for polar projects. Both organisations are members of the [Spanish Polar Committee \(SPC\)](#).

Sporadically, smaller funding can be obtained from regional funding organisations, research centres, and others.

The [Unidad de Tecnología Marina \(UTM\)](#), as part of the Research Council, has the mission to organise and implement the logistics for all activities related to Antarctica and to collaborate in Arctic activities. This unit is funded by the Ministry of Science and Innovation. UTM is also the owner and the operator of Antarctic Juan-Carlos-I. Station at Livingston Island.

The Spanish Army is the owner and the operator of the Gabriel de Castilla Base located on Deception Island. The Spanish

Navy operates RV Hesperides and UTM operates RV Sarmiento de Gamboa. Both stations and vessels are fully funded from the Ministry of Science and Innovation, and both are part of the ICTSs (Singular Scientific and Technical Infrastructure) FLEET and Antarctic Stations.

Polar research strategies and coordination

In 2016, Spain published [Guidelines for a Spanish Polar Strategy](#), which lays out Spanish interests in the polar regions.

The State Research Agency reserves a certain amount of money each year for the annual call for projects. The scientific activity under the polar programme is not prescribed but it is based on an open principle in which each discipline has equal status. All proposals are evaluated for scientific quality and excellence. The SPC, through the Access Committee, is also involved in setting priorities for funded projects. Once the funding agency provides the list of funded projects, they will be included into the logistics slots calendar depending on the date, time, and required space for their activity.

The cost of logistics is not included in the scientific proposals. These are directly provided by the Ministry of Science and Innovation, through the ICTS system.



RV Hesperides and Juan Carlos I station. Photo: Fernando Moleres

Polar research funding and application procedures

The State Research Agency opens a call for all sciences and disciplines each year, which is not specifically dedicated to polar research. Scientists can apply for only one project and, if granted, can work in that project for three or four years. In the meantime, scientists cannot apply for another project from the State Research Agency. Only direct scientific costs can be requested in the budget (not logistics). All Spanish institutions are funded through this competitive process.

When the State Research Agency funds scientific projects under open competitive calls, the logistic expenses are automatically covered (transportation from South America to Antarctica and movements and accommodation during the Antarctic expedition).

International projects follow the same regime when the reciprocity principle is fulfilled.

All research infrastructures are coordinated by the Spanish Polar Committee (SPC) and the access is granted by an [Access Committee](#) independent of the operators. International projects have to fill in a [form](#) which has to be submitted by May 15 every year for the next summer season. The international projects are typically facilitated between National Polar Authorities. Requests are prioritised through a number of published criteria (Memorandum of Understanding with the country and reciprocity principle). European projects funded by Framework Programmes have the same rights and obligations as national projects (i.e. direct access to logistics).

Substantial International research collaborations

Spain does not own or operate a research station in the Arctic. It also does not have permanent collaborative programmes in the Arctic for science, but dedicated projects. Researchers establish links with scientific groups (making use of their logistics) from Greenland, Svalbard, and Canada. One of the roles of the SPC is to encourage and facilitate collaborations.

Science in the Antarctic Peninsula region is based on a continuous collaboration. Every year many international researchers (season 2019-2020, we had researchers from 14 countries) visit the Spanish research facilities. Likewise, many Spanish researchers perform their work at other stations or vessels.

All international collaborations in both the Arctic and the Antarctic are coordinated and shaped by the Spanish Polar Committee through ad hoc agreements or long-term Memoranda of Understanding (MoUs). Within this framework Spanish researchers are participating in most EU-funded projects on polar regions.



Sweden



Abisko Scientific Research Station. Photo: Ida Kinner

Polar research funding organisations and governance

The [Swedish Research Council](#) (VR), the [Research Council \(FORMAS\)](#) and the [Swedish National Space Agency](#) evaluate and fund polar research projects.

The [Swedish Polar Research Secretariat \(SPRS\)](#) is a governmental agency mandated to co-ordinate and promote Swedish polar research. The agency's primary mission is to organise and support research expeditions to the polar regions and manage research infrastructure. The Secretariat operates Abisko Scientific Research Station (ANS) in Sweden, the Antarctic bases Wasa and Svea on Dronning Maud Land in Antarctica and charter the icebreaker IB Oden for expeditions in the Arctic. Other research funding bodies for polar research are [Sweden's innovation agency](#) (VINNOVA), [Swedish Environmental Protection Agency](#), the [Swedish International Development Cooperation Agency](#) (SIDA), [Swedish Research Council for Health, Working life and Welfare](#) (FORTE), [Mistra](#), [Riksbankens jubileumsfond](#), the [Knut and Alice Wallenberg Foundation \(KAW\)](#) and the [Swedish Foundation for Strategic Research \(SSF\)](#).

