

Action Plan on Climate Change for the Barents Cooperation

Prepared by Carbon Limits, commissioned by the Norwegian Ministry of the Environment, based on input from the BEAC working groups.

Adopted at the 11th meeting of the environmental ministers under the Barents Euro-Arctic Council, Inari, Finland, 5. December 2013.

Contents

- 1: Introduction and background 3
- 2. Some recent developments in Arctic climate change 5
- 3: Recommended activities..... 6
 - 3.1 Overarching activity..... 6
 - 3.2: Mitigation 7
 - 3.3: Adaptation 11
 - 3.4: Research, observations, monitoring and modelling..... 13
 - 3.5: Outreach 15
- 4. The Action Plan on Climate Change for the Barents Cooperation..... 18

1: Introduction and background

Climate change has been on the agenda of the Barents cooperation for a number of years. In response to a request from the Ninth Session of the Barents Euro-Arctic Council (BEAC) in 2003, the Committee of Senior Officials (CSO) identified viable areas for climate change cooperation in the Barents Region in 2005.¹ In 2007 the Conference of Environment Ministers of BEAC called for greater insight into the changed living conditions of the people of the region and their potential to adapt to climate change. In 2009, a Conference on Climate Change in the Barents Region, held in Vadsø, Norway, focused on the need for further development of the understanding of adaptation requirements, strategies, and policies.² In the 13th Session of the BEAC, held in Kiruna, Sweden in 2011, the foreign ministers of Finland, Norway, Russia, and Sweden welcomed “*the development of an Action Plan on Climate Change in the Barents Region that will contain concrete recommendations to the Member States and call upon all sectors to engage in these efforts*”.

In the Barents Summit Declaration, adopted in 2013 on the occasion of the 20th anniversary of the Barents cooperation in Kirkenes, Norway, the prime ministers and other high-level representatives stated that the Barents Region is not a major source of greenhouse gas emissions, but that more can be done to reduce local emissions, for instance through greater attention to black carbon, energy efficiency and enhanced use of renewable energy sources. Further, they stated that adaptation to the impacts of climate change in the Barents Region is a major challenge which requires cooperation at national, regional and local levels. They encouraged systematic exchange of experience and development of adaptation strategies.

Previous discussions and recommendations on climate change within the Barents cooperation have extended across a broad-based, ambitious spectrum of actions for follow-up. However, it must be acknowledged that an all-encompassing plan of action on climate change in the Barents Region would be beyond the resources and capacity of the Barents cooperation. The present plan therefore includes a limited number of achievable priority activities to be carried out by the working groups within the BEAC and the Regional Council. The emphasis is on areas in which the Barents cooperation can provide added value to local

¹ <http://www.barentsinfo.fi/beac/docs/WGE+Arcticclimatechange-policy+BarentsRegion.pdf>

² http://www.barentsinfo.fi/beac/docs/2009_1-2SEP_Vadso_Final_Report_Barents_Conference_English.pdf

and regional planning, action and projects. The report has been commissioned by the Norwegian Ministry of the Environment and drawn up by external consultant Harald Dovland from Carbon Limits. The chairs of the CSO and the Working Group on Environment have been actively involved in the process, which is primarily based on submissions from the working groups under the BEAC.

The effort to develop the Action Plan on Climate Change for the Barents Cooperation was launched with a workshop held 20–21 March 2012 at Losby Gods outside Oslo. Participants from most of the working groups under the BEAC participated, offering initial input to the Action Plan on Climate Change for the Barents Cooperation. The participants were provided with the policy recommendations from the BEAC CSO in 2005 and the recommendations from the Vadsø-conference in 2009, and were also informed about recent scientific developments that have emerged with regard to climate change in the Arctic.

A total of nine working groups have submitted written input to the Action Plan. The regional level of the Barents cooperation has been regularly consulted during the process, and consultations have also been carried out with a number of NGOs as well. The selection of activities also takes into account recent scientific developments relating to Arctic climate change.

