



Development of an Action Plan on Climate Change in the Barents Region

Current status and recommendations

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The International Barents Secretariat

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Summary

The IBS notes that since the ACIA report in 2004 the CSO has presented policy recommendations on how to implement different activities focusing on mitigation, adaptation, research, observation, monitoring and modelling and outreach (adopted in 2005).).

The IBS notes that Sweden, Finland, Norway and the Russian Federation have adopted and developed different policy documents on climate change, see annex II

The Norwegian government is perhaps the only country that has a special policy , the NorACIA report, that is focusing on climate change, impacts of climate change and adaptation on climate change in the Norwegian Arctic, Northern Norway, Svalbard and the Barents Sea. The Norwegian report is a direct follow up on the ACIA report. The main goal for the NorACIA is to consolidate updated and known knowledge about climate change in the Norwegian Arctic as a basis for further consideration of actions related to climate change and consequences of climate change in this region.

The Vadsø conference was a follow up on the CSO recommendations and the 8th Conference of Environment Ministers of the Barents Euro-Arctic Council, 9 November 2007 in Moscow. The conference lead to some new recommendations for decisions-makers to consider (2009 in Vadsø, Norway).

During spring 2010, the IBS, has asked the working groups in the Barents Euro-Arctic Cooperation to report any climate change related activities. In the matrix under each headline the IBS has presented different projects that are related to e.g. mitigation or adaptation. The IBS notes that the majority of projects have their ownership either in the Working Group on Environment or the Joint Working Group on Education and Research. Furthermore the IBS notes that the majority of activities are within research, observation, monitoring and modelling. Very few activities are in the other policy areas.

The IBS concludes that since 2005 several policy recommendations have been made. The CSO itself has made a follow-up on the ACIA report; the CSO report "Arctic Climate Change: Policy measures relevant for the Barents Region" which contains many propositions of measures.

The Norwegian chairmanship followed up on the Moscow declaration and the Vadsø conference and came with additional recommendations.

The IBS believes that the recommendations are still relevant and important to follow up with concrete activities. Maybe there are too many recommendations and an absence of guidance that explains why not so many concrete activities have emerged from the policy recommendations. Another important factor to be aware of is that concrete activities within mitigation and adaptation takes time to realize and also needs extensive amounts of funds.

The IBS recommend the CSO to prioritize among the policy recommendations in order to facilitate for the working groups to develop concrete activities. Firmer guidance to the working groups from the CSO would also be useful when working with the policy recommendations. It is also useful if there would be someone appointed to follow-up regularly the work in the working groups and that the chairmen of the working groups, once or twice a year, meet to exchange information and seek possibilities for joint projects.

Furthermore, the IBS believe it is important to have a dialogue with national, regional and local politicians and authorities in order to promote the recommendations and encourage concrete activities. Also seek possibilities to cooperate with the Arctic Council, EU, CBSS and other organizations would improve the work on actions on climate change.

The IBS recommends to the CSO the following measures;