Polar research strategies and coordination

[Sweden's 2020 strategy for the Arctic region](#) highlights how the Swedish engagement in the Arctic has involved the Government, the Riksdag and government agencies, as well as regional and local authorities, indigenous peoples' organisations, universities, companies, and other stakeholders in the Arctic region of Sweden.

The overarching goal of the Swedish research policy is that Sweden should be a prominent research nation, where research and innovation are performed with high quality and contribute to the development of society and the competitiveness of industry. The Arctic policy adopted in 2020 underlines that Sweden wants to be a world-leading polar research nation that can conduct expeditions throughout the year, and that Swedish polar research should have a greater international impact.

The four operative goals under the theme of polar research and monitoring are:

- to strengthen research, environmental monitoring, and observation systems in and about the Arctic
- to support and further develop international cooperation on polar research, including climate research
- to continue to consider possible alternatives to access a heavy polar-classed, climate-neutral research vessel for year-round activities even when it is considered that IB Oden can no longer be used for research assignments
- to encourage exchanges of knowledge between researchers and indigenous peoples in the Arctic and to work to make traditional knowledge and scientific research mutually available.

Sweden has ten national [research programmes](#) that stretch over ten years and are divided amongst the national research funding agencies. None of them is geographically specific but the [projects](#) that have been funded through them include those with a focus on polar regions.

The review of the [Swedish Sami Parliament's views](#) is also of important influence for the preparation of the [renewed Swedish research and policy](#), and the [Swedish Sami National Association's policy for research and project cooperation](#).

Polar research funding and application procedures

In 2020 the Swedish Polar Research Secretariat adopted a new framework to facilitate national and international planning of programme level support called "[the Polar Research Process](#)".

The Swedish Research Council, the Research Council FORMAS and the Swedish National Space Agency evaluate and fund the polar research projects. The Swedish Polar Research Secretariat provides the logistics and infrastructure necessary to perform the research through [open calls](#) and [international access to ANS](#). The four agencies work together and cooperate with scientists and funding agencies in other countries to coordinate research logistics and plan scientific expeditions.

Tarfala research station is owned and run by Stockholm University. The station is in the Tarfala valley, on the east slope of Kebnekaise massif. The station welcomes scientists and students from national and international universities who wish to carry out research projects or run a course. [Information regarding applications for access](#) is provided [here](#).



Icebreaker Oden Arctic Ocean. Photo: Ida Kinner

Substantial International research collaborations

Swedish polar scientists have been successful in international calls, especially in Horizon 2020 calls, the Belmont forum framework programme (especially Arctic specific calls), and NordForsk calls for centres of excellence with a focus on the Arctic.

The overarching coordinating agency for the EU Framework Programme Horizon Europe and NordForsk is the Swedish Research Council.

The responsibility for participation in the Belmont Forum is divided between the Swedish research Council and the Research Council FORMAS. FORTE (Swedish Research Council for Health, Working life and Welfare), the research council FORMAS and VINNOVA (Sweden's innovation agency) participate in co-funding in NordForsk.

Sweden promotes international coordination and cooperation in both science and logistics in the Arctic and in Antarctica. Sweden has extensive international cooperation in polar research and logistics with countries including Canada, Denmark, Finland, Germany, Norway, Russia, the UK, and the US.

Examples are Sweden's cooperation in marine research with the UK and US on glacier and seabed studies and with the US and Germany on atmospheric and climate conditions near the North Pole. Swedish researchers also conduct marine bioprospecting for unique genes, molecules, and organisms, which may result in new products and processes for commercial use in a range of different areas such as the health sector, biologically based raw materials, food production, and renewable energy production. Many universities, agencies, institutions, and Ministries have Memoranda of Understanding or Letters of Interest in place aimed to facilitate exchange of data, researchers, and resources. Several regional initiatives exist for the Arctic, such as the [Barbents-Euro-Arctic cooperation](#) and the [Northern Dimension](#), that include research and monitoring activities.



