

Cover sheet

Full name of state or organization:

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Information for appropriate contact person

Full name: Michael Däumer

Email: E21-9@diplo.de

Telephone: +49-30-1817-2520

Organization or department: Federal Foreign Office, Northern European Division

Job Title: Officer for Baltic Sea Cooperation and Arctic Policy

Full mailing address:

Baltic Sea Cooperation and Arctic Policy
Federal Foreign Office – Division E21
Werderscher Markt 1
D-10117 Berlin, Germany
Tel.: +49-30-1817-2520
Fax: +49-30-1817-52520

Is your state or organization still interested in continuing as an Observer of the Arctic Council?

Yes No

Observer Report

Please describe in no more than 2 pages your state or organization's contributions to the work of the Arctic Council's Working Groups, Task Forces and/or Expert Groups since the time of your most recent report, or in the previous two years. Please highlight contributions to specific projects, such as through proposals, concept development, in-kind and financial support, and hosting of meetings. If applicable, please include mention of collaboration with Permanent Participants, such as project proposal endorsement and support.

Germany as an observer to the Arctic Council (AC) since 1996 has contributed continuously and substantially to the work of the Council and its subsidiary bodies for the past 20 years. A partner in and for the Arctic region and its local communities and indigenous peoples, Germany has openly shared its expertise in research, science and technology innovation as a contribution towards implementing the objectives of the AC. As a leading research nation Germany is highly committed to preserving the Arctic environment and promoting sustainable development. Research and technology in combination with a rules-based governance system are the key instruments to support our common goal of peaceful, environmentally safe and sustainable development of the Arctic.

As an adherent of multilateral cooperation on Arctic issues, Germany views the AC first and foremost as *the* Arctic regional forum and high-ranking intergovernmental decision-making body. As an observer, Germany fully respects the exclusive rights of the members of this regional body to take decisions with respect to the Council. Nonetheless, while the AC decides regionally, its impact becomes increasingly global. Bearing this in mind, Germany participates regularly in the meetings of the Senior Arctic Officials (SAO). At the SAO Meeting in Fairbanks, Alaska, in March 2016, Germany gave a statement on behalf of the AC Observer States in order to illustrate the important role of the observer states in Arctic research and the implementation of AC objectives.

Following the publication of the "Guidelines of German Arctic Policy" in 2013, which includes a commitment towards increasing the number of experts in AC subsidiary bodies Germany actively and regularly participates as an observer in all Working Groups, Expert Groups and Task Forces of the AC. In 2015, Germany introduced a substitute system to secure continuous attendance in all subsidiary bodies of the AC. German experts have repeatedly emphasized the significance of, and appreciation for, the free exchange of opinions and information with experts from AC member states.

A vital pillar of Germany's contribution to, and activities in, the Arctic region, thereby supporting AC objectives, is Arctic research through institutional funding and by additional project funding in strategic fields of international cooperation. The Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), coordinates German polar research and makes available to national and international science the necessary infrastructure, such as the research icebreaker "Polarstern", the research aircraft "Polar 5" and "Polar 6" and the German-French Arctic research station AWIPEV on Spitsbergen (Svalbard). Other major German research institutes that actively contribute to the AC include the German Aerospace Center (DLR), the Institute for Advanced Sustainability Studies (IASS), and the Federal Institute for Geosciences and Natural Resources (BGR). In addition, the Federal Ministry of Education and Research (BMBF) launched its third framework program "Research for Sustainable Development (FONA3)" by which research programs in the polar region, especially in the Arctic, are funded.

The following list reflects a selected overview of Working Groups, Expert Groups and Task Forces of the AC to which German experts actively contribute.

German Contributions in Subsidiary Bodies of the Arctic Council (selected excerpt)**Working Groups**

AMAP: Dr. Andreas Herber, AWI, contributes to AMAP EG SLCF, contributing author “AMAP Assessment 2015: Black carbon and ozone as Arctic climate forcers”; Dr. Björn Rost, AWI, contributes to AMAP EG AAO (Arctic Ocean Acidification), is involved in planning and carrying out a set of regional case studies on the consequences of ocean acidification on higher trophic levels; his particular case study investigates the effects on codfish in the Barents Sea; experts from Kiel University provide the necessary modelling expertise;

CAFF: The Common Wadden Sea Secretariat (CWSS), Wilhelmshaven, Germany coordinated the creation of the Wadden Sea Flyway Initiative (WSFI) in 2012. WSFI contributed to the development of CAFF’s Arctic Migratory Birds Initiative (AMBI) work plan 2015-2019 and continues to contribute to the implementation thereof. At the last AMBI workshop (Texel, Netherlands, April 5-7, 2016) the creation of a coordinator position that would be co-hosted by CWSS was proposed, in order to implement AMBI’s objectives by building a hub of expertise and knowledge exchange (German Expert: Gerold Lürßen, CWSS); Prof. Dieter Piepenburg, AWI, contributed as reviewer of the “Arctic Biodiversity Assessment” (ABA), adviser to the “Circumpolar Biodiversity Monitoring Program” (CBMP), and the “State of the Arctic Marine Biodiversity Report” (SAMBR);