- The IBS suggests the CSO establish a new program period with targets on combating climate change.
- The IBS recommends the CSO establish a closer link to the Barents Regional Council and its working groups to increase the coordination of climate change related activities. Closer and strengthened dialogues with politicians on national, regional and local level are also of importance to implement more concrete activities in the Region.
- The IBS recommends the CSO re-vitalize the working groups and encourage common activities between the working groups. The IBS emphasize that the Ministers stressed that climate change issues concerns the whole Barents Cooperation and the aim of the Action Plan on Climate Change in the Barents Region is to contribute towards developing coordinated actions on climate change in the Barents Euro-Arctic Cooperation.
- The activities should be more focused on concrete results in the policy areas of adaptation, mitigation and outreach. The IBS recommends the CSO also prioritize among the policy recommendations that are adopted.
- IBS suggests the CSO to organize thematic conferences with the IBS in e.g. infrastructure and climate or forestry, climate, or rescue capacity and infrastructure. Furthermore, IBS also suggest to the CSO to arrange an outreach activity to the citizens (information campaign) in the region that are focusing on disseminating relevant information on climate change issues, as well as to increase the exchange of information and explore the possibilities to cooperate with other organizations in the area.
- The IBS suggests the CSO assign a Coordinator that actively work to follow-up and coordinate climate change efforts in the working groups. The Coordinator would answer and report to the CSO.
- To achieve better coordination between the groups to develop coordinated actions on climate change, the IBS recommends to the CSO that the Chairmen of the working groups meet two times per year to exchange information and explore possibilities for joint cooperation and projects. The Coordinator should be responsible for reporting progress on developing coordinated actions in the Region to the CSO.
- The IBS recommends, in order to better coordinate climate change related activities in the Region, the creation of a Barents fund for feasibility studies. The Barents fund should facilitate and encourage more multilateral cooperation within the area of climate change. The contributors to the fund should be the member countries of the Barents region and the recipients for the fund the working groups on both national and regional level. The fund should be administrated either by the IBS or NEFCO.

Acronyms

CSO Committee of Senior Officials

IBS	International Barents Secretariat
BEAC	Barents Euro-Arctic Council
BRC	Barents Regional Council
BEAR	Barents Euro-Arctic Region
ACIA	Arctic Climate Impact Assessment
NorACIA	Norwegian Arctic Climate Impact Assessment
IPCC	Intergovernmental Panel on Climate Change
BASREC	Baltic Sea Region Energy Cooperation
AMAP	Arctic Monitoring Assessment Program
NEFCO	Nordic Environmental Financial Cooperation
WGE	Working Group on Environment
JWGER	Joint Working Group on Education and Research
UNDP	United Nations Development Program
RREC	Russian Regional Environmental Centre

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Introduction

This document has been drawn up as a follow-up on the declaration of the 9th Meeting of the Ministers of Environment of the Barents Euro-Arctic Council in Tromsø, Norway (February 16-17, 2010). The Ministers of Environment stressed that climate change issues concerns the whole Barents Cooperation and the aim of the Action Plan on Climate Change in the Barents Region is to contribute to the development of coordinated actions on climate change in the Barents Euro-Arctic Cooperation and provide recommendations to the Committee of Senior Officials (hereinafter the CSO) for its decision making. The International Barents Secretariat (hereinafter the IBS) has been given the task from the CSO to develop the Action Plan on Climate Change in the Barents Region.



The document is based on the reports of the ACIA, NorACIA, the CSO policy recommendations and the recommendations from the Vadsø Conference.

Impacts of climate change in the Barents Region

The current situation for the Arctic and the Barents region is that a higher warming rate over Arctic land areas has been observed in the last two to three decades than any other region on the earth. The sea-ice cover has decreased 10 % during the same period and precipitation has also increased in the north of 60°N over the past century. Other observed climate trends are of snow cover, thawing of permafrost, rising sea levels and river flows. Furthermore, the Barents Sea has been essentially ice free in the summers over the last four years. Climate change is a reality and has already led to impacts on the environment and on economic activities in the region. A continued warming of the region will greatly affect ecosystems, cultures, lifestyles and economies across the region.

The climate projection for the 21st century indicates that the temperature will increase between 5 to 7°C depending on emission scenarios in NorACIA. In the NorACIA it is projected that the strongest warming will occur during fall and winter. The IPCC projected an annual warming of 5°C in the end of the 21st century for the region. It is noted that there are large discrepancies between regional and global climate models; therefore uncertainties in the climate projections are considerable.

It is also noted that large climate variabilities occurs from year to year, for example in precipitation.

Impacts on natural systems

According to the ACIA report one of the effects of climate change will be that permafrost will thaw and cause lakes and wetlands to drain in some areas, while creating new wetlands in other places. The result of this shift is still not yet known but it is likely that a shift of species will occur. Vegetation shifts are projected to shift



northward where the forest will encroach on the tundra and the tundra encroach on polar deserts.