Switzerland



Photo from the Arctic Century Expedition, the research vessel Akademik Tryoshnikov at Inostatseva Bay. Photo: 2021 Swiss Polar Institute, CC BY 4.0

Polar research funding organisations and governance

[The State Secretariat for Education, Research and Innovation \(SERI\)](#) has the lead when it comes to supporting research organisations, setting research policy priorities, and bilateral/multilateral relations for research. The responsibility for the polar research field lies with the Division for International collaboration, which is also responsible for bilateral research collaborations and agreements. Another Division at SERI is responsible for the Swiss participation in EU research programmes.

Bottom-up oriented, the research funding landscape in Switzerland is dominated by the [Swiss National Science Foundation \(SNF\)](#). SNF is the main funding agency for public research in Switzerland. It distributes competitive R&D funding at the level of individual projects as well as of large collaborative projects/programmes. SNF funds many research projects related to polar and high-altitude research. Between 2018-2020, SNF funded 37 projects (+ 27 careers mobility grants). These were spread across 11 Swiss research institutions (ETH-domain, cantonal universities, Universities of Applied Science).

There are complementary sources of funding available for the funding of science projects, research collaborations, and re-

search programmes taking place in polar regions. Furthermore, polar research projects are funded through different funding instruments (individual projects, larger synergia collaborative projects, bursaries, international collaboration, and workshops).

In order to specifically support the needs of polar research (logistics, safety, expeditions, dedicated funding, outreach) and complement existing funding instruments by the SNF, the [Swiss Polar Institute \(SPI\)](#) was founded in 2015. The SPI is a Research Organisation of National Importance under the article 15 of the Federal law on Education, Research, and Innovation. The SPI is complementary to SNF (and ERC) funding and offers dedicated support, funding, courses, and services to the Swiss polar and high-altitude research community. SPI offers funding for field work for ECRs and experienced scientists. It funds participation of students in international fields and summer schools. It also launched Swiss flagship programmes over 3-5 years in polar regions.

SERI is the source of federal funding for the SPI for the period 2021-2024. The SPI is substantially co-funded by private philanthropy, notably in view of its research expeditions but also in its baseline funding. This leads to very fruitful private-public collaboration and partnerships. The main donor is currently the Swiss Polar Foundation. Additional funds are acquired through the Swiss BNP-Paribas Foundation.

Both the [Federal Department of Foreign Affairs \(FDFA\)](#) and SERI sit on the Board of SPI. FDFA also participates in meetings of the Swiss Committee on high altitude and polar research (SKPH) and coordinates annual meetings of all polar stakeholders.

All research funding organisations are funded by the Parliament through four year bills („messages“). The research funding organisations are strictly independent from the federal administration and operate separately from each other. They have their own legal personality and independent processes. SPI and SNSF regularly exchange information to avoid overlaps and misunderstandings and to optimise synergies.

Polar research strategies and coordination

There is no overarching strategy or theme given by the government or the federal administration. There is no overarching national polar programme (Arctic or Antarctic) but complementary research funding organisations which work side-by-side and coordinate their funding instruments and efforts.

SERI oversees and funds through four-year bills (currently 2021-2024) the whole Swiss research landscape. The funding is mostly indirect, i.e. distributed to institutions of national importance, large programmes, and funding institutions such as the Swiss National Science Foundation. It also manages the bilateral collaboration of Switzerland in the field of research with many countries with which they have bilateral agreements and manages Swissnex, the network of Swiss science representations abroad.

Polar research funding and application procedures

The [Swiss National Science Foundation \(SNSF\)](#) funds projects in all disciplines of science in a bottom-up manner. Projects in the Arctic, Antarctic or High-Altitude regions are therefore eligible to funding based on their scientific excellence and in competition with other projects. There are no dedicated funding pools for polar or high-altitude projects and no specific funds for polar operations or the organisation of expeditions.

SNSF also operates many funding instruments for international collaboration (bilateral collaboration with specific countries, Lead Agency agreements, funding of international workshops, international outgoing fellowships, inclusion of funding for international programmes in large (Sinergia) projects) which can also be put to good use by polar scientists.

Projects are attributed based on their scientific merit through an external peer review process.

The [Swiss Polar Institute \(SPI\)](#) complements the science funding attributed by SNSF through dedicated funding for the polar and high-altitude science community. Annual calls are open to scientists undertaking research in all polar and remote high-altitude

environments, without restriction of themes with the specific aim to facilitating access to field work and operations. Specific funding is available for the development of new technologies to be used in the field. Projects are selected by external panels of experts on the basis of their scientific merit.

Dedicated funding is available for the organisation or participation in international expeditions and for international access to infrastructure.