PAME: Prof. Dieter Piepenburg, AWI, participates in PAME EGs “Pan-Arctic Network of Marine Protected Areas”(MPA) and “Ecosystem Approach to Management” (EA);

SDWG: German experts introduced a project on “Governance of Resources for Arctic Sustainable Policy and Practice”, GRASP-project, which aims at developing decision-making and governance processes for the Arctic region in a way that is more sustainable and integrative; ongoing dialogue with all Permanent Participants and the Arctic state delegations of Norway, Russia and the Kingdom of Denmark on the GRASP-project proposal (German experts: Dr. Kathrin Keil, Prof. Ilan Chabay, both IASS, Prof. Wilfried Jokat, AWI);

Task Forces

TFAMC: Germany participated in the first two meetings of the TF and shared experiences with representatives of AC members regarding other existing institutional structures and mechanisms for enhanced regional cooperation and collaboration on marine protection, in particular with regard to the work of the OSPAR Commission on the protection of the marine environment of the North-East Atlantic. (German expert: Tim Packeiser, acting on behalf of the German Federal Agency for Nature Conservation (BfN) and the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety);

TFTIA: The German Aerospace Center (DLR), Institute of Communications and Navigation provided expertise in the field of terrestrial and satellite communications for the areas of maritime, land-based and aeronautical Arctic users. Support and contributions will be provided to the final report of the TF. Additionally, the successful PPP (public private partnership) for the Inuvik Satellite Station Facility (ISSF) by the Government of Canada in collaboration with DLR and PrioraNet Canada will be discussed and described (German expert: Dr. Simon Plass);

SCTF: Germany views research and science as its most important contribution to the work of the AC. Therefore, the Federal Foreign Office took great interest in observing the meetings of the SCTF. Statements, including the Joint Statement of Germany, France and the United Kingdom at the Reykjavik meeting in December 2015, were provided to underline the importance of international scientific cooperation for observer states as a significant contribution to the AC. In an effort to continue providing its research expertise and capabilities for the implementation of the Council’s objectives, Germany has consistently called for freedom of research and research governance in and for the Arctic region, thereby supporting the overall objective of the SCTF to enhance scientific cooperation. (German expert: Michael Däumer, Federal Foreign Office);

Expert Groups

BCM: Dr. Birgit Lode, IASS, is actively engaged in the development of the sector paper “O&G Methane and Flaring”.

If applicable, please describe in no more than 1 page your state or organization's future plans for contributing to the work of the Arctic Council's Working Groups, Task Forces and/or Expert Groups. Please highlight intentions to contribute to specific projects and to collaborate with Permanent Participants.

PAME: SiGePAX: With a focus on discovering paleohydrographic and paleoceanographic evolutions in the Arctic and Northwest Pacific Oceans during the last 20,000 years, the Federal Ministry for Education and Research (BMBF) is funding the project **SiGePAX** within a German-Sino cooperation program. The project is jointly coordinated by the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI, Germany) and the First Institute of Oceanography State Oceanic Administration (FIO, China). The project integrates the advantages of the Arctic and Subarctic marine sediment studies in AWI and FIO. For the first time, the collection of sediment cores can cover all key climatic regions in the Arctic and Northwest Pacific Ocean. The climate modelling work at AWI enables the 'Data-Model Syntheses', which are crucial for exploring the underlying mechanisms of observed changes in proxy records. The project started in July 2014 and will run until the end of June 2017.

AMAP: PAMARCMiP (Polar Airborne Measurements and Regional Climate Model Simulation Project): The operation with the AWI POLAR aircraft represents one key component of the atmospheric and sea ice study in the Arctic within the PAMARCMiP program. By PAMARCMiP large-scale measurements of sea ice thickness in key Arctic areas will be undertaken in the framework of an international cooperation between German, Canadian and US institutes. The plan for spring 2017, reaching from Longyearbyen (Svalbard) to Barrow (Alaska), is similar to the successful PAMARCMiP campaigns that have been conducted since 2009. Sea ice thickness is the key property for predicting the summer minimum sea ice extent. Sea ice thinning and retreat are expected to continue as a result of climate change with a major uncertainty introduced by decadal and long-term natural climate variability. Accurate ice thickness information is still sparse over the Arctic Ocean. Additionally, snow thickness measurements are planned with a radar system and atmospheric components will be measured simultaneously to the sea ice and snow thickness measurements, amongst which are aerosols, black carbon and different trace gases. These measurements have been undertaken since 2009 with the aim to fill knowledge gaps in the spatial and temporal distribution and variability. The research focus for the aircraft activity is the area from Svalbard to Alaska. The flight campaigns will contribute to our understanding of the role, the sources, and the transport pathways of atmospheric aerosol - especially black carbon - in the Arctic. The study will include the identification of local sources of observed aerosol layers and represents a crucial contribution to the working of **AMAP** (and AMAP EG SLCF in particular).