Another expected consequence includes an increase of fires and insects, in both frequency and intensity. This development may also introduce to the habitats non-native species and can affect the balance in the ecosystems and also endanger the old-growth forest. There will most likely be a shift northward for a range of plants and species, resulting in an increased number of species in the region. A result of this northward shift is that it is most likely that both marine and land species that are dependent or adapted to the Arctic climate will be affected in a negative way, inter alia, decline of polar bears and Arctic fox. Climate change will also make the Region more vulnerable to contaminants.

Furthermore it is projected that the sea ice cover will decrease. The observations that have been made of the ice cover in the Barents sea and the Arctic, indicates that the perennial ice cover decrease and the melting is enhanced as the thin one-year ice is more prone to melt. An additional consequence of warmer sea is that the acidification increases.

Impacts on Society

As a consequence of climate change and impacts on the natural system the society itself will also face repercussions. The ACIA report projects impacts in a broad variety of areas. It is likely that Indigenous people will be more affected than other people in the region by the effects of climate change. This is due to the fact that the indigenous economy is based on reindeer herding and the climate change will have great impact on pastures lands etc. Access to traditional food will also decrease and poorer quality has already been



observed in some locations such as decline of freshwater fish (Whitefish, Arctic char etc.). Climate change will also affect human health caused by inter alia adverse impacts on sanitation infrastructure. Transport routes will be affected in a negative way due to thawing of ground. Communities that rely on frozen roadways to truck in supplies are also being affected. Climate change will also open up and expand the marine shipping in the region, including the Northern Sea Route and the Northwest Passage. The summer season is projected to

lengthen as the century progresses due to a decline of sea ice. When the decline of sea ice progresses there will also be an increase of access to resources in the region inter alia offshore oil and gas some minerals. Marine fisheries will likely increase due to the migration of fish species to the region and it is also likely that agriculture and forestry will increase when land areas open up for food and forestry production.

Impacts on infrastructure

It is also stressed in the report that the climate change will likely affect the infrastructure in the Arctic region in different ways. The ACIA report emphasized that some infrastructure may be relatively insensible to climate change and other infrastructures can easily be adapted to changing conditions. In other cases a higher sensibility may exist and any failure of integrity may be higher. For this type of infrastructure it may be warranted to make a full analysis on what action is needed to adapt to climate change.



In some places the buildings are built upon the permafrost. To avoid thawing the foundation system, decisions-makers, authorities and builders have a new dimension to consider whilst planning for new

projects in the Region. In other places it is important to adapt the wastewater discharge etc. Different places in the Region need different measures to adapt.

Impacts on health

Impacts on health may vary considerably for Arctic residents depending on, inter alia, factors like age, gender, capacity of local health, social-economic status, lifestyle etc. The ACIA report stressed that it is more likely that populations living in close association with the land, in remote communities, and those that already face a variety of health-related challenges will be most vulnerable to future changes in climate. Climate change is a factor to take into consideration and climate has played and will continue to play a significant role in the health of residents in the region.

Direct health impacts may result from changes in the incidence of extreme events, e.g. avalanches, storms, floods and direct negative impacts of warming could include heat stress in summers, mental and social stress related to changes in the environment and lifestyle, potential changes in bacterial and viral proliferation, vector-borne disease outbreaks, food security and changes in access to good drinking water sources, illness from impacts on sanitation infrastructure.

The ACIA report stressed that communities must be prepared to identify, document, and monitor changes in their area in order to adapt to shifts in their local environment, which would also decrease the stress on communities and the relationship between people and the environment. A deeper cooperation with the Indigenous people in the Region would be useful to monitor and observe the effects of climate change in the Region

Policy recommendations

The IBS recognizes that the Barents Euro-Arctic Council 9th session in Umeå in October 2003 noted that climate change will have profound ecological consequences in the Region, with effects on human health, biota, infrastructure and economic activity like sea and land transport, forestry, fisheries, hunting and reindeer husbandry. The CSO was requested to elaborate specific policy measures relevant to the Barents Region on the basis of the report from the “Arctic Climate Impact Assessment (ACIA)”.