Substantial International research collaborations

The SPI does not own or operate national facilities in polar regions. For this reason, international partnerships are central to all scientific projects and programmes – large and small. Swiss research institutions have built up a large network of research partnerships over the years. They range from long-term institutional collaborations to ad-hoc data sharing or access infrastructure such as the Antarctic Circumnavigation Expedition (ACE) (2016-2017) or Arctic Century (2021). In no specific ranking order, Swiss researchers partner specifically with the following nations/organisations: NSF-USA for work in Greenland and Antarctica, Polar Secretariat-Belgium for work at Princess Elisabeth Station in Antarctica, IPEV-France for work in the Sub-Antarctic and Antarctica, AWI-Germany for work in the Southern Ocean and Antarctica, AAD-Australia for work in Antarctica. Further collaboration in Antarctica in recent years include South Africa, Chile, Korea and Japan. In the Arctic, specific collaboration includes the Institute of Natural Resources-Greenland, GEOMAR in Germany and the AARI in Russia. In addition, Switzerland maintains countless collaborations in Siberia, Greenland, Canada, Scandinavia, etc.

Most collaborations are managed directly by researchers between themselves and international colleagues. They are in touch through conferences and joint scientific organisations. In order to get an overview of potential partners in Switzerland, international colleagues can use the SPI website (all funded projects are listed there) as well as the SNSF's P3 database which lists all research projects funded by SNSF in Switzerland.

The SPI offers a number of funding opportunities dedicated to international collaboration in polar research. SPI already has different Memoranda of Understanding (MoUs) and agreements in place or under finalisation.

Expeditions organised by the SPI are always international by nature and access by scientists based outside Switzerland is granted on a competitive basis (call for proposals). International institutions interested in establishing institutional frameworks of collaboration in the polar and high-altitude fields should contact the Swiss Polar Institute which is the primary contact point in Switzerland for this type of requests.



Turkey



2019-2020 Antarctic Season, Horseshoe Island. Photo: Hayrettin Bektas

Polar research funding organisations and governance

[TÜBİTAK MAM Polar Research Institute](#) (PRI) was established in December 2019, under the Marmara Research Centre (MAM) of the Scientific and Technological Research Council of Türkiye (TÜBİTAK). Since then, TÜBİTAK MAM PRI is the national polar operator and is responsible for coordinating other research institutions and governmental bodies, organising polar expeditions, and maintaining polar infrastructure. TÜBİTAK is the leading agency for managing, funding and conducting of research in Turkey. The Council is an affiliated institution of the Ministry of Industry and Technology. The national polar research studies are funded by the Presidency of the Republic of Türkiye.

Polar research strategies and coordination

The TÜBİTAK MAM Polar Research Institute (PRI) provides funding to scientific projects via the “Academic Research Funding Programme Directorate (ARDEB)” of TÜBİTAK with annual project calls. The budget for the projects is transferred from the main budget of PRI which is supplied by [Presidency of the Republic of Türkiye](#). Beside of the project calls, PRI also works with other governmental institutions (e.g. Turkish State Meteorological Service, Office of Navigation Hydrography and Oceanography, General Directorate of Mapping, TÜBİTAK Science and Society Department) by bilateral/multilateral cooperation agreements.

The Polar research strategy is based on the National Polar Science Programme (2017-2022) which was published by the [Ministry of Industry and Technology](#), with contributions of over 100 stakeholders from 40 different institutions. Additionally, a special emphasis was given for increasing the polar research capacity in the 11th Development Plan (2019-2023) of the Presidency of Strategy and Budget.



2016-2017 Antarctic Season, Antarctic Peninsula. Photo: Sinan Yirmibesoglu

Polar research funding and application procedures

The Scientific and Technological Research Council of Türkiye (TÜBİTAK) aims to leverage scientific research by creating support mechanisms for researchers who are interested in the identified priority research themes and who have studies in the mentioned fields, and at the same time to enable Turkey to move forward in the scientific studies related to the polar regions. The scientific expeditions to the continent are conducted annually and together with the [TÜBİTAK Academic Research Funding Programme Directorate](#) at PRI which opens and funds annual national project calls for upcoming polar expeditions. The applications are evaluated to select researchers eligible to participate in the expeditions. Approximately 15 projects are funded each year. PRI also conducts scientific projects in collaboration with universities and other national and international institutions. Long-term monitoring projects are directly funded and carried out by PRI.

Turkish Antarctic Expeditions (TAE) and Turkish Arctic Scientific Expeditions (TASE) are organised annually to allow conducting field studies in polar regions. The expeditions can also host researchers from other countries through bilateral cooperation agreements.