Because climate change in the Barents Region will affect all sectors of society, it is important that all working groups and bodies within the BEAC and the Barents Regional Council are actively involved in the implementation of the Action Plan. The CSO has therefore decided to recruit an expert adviser to the International Barents Secretariat (IBS) in Kirkenes. The adviser's tasks will include coordinating climate change activities within the Barents cooperation, for instance by increasing and ensuring systematic contact with relevant regional authorities in all four Barents countries.

Chapter 2 of this reports contains a short summary of recent scientific developments in the field of Arctic climate change, while Chapter 3 provides a description of and the background for the recommended activities in the Action Plan. The Action Plan on Climate Change for the Barents Cooperation itself is to be found in Chapter 4. Progress and results from the proposed activities are to be annually reported to the Committee of Senior Officials of the Barents Euro-Arctic Council and the Barents Regional Committee.

2. Some recent developments in climate change relevant to the Arctic

The CSO document from 2005 builds on the findings of the Arctic Climate Impact Assessment (ACIA) report. Important developments in climate change science after the release of the ACIA report are reflected in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) published in 2007, and the Fifth Assessment Report to be published in 2013/14 is expected to underline the crucial role that the Arctic plays in global climate change. As a follow-up to the ACIA report, Norway conducted the Norwegian Arctic Climate Impact Assessment (NorACIA) study to update knowledge on climate change for the Norwegian portion of the Arctic. Furthermore, the Arctic Monitoring and Assessment Programme (AMAP) has assessed the latest findings about the changing state of the Arctic Cryosphere and presented a report on “Snow, Water, Ice and Permafrost in the Arctic” (SWIPA). The second Arctic biodiversity assessment developed under the Arctic Council underlines that climate change is the most important threat, and exacerbates other threats, to Arctic biodiversity.

According to the recent Arctic Ocean Acidification Assessment developed under the Arctic Council, Arctic marine waters are experiencing widespread and rapid ocean acidification, and the Arctic Ocean is especially vulnerable in this respect. Ocean acidification is an effect of increasing levels of CO₂ in the atmosphere that may lead to fundamental changes in the Arctic marine environment.

The main findings of ACIA report are still valid. That report concluded that the Arctic climate was warming rapidly and much larger changes could be anticipated; Arctic vegetation zones were expected to shift, entailing wide-ranging impacts; many coastal communities and facilities would face increasing exposure to storms; reduced sea ice was very likely to increase marine transport and access to resources; and thawing ground would disrupt transportation and create problems for buildings and other infrastructure. In some cases, developments appear to be taking place even more rapidly than foreseen in the ACIA report. This applies for instance to the extent of sea ice. In recent years, areas with ice-free water have been very extensive and larger than predicted by climate change models.

Perhaps the most important development in relation to climate change in the Arctic during the last few years has been the information emerging on the significance of black carbon and

other short-lived climate forcers. Reducing emissions of black carbon will make it possible to reduce the increased warming predicted for the coming two-three decades by about two-thirds (UNEP assessment). To address emissions of short-lived climate pollutants the *Climate and Clean Air Coalition to reduce Short-lived Climate Pollutants* was launched in February 2012. Presently, 18 states and a number of non-state partners (international organizations and NGOs) have joined the Coalition.

3: Recommended activities

The Action Plan on Climate Change incorporates a selection of the activities proposed by the working groups that were considered to be of the greatest relevance and, at the same time, most achievable.

Suggested measures have been grouped into four policy areas:

- Mitigation
- Adaptation
- Research, observations, monitoring and modelling
- Outreach

It should be noted that some of the recommended activities in the Action Plan are relevant for more than one of these policy areas. However, they are listed in the policy area in which they are considered to be of greatest relevance. One activity, *Development of regional strategies* is so comprehensive in nature that it has been defined as an overarching activity.

3.1 Overarching activity

Development of regional strategies

Many municipalities are drawing up climate change strategies, targeting mitigation and adaptation in particular. However, it is often necessary to view such strategies in a context larger than a single municipality. Regional strategies may therefore be appropriate and may contribute positively to national goals. There are differences within the Barents Region regarding the priority being given to the development of regional strategies. As a positive example, regional strategies have been developed for all three regions of northern Finland:

Oulu, Lapland and Kainuu. These strategies have been developed in broad cooperation between different administrative levels as well as various stakeholders.

