



*At the frontline of climate change:
Key changes in the Polar Regions that call for European action*

SUMMARY REPORT

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In the Arctic and Antarctic, dramatic physical changes have become emblems of climate change. This policy briefing highlighted areas of polar change that have profound societal, environmental, economic and political impacts that need urgent attention from both European scientists and policy makers. These insights are retrieved from [five recently published White Papers](#), which have been developed by EU-PolarNet together with a team of multidisciplinary polar experts, stake- and right holders.



The panel included:

- **MEP Christel Schaldemose**
- **Antje Boetius**, Director of the Alfred Wegener Institute (AWI), Helmholtz Centre for Polar and Marine Research
- **Antonio Quesada**, Executive secretary of the Spanish Polar Committee
- **Terkel Petersen**, Senior Expert (Arctic), European External Action Service
- **Minninguaq Kleist**, Head of Greenland Representation to the EU
- **Marie-Hélène Tusseau-Vuillemin**, Scientific Director of the Environment, Geoscience and Astronomy Department at the French Ministry for Higher Education, Research and Innovation
- **Nils Arne Johnsen**, Director Regional Business Development, Troms County Council
- **Katarina Gårdfeldt**, Director of the Swedish Polar Research Secretariat
- **Jean-Louis Etienne**, IUCN Ambassador for Polar regions and the Oceans
- **Frederik Hoj Ruhne**, on behalf of MEP Jørn Dohrmann



Christel Schaldemose MEP welcomed participants by highlighting the importance to address climate change and underlined the importance of Polar Regions alongside her commitment on this topic. The Chair noted that “more knowledge and discussions about impacts of climate change are necessary in order to respond quickly to the challenges it represents”. While highlighting the need to benefit from new technologies to study physical phenomena, MEP Schaldemose noted that climate change has socio-economical impacts both in the region and at global level that request immediate action. Therefore the Chair called upon the Commission to increase financial support for research. As an increasing number of MEPs are interested in the topic and aware about its urgency, it should be a priority now to act through joint measures and projects.

In her introduction, **Antje Boetius, Helmholtz Centre for Polar and Marine Research**, reminded the audience that climate change accelerates and is already causing extreme events in many places around the world. “Polar Regions are ecosystems rich in life, while ice melting results in a dangerous loss of biodiversity there”. Moreover, the dispersion of soil in the water could alternate the sea ecosystems and the release of methane from the thawing permafrost presents a major contributor to global warming. Ms. Boetius highlighted the need for more scientific research, in order to be able to predict effects of higher temperature on Earth. Even if there is general consensus on climate change’s origin, there is still no agreement about its consequences. Also, social issues should have a prominent place in the debate. “Changes in the Polar region mean new opportunities for development”, but also the exploitation of resources presents risks both for nature and humans. To sum up, Ms. Boetius stressed that the international community is getting better in observing changes and predicting results in the Polar Regions, but still remains weak in taking action.

Antonio Quesada, Spanish Polar Committee, shared with the audience the key insights from the EU-PolarNet White Papers. The main task of EU-PolarNet is to develop an Integrated European Polar Research Programme, taking into account societal relevance and research needs. “A large group of stakeholders, from national policy makers to indigenous communities, from small or medium industries to research institutions, was involved in preparing the five White Papers with the aim to connect science to society”. They featured: (1) The coupled polar climate system: Global context, predictability and regional impacts, (2) Footprints on changing polar ecosystems, (3) Managing human impacts, resource use and conservation of the Polar Regions, (4) The road to the desired states of socio-ecological systems in the Polar Regions and (5) Advancing operational informatics for Polar Regions. Each White Paper identifies research needs and suggests a way forward. “Understanding the polar climate system in the global context is key for climate action. Our human activities, even in central Europe, have effects on ecosystems in the Polar Regions, but the consequences are largely unknown to us”. The need for clear and precise data on Polar ecosystems was raised, alongside the urgency to translate research into policy-making and providing more capacity-building activities in order to raise awareness and take action. Furthermore, the partners had identified a research need on how to link and implement the SDGs in the Polar Regions. As to informatics’ systems, Mr. Quesada stressed that they have



to be improved to support information and data exchange for the benefit of society, science and business.

Terkel Petersen, European External Action Service, gave a brief introduction to the EU Arctic Policy, which is co-led by DG MARE. “The Arctic is home to people, and the need to engage with them and acknowledge their interests and unique insights is a key aim of the EU’s policy”. Mr. Petersen highlighted that changes in Arctic have a tremendous affect on the Earth and our ecosystems, however, the climate change negotiations are not defined by the Arctic. “This requires data, and the Commission’s DG RTD, JRC and EEAS are very supportive of this research. Also in the proposal of the Commission on the next budget (MFF), science, research and innovation are key pillars”. Mr. Petersen moved on stressing that science should not only be seen as data collection, but also as a contribution to innovation and connectivity across the Arctic. “We have to recognize that data is not enough to change policy, as people want to use resources and is not easy to change their aspiration. We have to consider China, India and other new actors on the global scene because if we think only from an EU prospective we will fail”. Mr. Petersen concluded with a remark for a further reflection: “mitigating the effects of climate change requires sometimes uncomfortable changes of behavior”. More scientific insights will thus not necessarily and directly translate into political action.