Substantial International research collaborations

Turkish polar scientists take part in EU and international research projects mainly based on personal initiatives. Since 2017, Turkish scientists have been hosted by Antarctic stations of Belgium, Bulgaria, Chile, Czech Republic, Poland, the Republic of Korea. Researchers from Belarus, Bulgaria, Chile, Czech Republic, Germany, Portugal and New Zealand participated in the Turkish Antarctic Expeditions (TAE). Logistic capabilities of Turkish polar expeditions are always open to all nations.

Memorandums of Understanding (MoUs) and Letters of Intent (LoIs) are signed to improve scientific and logistic collaboration in polar regions. Up to date, MoUs were signed between TÜBİTAK MAM PRI or the Ministry of Industry and Technology and Belarus, Bulgaria, Czechia, Japan, Spain, and Ukraine. Additionally, a letter of intent was signed between TÜBİTAK MAM PRI and the Republic of Korea.



United Kingdom



*British Antarctic Survey's Halley VI Research Station on the Brunt Ice Shelf.
Photo: Michal Krzysztofowicz*

Polar research funding organisations and governance

Seven separate research councils are responsible for funding and coordinating academic research in the UK. These are:

- [Arts and Humanities Research Council](#)
- [Biotechnology and Biological Sciences Research Council](#)
- [Engineering and Physical Sciences Research Council](#)
- [Economic and Social Research Council](#)
- [Medical Research Council](#)
- [Natural Environment Research Council](#)
- [Science and Technology Facilities Council](#)

Whilst all councils will fund polar research, funding predominately comes from Natural Environment Research Council (NERC). In addition, there are a numerous non-governmental and philanthropic funders within the UK.

The [British Antarctic Survey](#) (BAS) is a component of NERC which itself is part of the United Kingdom Research and Innovation (UKRI). For over 60 years, BAS has undertaken the majority of Britain's scientific research in and around the Antarctic and Arctic regions, building a reputation as a world-renowned polar science and logistical centre. BAS is the main provider of UK polar logistics for research, and operates Arctic and Antarctic bases, an ice-strengthened research vessel and a fleet of five aircraft specially adapted for flying in the extreme polar environment. Long term funding for BAS is provided by NERC.

The [UK Arctic Office](#) is tasked with supporting UK research in the high north; providing advice to policy makers; and developing international scientific cooperation across all aspects of Arctic Research. It does this through improving communication and connections; ensuring better representation and engagement; and delivering new research opportunities. It also incorporates the management of the UK Arctic Research Station at Ny-Ålesund on Svalbard. Funding for the UK Arctic Office is provided by NERC.

Polar research strategies and coordination

Each Research Council, which is overseen by UKRI, has their own funding strategies and goals. The UK has no national scientific polar programme nor does it have a polar research strategy or dedicated polar funding stream. Funding is generally obtained through competitive proposals. For example, NERC (the primary funder of polar science) has several funding opportunities each year. These are:

- National capability: includes the research and development activities which keeps UK research capability at the cutting edge.
- Strategic research: is designed to address major scientific questions that are important for the UK's prosperity and well-being in the 21st century.
- Discovery Science: is driven by curiosity rather than by a strategic agenda can have enormous benefits far beyond the advancement of knowledge.
- Innovation funding: connecting researchers with those who can put their knowledge and skills to use, whether in industry, government or the third sector.
- Postgraduate training: are designed to prepare the recipients for careers in academia and beyond.
- Fellowships: support outstanding environmental scientists and enable them to develop their research, start to build a research group and become internationally recognised.
- Capital funding: investment in new technologies, equipment, infrastructure, facilities, and estates.

Occasionally, UKRI's research councils conduct targeted research programmes that address research questions of the utmost importance for polar regions.

BAS provides a sustained and on-going national capability for the majority of Britain's scientific research in the Antarctic, especially the long-term monitoring of key scientific parameters. This research is supplemented by competitive grants obtained by UK researchers through directed research programmes, or through discovery research.

Very few long-term Arctic research programmes exist in the UK. This is because Arctic science is generally funded through a series of short-term competitive grants of one to year years duration. They are either obtained through directed research programmes (major subjects to tackle) or through discovery research (innovative and novel projects). Arctic activities are coordinated through the UK Arctic Office.