Regional strategies should be developed for all parts of the Barents Region, and this may be done by expanding cooperation to enable those who have not come as far in their strategy development to draw on the experience of those whose strategies are already established. The International Barents Secretariat could provide assistance in facilitating the exchange of experience. Such activity could be initiated by an information seminar to encourage discussion of climate change issues, with participation of regional administrations, business partners and other stakeholders in the region. Regional planning should be an important tool in this activity.

The Working Group on Environment should follow up on its proposals regarding the development of regional strategies: Disseminating and putting into action regional and local strategies; exchange of best practices and enhanced cooperation in the field of impacts of climate change and regional planning; and mainstreaming climate issues in regional planning in order to decrease the vulnerability of the communities to the impacts of the climate change.

3.2 Mitigation

Black carbon and other short-lived climate pollutants

Controlling emissions of greenhouse gases, black carbon and other short-lived climate pollutants should be a high priority for all countries. Measures to reduce emissions of black carbon and other short-lived climate pollutants may contribute effectively to reducing the rate of climate change in the Arctic, also in the short-term. Such measures are a means of supporting the call for action of the Arctic Council, which in Nuuk 2011 encouraged “*Arctic states to implement, as appropriate in their national circumstances, relevant recommendations for reducing emissions of black carbon.*” In the Kiruna Declaration, May 2013, the Arctic Council “*recognized that Arctic states substantially contribute to global greenhouse gas emissions,*” and “*decided to establish a task force to develop arrangements on actions to achieve enhanced black carbon and methane reductions in the Arctic.*”

Though some uncertainty concerning the warming effect of black carbon remains, the Arctic Council Task Force on Short-lived Climate Forcers reconfirmed in 2013 that both black carbon and methane emissions are contributing to Arctic climate change, and that immediate reductions in such emissions can slow Arctic climate warming over the next few decades. Because of the additional warming effect from black carbon deposition on ice and snow, the task force further stated that measures taken to reduce such emissions in or near the Arctic can have the greatest impact per unit of emission. Bearing in mind the additional health benefits from such emission reductions, measures to further reduce black carbon emissions in the region should be encouraged.

The following elements are based on the submission from the BEAC Working Group on Environment (WGE).

Reduction analysis: As a first step, it is recommended that each country develops an inventory and analysis of possible reductions of black carbon and other short-lived climate pollutants within its territories of the Barents Region. This work should be coordinated with the ongoing work of the Arctic Council and Nordic Council of Ministers in this field. The results of this analysis should be incorporated into an overall report that can be used for follow-up and as a blue-print for other geographical areas.

Hot-spots: A total of 42 sites have been classified as “hot-spots” according to environmental criteria. Three of these were eliminated from the list of hot-spots in the Barents Region in 2011. The long-term goal is the elimination of sites from the list. The short-term objective of the efforts of the Working Group on Environment is to launch environmental measures in all hot-spots by 2013. This process will facilitate reduction of emissions of greenhouse gases, including black carbon and other short-lived climate pollutants, through improved energy efficiency, use of alternative energy sources, and cleaner production.

Cleaner production methods: The Working Group on Environment’s activities in relation to cleaner production are focused on promoting concrete measures as well as best environmental practices and best available techniques at the enterprises. Cleaner production measures will increase energy efficiency, reduce emissions and waste, and help to raise awareness. All cleaner production projects are to be screened and monitored for reductions of greenhouse gases and short-lived climate pollutants.

The Nordic Environment Financing Company (NEFCO), established by the Nordic countries as a vehicle to promote green development and foster good environmental practices in areas of interest to the Nordic region, has several relevant financial instruments which should be actively used in the promotion of cleaner production and hot-spot clean-up.

Additional activities related to black carbon are found in Section 3.4 on research and monitoring.

