

A Polar Network



The spectacularly situated Stanisław Baranowski Polar Station, near the Werenskiöld Glacier on Spitsbergen, nicknamed "Baranowka"

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The initiative to form the scientific network "Multidisciplinary Research of Geobiosystems in the Polar Regions", later widely known as the Polar Network, was first proposed back in summer 2006

Operating since 1957, the PAS Polish Polar Station on Spitsbergen provides young scientists with opportunities to develop new research topics. Since 1986, the research ship "Oceania" has also participated in the scheme through annual research trips. The Network's main objective is to promote active participation in in-

ternational studies of polar regions; the results can be extrapolated to similar events in other parts of the world, including Poland. Another objective has been to form interdisciplinary research teams to improve its chances of participating in major projects planned as part of the 7th Framework Programme and the Norwegian Financial Mechanism. The formation of cross-institute research "schools" has proved to be equally important; one aspect of this has involved the Network inviting specialists to deliver lectures and presentations to Network members. The last objective has been to generate a pool of equipment to be utilized within the Network on a non-profit basis: because such use is not classified as a research "service" it enables Network members to partially avoid the related taxation.

Institutes in the Network

In 2006, an application was filed with the Polish Ministry of Science and Higher Education on behalf of four PAS institutes (the Institute of Geophysics

in Warsaw and the Institute of Oceanology in Sopot, which jointly manage the Polish Polar Station and research ship, plus the Centre for Space Research and the Institute of Geological Sciences, already conducting research in Svalbard), seeking funding for establishing a research network studying the effects of climate change on the natural abiotic environment in the Atlantic Arctic Sector, and the adaptation of living organisms to changes occurring in polar regions as a result of rising temperatures and human activity. Other research topics include comprehensive analysis of the flow of mass and energy between the atmosphere, landmass and sea in regions covered in ice, and geophysical and geological studies of deep structures of the lithosphere in regions with highly active geodynamic processes. Researchers in the Network were also slated to develop methodology for seismo-acoustic studies in sediment basins that open up when ice cover on the sea or land recedes, and construct new geodynamic models based on an integrated interpretation of geophysical, geological, and paleontological data. Another stated priority for the Network was to maintain and develop multifaceted international collaboration with teams from the International Arctic Science Committee, the Svalbard Science Forum, and the Scientific Committee on Antarctic Research, as well as implementing projects of the Fourth International Polar Year 2007-2009 and participating in the European Polar Consortium and the EUROPOLAR ERA-NET. Above all, however, the most important task was to involve expanding the research network to include other Polish scientific institutions in order to advance research targets and prepare new legal frameworks and regulations.

In response to this application, the Polar Network was indeed founded by the Polish Minister of Science and Higher Education by a decision dated 16 April 2007, providing financial support for 2007 and 2008 for the growing consortium of research units conducting studies in Arctic and Antarctic regions. Five research subjects have been approved: comprehensive monitoring of the natural environment at the European Flagship Biodiversity Point on Spitsbergen; multidisciplinary research into fossilized and contemporary marine and lake sediments in polar regions as a source of information on climate change and biotic evolution; polar basins (frozen and not frozen) as geological ecosystems in the changing climate; defining the effect of permanent and seasonal research stations in polar regions on the degradation and pollution of soil and water; and describing the results of ecological monitoring in Antarctic Specially Protected Areas (ASPA) and Antarctic Specially Managed Areas (ASMA) in the region of the Henryk Arctowski Polish Antarctic Station.

The Ministry's decision to stop financing all research networks founded between 2006-2008 did not result in the dissolution of the Polar Network. In fact, in 2009

it was expanded by further research units; it currently numbers 18 institutions (7 PAS institutes and 11 university faculties from across Poland).

The consortium of research units forming the Polar Network continues to pursue the previously posed scientific tasks using their own funds, albeit on a smaller scale. From its inception, the Network has been coordinated and represented by the PAS Institute of Geophysics. Network members have seven research infrastructures at their disposal that operate in polar regions on a permanent or temporary basis.

Working together

The main achievement of the five years of the Polar Network's operation has been the joint implementation of field studies, which has improved the integration of the Polish polar researcher community. One example is the formation of interdisciplinary groups of young researchers and PhD students during the Fourth International Polar Year. Young Polish scientists have come together to form one of the most active national groups as part of the Association of Polar Early-Career Scientists. The Polish branch has around fifty members, and its strong position provides a good support for the Committee of Polar Research at the PAS Presidium. For many researchers at the threshold of their careers, the Polar Network has created opportunities for work experience and field study on Spitsbergen by taking advantage of spaces available during polar expeditions. As a result, they have been able to obtain a high number of thesis-related grants, with 11 scientists obtaining PhDs in several related disciplines between 2010-2012. The effective flow of information within the network, helping researchers find work placements and providing financial support for attending international conferences, has made it easier for young researchers to participate in international teams and groups, which in turn has a direct impact on the number and quality of papers published in reputable journals.

The Polar Network also provides backing for applications and the development of the Polish Multidisciplinary Laboratory of Polar Research (PolarPOL) as part of the Polish Roadmap for Research Infrastructures. In February 2011, Science and Higher Education Minister Prof. Barbara Kudrycka approved PolarPOL as a national research centre forming a part of the international Svalbard Integrated Arctic Earth Observing Centre (SIOS) project from the European Strategy Forum on Research Infrastructures (ESFRI) for Earth sciences, demonstrating that Poland's research networks remain necessary, and that their co-financing is worthwhile.

This makes it all the more important to continue to finance and develop research networks as one of the important elements of the functioning of science and research in Poland. ■