Polar research funding and application procedures

For both Arctic and Antarctic research projects, the evaluation and selection process is based on scientific excellence. Proposals are anonymously evaluated by both UK and foreign experts. This evaluation is then followed by a strategic selection panel that usually consists of UK scientists. In addition, for the Antarctic BAS has a number of in-house research programmes and long-term monitoring sites. These are funded through an independent expert review process.

UK researchers have a strong history of international collaboration and welcome participation in the projects from the international community. International applicants wanting to participate should contact the [UK Arctic Office](#) for further information on Arctic research and the BAS for Antarctic research. In the first instance access to the UK's Antarctic infrastructure and logistics is assessed by completing an Operations Support Planning Questionnaire (OSPQ). The supplied information is then used to assess how BAS can best help their project. Priority is given to UK researchers and international researchers collaborating with UK projects, but other requests are seriously considered.

Substantial International research collaborations

Since the withdrawal of the UK from the European Union in February 2020, participation to European research initiatives is funded via the UK government, through a UK-EU bilateral agreement.

The participation of the UK to the Belmont Forum is funded through the Research Council NERC.

Other international funding initiatives are generally performed through bilateral or multi-lateral agreements with those nations.

The UK has a vibrant and dynamic polar research community. Therefore, at any one time there will be numerous relationships between the UK and foreign researchers with respect to polar science. Furthermore, because of the UK's logistic and scientific capabilities it has long-standing relationships with most, if not all, countries performing polar research. UK researchers collaborate with many, if not all, nations involved in polar science. International research collaboration is encouraged by the Research Councils, and is expected in the research proposals.

Polar facilities are open for international research cooperation. Priority is generally given to projects in collaboration with UK scientists, but all requests (via completing the Operations Support Planning Questionnaire (OSPQ) form) are seriously considered.

Appendix

Alphabetic	Organisation Acronym	Organisation Full Name	Country
A	AMAP	Arctic Monitoring and Assessment Programme	Faroe Islands
	AllEnvi	National Research Alliances, one being dedicated to Environment and Food	France
	ANR	National Research Agency	France
	AWIPEV	Base - French - German Arctic Research Base at Ny-Ålesund	France
	AvH	Alexander von Humboldt Foundation	Germany
	AWI	Alfred-Wegener-Institute, Helmholtz Zentrum für Polar und Meeresforschung	Germany
	ARCTIC-BIODIVER	Scenario of freshwater biodiversity and ecosystem services in a changing Arctic	Iceland
	AWERRS	Arctic Wetlands Ecosystem - Resilience through Restoration & Stewardship	Iceland
	AAD	Australian Antarctic Division	Other
	AARI	Antarctic Research Institute	Other
	AMAP	Arctic Monitoring and Assessment Programme	Other
	ARICE	Arctic Research Icebreaker Consortium	Other
	ATS	Antarctic Treaty Systems	Other
	ANS	Abisko Scientific Research Station	Sweden
	ARDEB	TÜBİTAK Academic Research Funding Programme Directorate	Turkey
B	BELSPO	Belgian Federal Science Policy	Belgium
	BAI	Bulgarian Antarctic Institute	Bulgaria
	BNSF	Bulgarian National Science Fund	Bulgaria
	BMBF	Federal Ministries for Education and Research	Germany
	BMUV	Federal Ministry for Environment, Nature Conservation and Nuclear Safety	Germany
	BMWi	Federal Ministry for Economy and Energy	Germany
	BAS	British Antarctic Survey	Uk
C	CNES	National Space Agency	France
	CNRS	French National Scientific Research Centre	France
	CAFF	Conservation of Arctic Flora and Fauna	Iceland
	CNR	National Research Council	Italy
	CSA	Arctic Scientific Committee	Italy