Forests and other sinks for greenhouse gases

Forest growth: Changes in global climate are already stressing forests through higher temperatures, altered precipitation patterns and extreme weather events. Effects on forests are likely to include changes in forest health and productivity as well as changes in the geographic range of both forests and tree species. Northern boreal forests trap and store carbon dioxide in the wood they produce, in forest soils and in wetland ecosystems; thus they have the potential to mitigate climate change. At the same time these forests have the potential to become a carbon source as a result of changes in permafrost and natural disturbance patterns, such as forest wild fires, pest and diseases. Efforts include sharing knowledge about these natural disturbance patterns. In connection with forest management and protection, carbon storage, accumulation and releases from soils and wetland ecosystems should be taken into account.

The Barents Forest Sector Task Force (BFSTF) proposes the establishment of a Barents Region-based research programme on the effects of climate change on forest ecosystems, including development of common methodology and indicators. The task force additionally recommends maintaining and strengthening efforts related to increased sustainable production and supply of forest products for energy and wood constructions in the Barents Region that can displace fossil emissions and contribute to long-term stabilization of the greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The task force also highlights the need to further expand efforts in forestry operations to avoid damage to old-growth forests not suitable for logging, peatlands and other wetlands to enhance reservoirs for greenhouse gases, as well as habitats for biota.

A seminar for sharing knowledge and discussing possible common methods and a system for regular reporting on forest health could be arranged. Consideration should be given to linking this activity to ongoing initiatives in the biodiversity group under the Arctic Council (CAFF), especially the terrestrial programme within the Circumpolar Biodiversity Monitoring program, as well as to national activities.

Conservation of old-growth forests, peatlands (including mires) and other wetlands comprises one of the key instruments for meeting the targets of the Convention on Biological Diversity, and also incorporates certain aspects of mitigation and adaptation. The Barents Region belongs to the boreal forest belt, which is the largest remaining intact forest ecosystem on earth. Development of protected areas there will contribute to saving endangered species and enhance the potential of species to adapt to climate change, in addition to promoting conservation of carbon sinks. Two current projects under the Working Group on Environment that primarily target biodiversity conservation goals also integrate some mitigation and adaptation factors. These are:

- *Promoting a representative and effectively managed Barents Protected Area Network (BPAN)*: The overarching aim is to promote and support a representative protected area network for conservation of biodiversity and boreal-arctic nature, especially forests and wetlands.

- *Developing the Green Belt of Fennoscandia*: The concept of Green Belt of Fennoscandia encompasses a chain of protected areas along the Finnish, Russian and Norwegian borders in a south-north line from the Gulf of Finland to the Barents Sea. The Green Belt of Fennoscandia offers a unique opportunity for studying and monitoring climate change.

Energy efficiency and renewable energy

The Joint Working Group on Energy (JEWG) has defined energy efficiency and renewable energy policies as a “win-win-win” scenario for climate change mitigation, as these will improve local air quality, increase security of supply and enhance competitiveness. The JEWG is carrying out various actions and events in relation to these fields, often in close cooperation with the EU Commission, the Nordic Council of Ministers and NEFCO, among

others. The JEWG has been an important platform for information exchange in the Barents Region.

The JEWG follows the development in the projects on hot-spots (undertaken by the WGE and NEFCO). This working group also envisages stronger cooperation with the Working Group on Environment, and is seeking better systems for networking and information exchange on energy efficiency and renewable energy.

A workshop to facilitate cross-border cooperation on energy efficiency and renewable energy will be organized in 2013. As target groups, the JEWG specifies public sector, municipalities, regional authorities, energy efficiency centres and agencies. The JEWG foresees continued cooperation with NEFCO and the Nordic Council of Ministers.

3.3 Adaptation

Water resources management

Climate change will have an impact on water resources and their ecosystem services in many ways. Adaptation issues are related e.g. to water quality, water level regulation, fisheries and recreation. The Working Group on Environment has the following project related to adaptation and water resources management:

- *Trilateral cooperation on Environmental Challenges in the Joint Border Area*: A European Neighbourhood and Partnership Instrument (ENPI) project studying the harmful effects of climate change on water level, flow regulation and contamination in the Finnish, Norwegian and Russian border region.

In its submission, the Joint Working Group on Health and Related Social Issues (JWGHS) has underlined the importance of water for human health and the need for adaptation to counteract flooding in river systems, ensure focus on drinking water safety, and to continue and strengthen cooperation between emergency and rescue services and health and social care systems. Health issues should be an integral part of all climate change adaptation measures (for instance community planning, risk and vulnerability analyses). Early warning surveillance and preparedness systems for extreme weather events and disease outbreaks should be developed and/or strengthened.