The CSO presented its report “Arctic Climate Change: Policy measures relevant for the Barents Region” to the BEAC on October 17, 2005 (hereinafter the CSO recommendations). The report is based upon the structure of the ACIA policy recommendations adopted by the Arctic Council. The proposal contains a list of suggested measures for the Barents Euro-Arctic Region, in the following areas:

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

In the report the CSO also recommended the Ministers adopt the proposed list of measures that was presented in the report and also to direct the CSO to ensure that BEAC working groups and task forces take the findings of the ACIA report into account in the context of their activities and that they make necessary adjustments in their working priorities, as appropriate. It is also noted that the CSO recommends the issue to be raised with the Barents Regional Council, its members and subsidiary bodies in order to provide enhanced information on matters relevant to climate change in the region,

and also to involve them in the follow-up of the proposed measures in areas within their field of competence.

Since the CSO report, the IBS notes that the 8th Conference of Environment Ministers of the Barents Euro-Arctic Council, 9 November 2007 in Moscow (Moscow declaration) stressed the importance of further actions to implement the recommendations in the ACIA report and the recommendations made by the CSO.



The Norwegian chairmanship of the Working group on Environment organized a conference “Climate change in the Barents region, 1-3 September 2009, Vadsø, Norway” (hereinafter the Vadsø Conference) to follow up on the Moscow declaration and the CSO policy recommendations. The aim of the conference was to identify relevant areas of cooperation on climate change in the Barents Region in a light of updated knowledge.

Mitigation measures in the Barents Euro-Arctic Region

IBS notes that the CSO recommended the BEAC Member States pursue the following measures relevant for the Barents Region under the period 2006-2010:

- The CSO notes that the emissions of greenhouse gases within the Barents Region are limited and that there are important mitigation opportunities that would contribute to global emission reduction. The Region is an important carbon sink, in the form of forest and other surface vegetation, and carbon trapped in mires and by permafrost. In addition to carbon dioxide, several climate gases (e.g. methane) are trapped in a similar way.
- Continue the promotion of more efficient energy use, renewable energy production and emerging technologies. Promote the further dissemination and application of cleaner production strategy and methods and the best available technology at enterprises within the Barents Euro-Arctic Region, as well as broad conversion whenever possible, to renewable and alternative fuel sources.
- Identify Barents environmental hot spots projects of direct relevance to energy savings, use of alternative energy sources or other CO₂ emission reduction measures, and seek their effective implementation, inter alia with the assistance of the Barents Hot Spots Facility.
- In cooperation with BASREC identify and seek effective implementation of climate gas emission reduction measures with financial support from the Testing Ground Facility, cf. Agreement on a Testing Ground for application of the Kyoto mechanisms on energy projects in the Baltic Sea Region, signed in Gothenburg on 29 September 2003.
- Continue and expand programs that conserve and enhance carbon reservoirs, such as the protection of forest, actively increasing forest growth potential, and the protection of bogs, moors and other carbon sinks and permafrost areas against further degradation. Measures should include measures with regard to forest fire control, forest pest control, and illicit forest harvesting and timber trade. Similarly, further support should be provided to programs and projects on development of the region's network of specially protected nature territories (natural parks, closed forests, nature reservations, etc.), as well as to the conservation of biodiversity and natural heritage objects.

The IBS notes that the Vadsø Conference supported the above mentioned and also called for early action on methane and other short-lived climate forcers (black carbon, methane and tropospheric ozone) of the Arctic Council Tromsø Declaration: Identify and implement immediate actions that can be taken within the Barents Region;

- Called for expedient implementation of energy efficiency measures, incl. accelerated development of alternative sources of energy and cleaner production strategies, also related AMAP/NEFCO hot spot list;
- Urgent actions to prevent future degradation and improve management practices for peat lands, wetlands and forests with significance as sinks for greenhouse gases, as well as habitats for biota.