	CSNA	National Scientific Commission for Antarctica	Italy
	CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources	Other
	CPR PAS	National Committee on Polar Research, Polish Academy of Sciences	Poland
D	DAFSHE	Danish Agency for Higher Education and Science	Denmark & Greenland
	DANCEA	Danish Cooperation for Environment in the Arctic	Denmark & Greenland
	DGRI	General Direction for Research and Innovation of the MESRI	France
	DAAD	German Academic Exchange Service	Germany
	DFG	German Research Foundation	Germany
	DAMOCLES	Developing Arctic Modeling and Observing Capabilities for Long-term Environmental Studies	Other
E	EPA	Danish Environmental Protection Agency	Denmark & Greenland
	ERC	Estonian Research Council	Estonia
	EPA	Danish Environmental Protection Agency	Faroe Islands
	ENEA	National Agency for New Technologies, Energy and Sustainable Economic Development	Italy
	EPB	European Polar Board	Other
	ESA	European Space Agency	Other
	ERA-NET	European research Area Network	Other
	ESFRI	European Strategy Forum on Research Infrastructures	Other
	EPICA	European Project for Ice Coring in Antarctica	Sweden
F	FFG	Austrian Research Promotion Agency	Austria
	FWF	Austrian Science Research Fund	Austria
	F.R.S.-FNRS	Fund for Scientific Research	Belgium
	FWO	Research Foundation - Flanders	Belgium
	FAF	Forum for Arctic research	Denmark & Greenland
	FINNARP	Finnish Antarctic Research Programme	Finland
	FMI	Finnish Meteorological Institute	Finland
	FMI - ARC	Arctic Space Centre	Finland
	FOF	French Oceanographic Fleet	France
	FRAM	Fram Centre (FRAM - High North Research Centre for Climate and the Environment)	Norway
	FAF	Forum for Arctic Research	Other
	FARO	Forum of Arctic Research Operators	Other
	FRAM	Frontiers in Arctic Marine Monitoring	Other

	FCT	Fundação para a Ciência e a Tecnologia	Portugal
	FORMAS	Research Council from the Ministry of the Environment and Energy and the Ministry of Enterprise and Innovation	Sweden
	FORTE	Swedish Research Council under the Swedish Ministry of Health and Social Affairs	Sweden
	FDFA	Federal Department of Foreign Affairs	Switzerland
G	GACR	Czech science foundation	Czech Republic
	GEOMAR	Helmholtz Center for Ocean Research Kiel	Germany
	GEOMAR	Helmholtz Center for Ocean Research Kiel	Other
	GIS	Geographic Information System	Other
H	HGF	Helmholtz Association	Germany
I	IAH	International Research Hub in Greenland	Denmark & Greenland
	IGRAS	Institute of Geography of the Russian Academy of Sciences	Estonia Other
	IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer	France
	IPEV	French Polar Institute Paul-Emile Victor	France
	IACN	Icelandic Arctic Cooperation Network	Iceland
	IASC	Secretariat of the International Arctic Science Committee	Iceland
	ICG	Icelandic Coast Guard	Iceland
	IMO	Icelandic Meteorological Office	Iceland
	IMR	national Institute of Marine Research	Norway
	IASC	International Arctic Science Committee	Other
	IASSA	International Arctic Social Sciences Association	Other
	INACH	Chilean Antarctic Institute	Other
	INTERACT	International Network for Terrestrial Research and Monitoring in the Arctic	Other
	IBB PAS	Institute of Biochemistry and Biophysics, Polish Academy of Sciences	Poland
	IGF PAS	Institute of Geophysics, Polish Academy of Sciences	Poland
	IGOT	Instituto de Geografia e Ordenamento do Território	Portugal
J	JD	Ministry of Justice and Public Security	Norway
	JPI	Joint Programming Initiative	Other
K	KFEM	Danish Ministry of Climate, Energy and Utilities	Denmark & Greenland
	KBAS	state-owned Kings Bay Company	Norway
	KD	Ministry of Education and Research	Norway
	KLD	Ministry of Environment and Climate	Norway
	KPH	polar icebreaking research vessel FF Kronprins Haakon	Norway

M	MES	Ministry of Education and Science	Bulgaria
	MOEW	Ministry of Environment and Water	Bulgaria
	MSMT	Ministry of Education, Youth and Sports	Czech Republic
	MZP	Ministry of the Environment	Czech Republic
	MZV	Ministry of Foreign Affairs	Czech Republic
	MMM	Ministry of Agriculture and Forestry	Finland
	MEAE	Ministry of Europe and International Affairs	France
	MESRI	Ministry of Higher Education, Research and Innovation	France
	MFRI	Marine and Freshwater Research Institute	Iceland
	MAECI	Ministry of Foreign Affairs and International Cooperation	Italy
	MUR	Ministry of Universities and Research	Italy
	MDIR	Norwegian Environmental Agency	Norway
	MFA	Ministry of Foreign Affairs	Norway
	MOSAic	Multidisciplinary drifting Observatory for the Study of Arctic Climate	Other
	MoUs	Memoranda of understanding	Other
	MoES	Ministry of Education and Science	Poland
	MAM	Marmara Research Centre	Turkey
N	NCPS	National Centre for Polar Studies	Bulgaria
	NHS	National Institutes of Health	Faroe Islands
	NORA	Nordic Atlantic Cooperation	Faroe Islands
	NSDC	National Satellite Data Centre	Finland
	NICH-Arctic	Climate, Human and Culture through time across the coastal (sub) Arctic North Atlantic	Iceland
	NPP	Netherlands Polar Programme	Netherlands
	NWO	Dutch Research Council	Netherlands
	NFD	Ministry of Trade, Industry and Fisheries	Norway
	NORD	Nord University	Norway
	NORDFORSK	Funding for Nordic research cooperation	Norway
	NPI	Norwegian Polar Institute	Norway
	NSDC	National Satellite Data Centre	Other
	NAWA	Polish National Agency for Academic Exchange	Poland
	NCBR	National Centre for Research and Development	Poland
	NCN	National Science Centre	Poland
	NERC	Natural Environment Research Council	Uk
O	ÖAW	Austrian Academy of Sciences	Austria
	OSL	Otto-Schmidt Laboratory	Germany

