

Declaration released by scientists participating to the Damocles international symposium: The Arctic Climate system, its present status, future evolution and potential impacts on November 10-12, 2009 in Brussels, Belgium.

The observed decrease of Arctic summer sea-ice extent over the last decades, results from a combination of strong natural variability of the coupled atmosphere-ice-ocean system and a growing radiative forcing due to rising concentrations of greenhouse gases. We are deeply concerned that the most recent CO₂ emission estimates, are even higher than the most extreme IPCC-AR4 release scenario. **Unless emissions are curbed significantly, we are not expecting a stabilisation of the Arctic's climate system.** On top of the emission induced changes in the Arctic, we are observing decade-to-decade swings of the Arctic system which makes a reliable prediction very challenging and very much dependent on up-to-date observations. It is essential that these observations should be continued.

Long-term, systematic real time monitoring stimulating synthesis via data assimilation and modelling, are the keys to provide policy makers and stakeholders with the high-quality assessments they need to make pertinent decisions.

The dwindling sea-ice will have serious consequences for indigenous livelihoods and cultures, for the exploitation of non-renewable resources such as oil and gas, for coastal and offshore fisheries activities, tourism and shipping. The abundance and distribution of important fish stocks will likely change, and we will have access to new and unexplored ocean areas for oil and gas exploration. All of which raise major environmental, economic, geo-political and governance questions. **We need a high level of preparedness in terms of science and governance to cope with the expected increase of human activities in the Arctic.**

The 4th International Polar Year, the EU Integrated Project Damocles and an extensive and intensive international cooperation provided a unique opportunity for scientists from many countries interested in Arctic research to cooperate actively and successfully for a better knowledge of the Arctic regions. This effort should be maintained specially now when environmental changes are altering the geo-strategic dynamics of the Arctic. **Potential consequences for international stability, call for the development of a policy protecting and preserving the Arctic, promoting sustainable use of resources and contributing to enhanced Arctic multilateral governance.**