A key message from the JWGHS is to strengthen cooperation on water management related to flood prediction, flood risk and clean drinking water. The JWGHS is prepared to be consulted on proposals in the Action Plan in areas where a link to health-related issues is relevant.

Transport

The Steering Committee of the Barents Euro-Arctic Transport Area (BEATA) is preparing a joint transport plan for the Barents Region with a planning horizon of 30 years. This plan needs to take into account climate change with, for instance, the risk of more extreme weather such as storms, avalanches and flooding. The plan will also formulate general strategies for developing an effective and robust transport system. A proposal was delivered by an expert group to the meeting of the ministers of transport on 24 September 2013.

Nomadic Reindeer Husbandry

The Working Group of Indigenous Peoples proposes a project to provide a quantitative assessment of new climate trends in the Barents Region, and to investigate the effect of climate change in the Barents Region on nomadic reindeer herders' society and environment in order to identify possible risks and vulnerabilities in individual components of the social-natural environment. There are already many indications that projected changes in climate will influence reindeer and reindeer herding, as changing snow conditions will affect the availability of forage, especially in winter. Indigenous traditional knowledge, culture, and language provide a central foundation for adaptation and building resilience to the rapid changes in the Arctic. The intention is to expand upon the unique and successful collaboration established during the International Polar Year between Russian, Finish, Swedish and Norwegian partners, and the project will cultivate broad-based cooperation among the herders' societies from Yamal in the east to Norway in the west.

Thawing permafrost – impacts on buildings, roads and other infrastructure

Practically no input was received on thawing permafrost adaptation. This issue may be of some relevance to the development of transport plans with a time horizon of 30 years to be undertaken by the Transport Group (BEATA). The proposal from the WGE (under outreach)

to organize an international conference on permafrost issues can be utilized to develop proposals in this area.

3.4 Research, observations, monitoring and modelling

The Joint Working Group on Education and Research (JWGER) has pointed out that climate change is by definition long-term, and there is thus value in long time series in observations. However, it is difficult to obtain funding for continued monitoring in competition with new projects. The JWGER proposes to increase cooperation to help to secure long-term funding for the most important time series. This could be achieved by collecting information about all relevant series, drawing up a prioritized list of those that should be provided with long-term funding, acquiring funding for long periods (at least 10 years) and making the data series available to all researchers in a suitable format to ensure maximum utilization of data. An effort should also be made to develop a common mechanism for collection, storage, processing and exchange of information. In order to ensure a broad perspective when prioritizing the data series, a BEAC workshop could be held to examine and discuss the material gathered. Consideration should be given to how this activity could be used in conjunction with the Sustaining Arctic Observing Network and the Arctic Monitoring Assessment Programme under the Arctic Council. The need to incorporate research on biodiversity and the effects of climate change on biodiversity into Arctic research is also emphasized.

Education

The Joint Working Group on Education and Research propose the development of a concept for providing the relevant PhD-level courses that are currently taught via High North Academy³ throughout the entire Barents Region, using a combination of summer courses and distance learning. It is feasible to teach several of these courses as distance learning, in some cases combined with summer school or weekly course meetings.

The JWGER also proposes the organization of international courses within relevant subjects on board the Floating University, with participation of students and faculty from all Barents

³ The High North Academy is an umbrella organization that coordinates PhD courses for research schools within fields connected to the High North. The courses are in general taught in English. They all give ECTS (European Credit Transfer and Accumulation System) credits.

Region countries. The Floating University is a project funded by the Russian Geographical Society and operated by the Northern (Arctic) Federal University (Narfu). The course takes place on a research vessel sailing in Arctic waters.

Exchange of young scientists and students should be an important part of this measure.