AMAP: More generally, **AWI** is intensifying its activities with regards to black carbon (BC) measurements. Presently measurements of spatial distribution and trend analyses are conducted. In addition to that, AWI will include measurements of BC in snow and will focus on the acquisition of data on local emissions stemming from shipping. This is also highly relevant for AMAP.

SDWG: Experts from **IASS** plan to play a more active role in the SDWG project "**Renewable Energy Microgrid Project**" and have expressed this intention towards the US delegation of SDWG. In addition, they plan to implement the GRASP-project in close collaboration with the SDWG members, especially ***with Permanent Participants***.

TFTIA: DLR Institute of Communications and Navigation is part of a consortium (including partners from AC Member States) bidding for an EU-funded Arctic research project (application in progress).

CAFF/AMBI: The Wadden Sea Flyway Initiative (WSFI), coordinated by the **Common Wadden Sea Secretariat** (CWSS) will continue supporting Guinea Bissau in the fields of capacity building, monitoring and scientific knowledge regarding Bijagós Archipelago, one of the most sensitive refuges for wintering Arctic and Wadden Sea birds along the East Atlantic Flyway. This is closely connected to the work of CAFF's Arctic Migratory Birds Initiative (AMBI).

If applicable, please describe in no more than 1 page your state or organization's contributions to other aspects of the Arctic Council and its goals not covered by the previous sections since the time of your most recent report, or in the previous two years.

Germany's previous report (2015) contained a detailed list of projects, some of which are still ongoing. Again, the following is not meant to be a complete list of intended future contributions.

I. Germany is actively supporting polar research and is cooperating with Arctic as well as non-Arctic countries in a variety of programs and projects in order to support the aims of the AC. In addition to bilateral scientific cooperation, Germany supports international cooperation in all fields of Arctic research through the AWI as the coordinating institution and cooperates with all Arctic Council Member States. The projects below are directly funded by the Federal Ministry of Education and Research (BMBF):

Laptev Sea System, joint Russian-German research project funded by BMBF; aims to assess how climate change will affect the highly sensitive Arctic environment and in how far the changes will be of consequence for Europe; main objectives are to investigate: (1) the changes in oceanic transfer of energy, matter and momentum in the Transpolar Drift system as a result of climate change; (2) the ecological consequences of climate change in the region of the Transpolar Drift system; (3) regional changes of the atmosphere/sea ice/ocean system in the Arctic. Research areas are the Laptev Sea as the most important area of sea-ice production and the Fram Strait as the only deep water and intermediate water connection between the Arctic Ocean and the Atlantic Ocean (and, therefore, the World Ocean). The project is running up to the end of 2016. It is jointly coordinated by GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany and the Arctic and Antarctic Research Institute (AARI), St. Petersburg, Russia.

CarboPerm, joint German-Russian research project, funded by BMBF; comprises multi-disciplinary investigations on the formation, turnover and release of organic carbon in Siberian permafrost. It aims to enhance our understanding of how permafrost-affected landscapes will respond to global warming and how this response will influence the local, regional and global trace gas balance. Permafrost scientists from Russia and Germany are working together at different key sites in the Siberian Arctic: the coast and islands at the Dmitry Laptev Strait, the Lena River Delta, and the Kolyma lowlands close to Cherskii. The project is coordinated by the University of Hamburg (scientific), AWI Potsdam, Germany (logistics), and AARI, St. Petersburg. CarboPerm is strengthening permafrost research in little studied areas, which are hardly accessible to international researchers. The obtained results will improve our understanding of future developments in sensitive and economically relevant Arctic permafrost regions. The project will be financed up to the end of September 2016.

PLOT – Paläolimnologischer Transekt, joint German-Russian project which is improving our knowledge and understanding of the climate and environmental history of the Eurasian Arctic. Within the project e.g. changes of the water cycle and its isotopic composition during the last approx. 140,000 years are modelled and simulations with a complex Earth System Model as well as with a spatially high-resolution atmosphere model are performed and compared to data from various paleoclimate archives. The project is coordinated by the University of Cologne in Germany and AARI, St. Petersburg, Russia. The project started in November 2015 and will run until end of October 2018.

POMOR, a Master Program for Marine and Polar Sciences, with English as teaching language, has been funded mainly by the BMBF, the German Academic Exchange Service (DAAD), the universities of St. Petersburg, Hamburg, Bremen, Kiel and Potsdam, as well as GEOMAR and AWI since 2007. The master's program was internationally accredited at Hamburg University in 2012. Students study in St. Petersburg and at a German partner university (Bremen, Hamburg, Kiel or Potsdam) and participate in international expeditions to the Arctic.

II. Raising Awareness on the Arctic: Besides research, Germany also supports events that promise to advance awareness of Arctic issues internationally. In December 2014, for example, Germany sponsored a conference in Oslo (Norway) devoted to "Developing Clean and Cost-Efficient Arctic Trade Routes". In addition, Germany presented its Arctic Policy in a Country Session at the Plenary Session of the Arctic Circle in Reykjavik in October 2015. A number of further Arctic events have taken place in Germany.