Mininguag Kleist, Head of Greenland Representation to the EU, gave an insight into the effects of climate change on the Greenlandic society and environment. From his point of view, it is of paramount importance to consider the different prospective that inhabitants of the region have compared with the European one. In East Greenland, increasing temperature is causing changes in soil humidity meanwhile in the north it has an impact on fish populations and consequences for local economy. In the south, where farming takes place, warming temperatures are as well associated with a potential increase in food production. However, on the contrary, rising temperatures have negative effects on the agricultural sector, as the changes are extreme and unpredictable. Moreover, the sector is also challenged by invasive species. Summing up the above, Mr. Kleist welcomed more research, but advised all scientists to collaborate more with the local population, learn from their expertise, and be more sensitive in their approaches.

Marie-Hélène Tusseau-Vuillemin, French Ministry for Higher Education, Research and Innovation brought the perspective of a non-Arctic country to the panel. France has a specific logistic agency for Research in Polar Regions (IPEV), while one of the top priorities of its National Research Strategy is the understanding of the Earth system and changes in global ecosystem, in order to support decision-makers to take action. With reference to investments for Polar research, they are covered within this programme. As mentioned during Ms. Tusseau-Vuillemin’s intervention, France also has a national “climate plan”, and a “biodiversity plan”, where research (including polar research) is of significant importance. A major contribution of research to the SDGs could be to imagine ways to reach them jointly, all around the world, including Arctic. Ms. Tusseau-Vuillemin noted however that raising



awareness for biodiversity is a major challenge, as changes in ecosystems are not always visible at first sight. All in all, the need to encourage technological innovation was underlined, in order to jointly achieve the sustainable use of the Arctic natural resources.

The industry representative on the panel, **Nils Arne Johnsen, Troms County Council**, drew attention to the link between economic growth and the opportunities for cooperation between business and the research community in the Polar Regions. Today, many Arctic regions are not attractive for settlement, but urbanization should be seen as an opportunity for the sustainable development of the area, according to Mr. Johnsen. Also, business opportunities should not be considered negatively, but as a way to address change and improve well-being. Furthermore, the contributions of local knowledge for development have to be taken more seriously. Mr. Johnsen recommended that “any environmental or economic policy should only be developed with a full involvement of local inhabitants, taking their livelihoods and possible impacts on them into account”. As a result, the fact that the Arctic needs more scientists based in and originated from the region itself, was stressed.

Jean-Louis Etienne, IUCN Ambassador for Polar Regions and the Oceans, presented the PolarPod Expedition, an exploration of the Southern Ocean which surrounds the Antarctic Continent, where twelve countries are involved. Mr. Etienne underlined how we still lack on information about the role of Ocean on our climate and pointed out that the Antarctic is the world’s largest carbon sinks and a vital component of the Earth. The main objective of PolarPod Expedition will be to collect measures about air-sea exchange of CO₂, physical characteristics of water, contaminants’ presence and quantity, in order to improve the knowledge around the Region and the Ocean. Starting in October 2021, the PolarPod expedition will remain for two years in the Antarctic Ocean.

Katarina Gårdfeldt, Director of the Swedish Polar Research Secretariat pointed out the importance for Europe to look south, focusing on Antarctic, while considering the main issue of global sea level rise and the contribution of melting glaciers. Many countries will be affected around the globe and the changes come with huge costs and implications for infrastructure and societies. As to Antarctic, she noted the lack of data (especially for winter time) and knowledge gaps on climate change, glaciers’ melting, but also on Earth’s history, water, exchange of CO₂ and other gases between different natural sinks. From Ms. Gårdfeldt’s point of view, “this as an excellent opportunity for European countries to collaborate more on Polar research”, while a European Research Programme on the global impact of Antarctic changes was suggested. Also, the SDGs could help addressing these, as she sees them as a great gift, providing us with a universal language.

During the discussion with the audience, **Andrea Tilche (DG RTD)** stated that next year's Horizon2020 programme will address the polar issues related to sea level’s rise, sustainable development and biodiversity. **Marie-Anne Coninx**, Ambassador for Arctic Affairs of the European Union mentioned that “the polar bear is a prominent symbol of climate change, but we must not forget that four million people live in the Arctic and they are affected by the effects of a changing environment”, stressing the meaning of a balanced approach. **Hannele**



Savela, from Oulu University emphasized the importance of community-based observations in the Arctic, which include local knowledge, which is key for climate action. Moreover, the need for better finance allocation was raised, especially for research coordination, while participants were informed that Copernicus Programme open data will be available as of 2019. Finally, further discussions reiterated the importance of European and global collaboration and the role of research as a cooperation tool.

In his closing remarks, **Frederik Hoj Ruhne** addressed the public on behalf of **MEP Jørn Dohrmann**, who is especially interested in this topic due to his role as chair of the EP DEFA Delegation. Mr. Ruhne reiterated the need to discuss climate change strategies for Polar Regions. “Despite the complexity of the issue, there is an enormous expertise to benefit from and share”. Last but not least, the need for more research and an improving global dialogue was highlighted, while mentioning that this meeting was an important step towards this process.

[Documents of the policy-briefings can be found here.](#)

This event was organized in cooperation with



EU-PolarNet is the world’s largest consortium of expertise and infrastructure for polar research. Seventeen countries are represented by 22 of Europe’s internationally-respected multi-disciplinary research institutions. From 2015-2020, EU-PolarNet will develop and deliver a strategic framework and mechanisms to prioritise science, advise the European Commission on polar issues, optimise the use of polar infrastructure, and broker new partnerships that will lead to the co-design of polar research projects that deliver tangible benefits for society. By adopting a higher degree of coordination of polar research and operations than has existed previously the consortium engages in closer cooperation with all relevant actors on an international level.