Monitor and investigate black carbon (BC) and other short-lived climate pollutants

The Joint Working Group on Education and Research has submitted the following three research projects aimed at investigating the origins and amounts of black carbon and other short-lived climate pollutants:

- Investigate the main sources of BC in the Barents Region/Arctic with the use of modelling software (FLEXPART); especially the contribution of boreal forest fires versus anthropogenic emissions.
- Quantify anthropogenic emissions within the Barents Region/Arctic and areas close to the Arctic with the upgrading of monitoring programmes in the Arctic; i.e. Zeppelin station in Svalbard and other stations.
- Measure and quantify BC emission sources with the use of mobile aerosol lidars and/or relevant technology: Point sources in the Barents Region such as the gas/oil industry, large point sources near the Norwegian-Russian border; and emissions from ship traffic.

A process for standardising methods of measuring black carbon is underway within the Convention on Long-range Transboundary Air Pollution and the European Monitoring and Evaluation Programme (EMEP). Cooperation with the EMEP in this activity is therefore recommended.

Permafrost

In the subarctic European Northeast, tundra ecosystems functioning along the southern boundary of permafrost are the most vulnerable and sensitive to global warming. Current climate change causes degradation of permafrost in the region, which increases climate-driven changes of landscape components and soils first. A project on the evaluation of the current dynamics of the temperature regime in subarctic permafrost-affected soils in the far Northeast of Europe has been proposed by the JWGER.

The aim of the project is to assess the recent dynamics of the temperature regime in tundra permafrost-affected soils. Temperature studies of permafrost-affected soils make it possible to assess environmental sustainability against a backdrop of ongoing climate change. The existing research base is long-term temperature monitoring of permafrost-affected soils near the town of Vorkuta, which started in 1996. Intensive long-term temperature studies of cold soils and permafrost have been conducted since 2007 at 12 sites.

On the basis of the data collected, the long-term temperature dynamics will be characterized in different types of organic and mineral tundra soils and underlying permafrost. In permafrost-affected grounds the temperature response to changing climatic parameters over the last decade will be assessed.

3.5 Outreach

Barents Industrial Partnership Meeting

The Norwegian chairmanship of the Working Group on Economic Cooperation was responsible for the Barents Industrial Partnership Meeting that was held in May 2013. The main objective of the meeting was to enhance the exchange of experience and good practice on climate change among ministries, the private sector and academia; to address opportunities and challenges; and to identify potential areas for increased cooperation between stakeholders in the Barents Region in particular. Questions regarding climate change and the development of business cooperation in the Barents Region were addressed in this forum.⁴

The Joint Working Group on Education and Research (JWGER) has proposed two outreach activities which may be seen as primarily directed towards research communities or a specially interested public:

FrostBytes

FrostBytes – “Soundbytes of Cool Research” – is a concept developed by the Association of Polar Early Career Scientists (APECS) in 2012 to share interesting and valuable information about the polar regions. These 30 - 60 second audio or mostly video recordings are designed

⁴ This proposal was carried through before the Action Plan on Climate Change was ready for submission to the BEAC Committee of Senior Officials. It is presented as a part of the Action Plan, as the measure reflects the input from the Working Group on Economic Cooperation at the time when their written was requested.

to help researchers easily convey their latest findings to a broad audience as well as to specific target groups, which makes this a great outreach tool.

The concept of FrostBytes can be used to:

- highlight research findings of students across the entire Barents Region in national languages as well as in English, thus facilitating potential interdisciplinary and international cooperation in the region;
- promote universities, institutes and specific departments in order to attract new students, and profile particular courses and programmes within universities;
- raise awareness of the current challenges facing the Barents Region.

A series of online webinars

The primary objective of this proposed project is to introduce all partner institutions to a broader audience and to other potential collaborators within the Barents Region. A series of online webinars could be planned and organized through the GoToWebinars system, which has been proven to be reliable and effective software. First webinars will include a general overview of the Barents Euro-Arctic Region as well as the JWGER, and present the status of cooperation in the region as well as possible new synergies with potential new collaborators. All subsequent webinars will focus on all institutes and universities that are part of the JWGER. All webinar sessions will be recorded and made available on YouTube and Vimeo, and could be embedded into websites of participating universities.

Overall, the proposed webinar series will provide an online forum that will encourage and facilitate exchange and collaboration between early career researchers, increasing the research capacity of early career and senior researchers in the Barents Region through closer cooperation, coordination, and communication about climate change.