	OGS	National Institute of Oceanography and Experimental Geophysics	Italy
	OED	Ministry of Petroleum and Energy	Norway
	OSPQ	Operations Support Planning Questionnaire	Uk
P	POMOR	German-Russian Master Programme for Polar- and Marine Science	Germany
	PTJ	Projekträger Jülich	Germany
	PNRA	National Antarctic Programme - since 1985	Italy
	PRA	National Arctic Programme - since 2018	Italy
	PRIN	Projects of Relevant National Interest	Italy
	PAP	Polar Activities Programme	Netherlands
	PROANTAR	Brazilian Antarctic Program	Other
	PASIFIC/PAS	Polish Academy of Sciences	Poland
	PolarPOL	Polish Multidisciplinary Laboratory for Polar Research	Poland
	PPC	Polish Polar Consortium	Poland
	PTF	Polar Task Force	Poland
	PROPOLAR	Portuguese Polar Programme	Portugal
	PRI	TÜBİTAK MAM Polar Research Institute	Turkey
R	RANNIS	Icelandic Centre for Research	Iceland
	RCN	bilateral arrangements with Norway	Netherlands
	RA	Directorate for Cultural Heritage	Norway
	RCN	Research Council of Norway	Norway
	RiS	SSF service Research in Svalbard database	Norway
S	SGPI	Secrétariat général pour l'investissement	France
	SAI	Stefansson Arctic Institute	Iceland
	STPC	Icelandic Science and Technology Policy Council	Iceland
	SNSF	bilateral arrangements with Switzerland	Netherlands
	SIOS	Svalbard Integrated Arctic Earth Observing System	Norway
	SSF	Svalbard Science Forum	Norway
	SAON	Sustaining Arctic Observing Networks	Other
	SCAR	Scientific Committee on Antarctic Research	Other
	SIOS	Svalbard Integrated Arctic Earth Observing System	Other
	SPC	Spanish Polar Committee	Spain
	SIDA	Swedish International Development Cooperation Agency	Sweden
	SPRS	Swedish Polar Research Secretariat	Sweden
	SERI	State Secretariat for Education, Research and Innovation	Switzerland
	SKPH	Swiss academies of Science	Switzerland
	SNF/SNSF	Swiss National Science Foundation	Switzerland

	SPI	Swiss Polar Institute	Switzerland
T	TACR	Technology Agency of the Czech Republic	Czech Republic
	TAAF	Terres Australes et Antarctiques Françaises	France
	TNA	Transnational Access Arctic programmes.	Italy
	TAE	Turkish Antarctic Expeditions	Turkey
	TASE	Turkish Arctic Scientific Expeditions	Turkey
	TÜBİTAK	Scientific and Technological Research Council of Turkey	Turkey
U	UACEG	University of Architecture, Civil Engineering and Geodesy	Bulgaria
	Uarctic	University of the Arctic	Denmark & Greenland
	UFM	Ministry of Higher Education and Science	Denmark & Greenland
	UM	Ministry of Foreign Affairs of Finland	Finland
	UiT	University of Tromsø - Arctic University of Norway	Norway
	UNIS	University Centre in Svalbard	Norway
	UTM	Unidad de Tecnología Marina	Spain
	UIDB - TÜBİTAK	Directorate for International Cooperation	Turkey
	UKRI	United Kingdom Research and Innovation	Uk
	VINNOVA	Sweden's innovation agency	Sweden
W	WMO	World Meteorological Organization	Other
Y	YM	Ministry of Environment	Finland

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Johnson Dock, Livingston Island. Photo: Oleg Vassilev



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