Permafrost

The Working Group on Environment has proposed that the BEAC could organize an international conference on thawing permafrost and melting snow cover to assess issues such as: recent knowledge of the impact of climate change on thawing permafrost and melting snow cover; observations of thawing permafrost and melting snow cover; the impacts of this on water cycle; the threats to the existing infrastructure and the challenges

to new infrastructure development plans. The results of the conference should be utilized by the working groups under the BEAC to develop proposals on permafrost adaptation.

Dissemination of information

Knowledge and information are essential for activities related to climate change. Thus, high priority should be given to systematic efforts to collect knowledge and distribute updated information about climate change and recommended measures in popular form to the public, to working groups under the BEAC, and to decision-makers. The International Barents Secretariat should be used systematically in the production and distribution of such material.

Cooperation with other organizations etc.

It is of great importance to enhance cooperation and interaction with other organizations to increase awareness of the specific northern concerns related to climate change. Relevant examples are the Intergovernmental Panel on Climate Change, which has a chapter on polar regions in its Fifth Assessment Report; the Arctic Council, which is developing a report on Adaptation Actions for a Changing Arctic as well as the Arctic Resilience Report; the Council of the Baltic Sea States; the Nordic Council of Ministers, which has focused on the people living in the region in its Arctic Cooperation programme 2012–2014; the EU and Northern Dimension and its partnerships, as well as international financial institutions such as Nordic Environmental Finance Corporation (NEFCO), Nordic Investment bank (NIB) and the European Bank for Reconstruction and Development (EBRD).

The BEAC should consider seeking wider cooperation to influence further efforts in these and other organizations. In addition to the crucial role of local and regional authorities, it is also very important to cooperate closely with key actors within the business community, civil society including NGOs, education and research institutions, the media, etc., in developing awareness of, and designing actions for dealing with, the challenges related to climate change.

4. The Action Plan on Climate Change for the Barents Cooperation

Overarching Activity

Title	Objective/Activity	Responsible	Timeframe
<i>Development of regional climate change strategies</i>	<p>Development of regional strategies for all parts of the Barents region.</p> <p>Activity to be launched by an information seminar with participation from regional administrations, business partners and other stakeholders.</p>	<p>The Working Group on Environment (WGE), the Regional Working Group on Environment (RWGE), Barents Regional Council, other relevant Working Groups, the International Barents Secretariat.</p>	<p>Launching seminar in 2014, development before the end of 2015 of strategies in those regions where this has not yet been carried out.</p>

Mitigation

Title	Objectives/Activities	Responsible	Timeframe
<p>Black carbon and other short-lived climate pollutants</p>	<p>It is recommended that each country develops an inventory of emissions and an analysis of possible reductions of short-lived climate pollutants within its territories in the Barents Region.</p> <p>Continued and strengthened efforts to reduce emissions of greenhouse gases and short-lived climate pollutants in the WGE's hot-spots and cleaner production activities.</p>	<p>Working Group on Environment (WGE), Joint Energy Working Group (JWGE), Nordic Environment Finance Cooperation (NEFCO). These activities should be coordinated with the ongoing efforts of the Arctic Council and Nordic Council of Ministers in this field.</p>	<p>Analysis of reduction possibilities: Before the end of 2014</p> <p>Ongoing</p>
<p>Forestry Activities</p>	<p>To establish a Barents Region-based research programme on the effects of climate change on forest ecosystems, including development of common methodology and indicators.</p> <p>Develop and expand efforts related to increased</p>	<p>The Barents Forest Sector Task Force (BFSTF), Working Group on Environment, Working Group Economic Cooperation and others.</p>	<p>Launch in 2013, then ongoing.</p>

	<p>sustainable production and supply of forest products for energy and wood constructions in the Barents Region</p> <p>Continued and strengthened efforts in forestry operations to avoid damage to old-growth forests not suitable for logging, peatlands and other wetlands to enhance reservoirs for greenhouse gases, as well as habitats for biota.</p>		
<p>Energy efficiency and renewable energy</p>	<p>Continued effort to define policies for improved energy efficiency and increased use of renewable energy for climate change mitigation, improving security of supply, and enhanced competitiveness.</p> <p>Activity to be launched by a workshop to facilitate cross-border cooperation on energy efficiency and renewable energy.</p>	<p>The Joint Working Group on Energy (JWGE).</p>	<p>The workshop will be held in 2013</p>

Adaptation

<p>Water management</p>	<p>Study of the harmful effects of climate change on water level, flow regulation and contamination in the Finnish, Norwegian and Russian border region.</p> <p>Increased cooperation on water management related to flood prediction, flood risk and clean drinking water, as well as on efforts to counteract flooding in river systems.</p>	<p>Working Group on Environment (WGE)</p> <p>Working Group on Environment (WGE). A possible link to the Joint Working Group on Health and Related Social Issues, which may be consulted on the health issues related to the objective, and to the Joint Committee on Rescue Cooperation will also be considered</p>	<p>Ongoing, study to be completed in 2014/2015</p> <p>Launch in 2013, then ongoing.</p>
--------------------------------	--	---	---

Transport	The planned joint transport plan for the Barents Region is to include an assessment of the impacts of climate change, such as risk for more extreme weather.	The Steering Committee of the Barents Euro-Arctic Transport Area (BEATA)	2014
Barents Protected Area Network	Expand the protected area network to meet the challenges of climate change and species adaptation to meet the agreed targets of Convention on Biological Diversity. A special focus should be given to the last intact old-growth forests, peatlands and other wetlands.	Working Group on Environment (WGE)	Ongoing (2-4 years period)
Nomadic reindeer husbandry	An assessment of how climate change in the Barents Region affects the society and environment if nomadic reindeer herders.	Working Group of Indigenous Peoples (WGIP)	To be launched in 2013

Research, observation, monitoring and modelling

Education	<p>Development of a concept for providing PhD-level courses relating to climate change from the High North Academy throughout the entire Barents Region.</p> <p>International courses on climate change onboard the Floating University.</p>	Joint Working Group on Education and Research (JWGER)	<p>2014</p> <p>Start-up in 2014</p>
Ensuring long-term series	<p>Collection of information about all relevant observation series, drawing up a prioritized list of those that should be given funding for a long-term period and making the data series available to all researchers.</p>	Joint Working Group on Education and Research (JWGER) in cooperation with the Working Group on Environment (WGE)	<p>Workshop in 2014, to examine, discuss and prioritize the material gathered.</p>
Black carbon	<p>Increased monitoring and research related to black carbon and other short-lived climate pollutants, including assessment of the contribution from the Barents Region to climate change in the Arctic.</p>	Joint Working Group on Education and Research (JWGER) in cooperation with the Working Group on Environment (WGE) and the European Monitoring and Evaluation Programme (EMEP)	<p>Detailed planning in 2013.</p>

Permafrost	Assessment of how climate change affects the temperature regime of permafrost-affected soils.	Joint Working Group on Education and Research (JWGER)	First assessment in 2015?
-------------------	---	--	---------------------------

Outreach

Barents Industrial Partnership Meeting	Address challenges and opportunities linked to climate change and development of business cooperation during the Barents Industrial Partnership Meeting in 2013.	Working Group on Economic Cooperation (WGEC)	May 2013 ⁵
Permafrost conference	An international conference on thawing permafrost	Working Group on Environment (WGE)	2015
Dissemination of information	Collection of knowledge and distribution of updated information about climate change and recommended action. Creation and sharing of information videos about	Working Group on Environment, International Barents Secretariat, all working groups. Joint Working Group on Education	Ongoing.

⁵ This proposal was carried through before the Action Plan on Climate Change was ready for submission to the BEAC Committee of Senior Officials. It is presented as a part of the Action Plan, as the measure reflects the input from the Working Group on Economic Cooperation at the time when their written was requested.

	climate change via the “FrostBytes” system and online “webinars”	and Research (JWGER)	
Cooperation with international organizations	Strengthened cooperation between the BEAC and other international organizations in order to increase awareness of specific northern concerns in relation to climate change.	Working Group on Environments, with other working groups as appropriate.	Ongoing.