Adaptation measures in the Barents Euro-Arctic Region

The IBS notes that the scientific data strongly suggest that climate change is inevitable and that adaptation is needed. Adaptation to climate change and its impacts must take into account the vulnerable natural and human systems in the Region. Special attention needs to be paid to strengthening the adaptive capacity of its residents.

A consequence is that authorities should work closely with citizens, including indigenous and local communities, to help them adapt to and manage environmental, economic and social impacts of climate change (and ultraviolet radiation change).



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The CSO recommendations stressed that the adaptation needs will vary. Residents of the Barents Euro-Arctic Region may need, inter alia, enhanced access to information, decision makers, and institutional capacity building to safeguard their health, culture and well-being.

For the period 2006-2010 the CSO recommended the BEAC Member States pursue the following measures with regard to adaptation in the Barents Region;

- Identify and seek effective implementation of measures to limit negative climate impact on local communities and traditional activities, including those of the indigenous peoples. A particular emphasis should be made on measures to counteract negative impacts on human health.
- Identify and seek effective implementation of measures to address the issue of shifting vegetation zones and to preserve a variety of vegetation zones, including the possible suppression on unwanted species. In this respect, emphasis should also be put on measures to counteract increasing insect outbreaks.
- Identify and seek effective implementation of measures to counteract the effects of thawing permafrost on buildings, roads and other infrastructure.
- Continue and strengthen cooperation between emergency and rescue services, including in the field of climate induced calamities, forest fires, storms, floods etc.

- IBS notes that the Vadsø conference also recommended strengthening the cooperation to identify climate-related health challenges, such as climate driven infections, the importance of clean water and socio-economic factors;
- Strengthened cooperation on water management, inter alia related to flood risk and clean drinking water;
- Enhanced info-sharing on best adaptation practices; pursue community level actions;
- More active involvement of indigenous peoples, systematic use of traditional knowledge, as well as capacity building in order to strengthen ability to adapt to changes climate and land use;
- Intensified sharing of knowledge and know-how on best practices, in the field of infrastructure construction and maintenance under changing cryospheric conditions, especially related to degradation of permafrost;
- Expanded use of risk assessment;
- Give special attention to coastal zone

Research, Observations, Monitoring and Modeling in the Barents Euro-Arctic Region

The CSO points out that without overlapping research, observations, monitoring and modeling activities globally in an Arctic context, the Barents cooperation should focus on those research needs and efforts that play a significant role in developing and applying mitigation and adaptation measures in the Region.

For the period 2006-2010 the CSO recommended the BEAC Member States pursue the following measures with regard to research, observation, monitoring and modelling in the Barents Region;

- Encourage intensified natural and social science research on climate related issues, at research institutions in the Region, and encourage the securing and strengthening of existing research and monitoring networks, including in the field of biodiversity. Fields of activities should include researching the recurrence and intensity of extreme hydro meteorological phenomena connected with climate change in the Region, with the possibility of developing and early detection and forecasting system for dangerous weather and climate phenomena in order to take measures on protecting human lives and limiting damage.
- Launch together with other partners, a program for a more detailed assessment of the possible economic and environmental impacts of climate change in the Barents Euro-Arctic Region, including the increased potential for natural resources exploitation and use of Arctic sea routes, the environmental risk of potentially increasing economic activity, and economic impacts of infrastructure damage.
- Request and encourage relevant national and international research bodies and sponsors to take into account Barents specific science needs in their programs.
- Encourage the provision of relevant data from research, observation, monitoring and modelling activities to local and regional authorities and research institutions and to ensure the availability of relevant regional/local data for research and political decision-making.

- The IBS notes that Vadsø conference stressed it is important to intensify the cooperation to develop climate change models and impact models for the Barents Region with adequate spatial resolution, with a view to creating a common baseline for actions;
- Extended monitoring and research on permafrost degradation and its impact, in order to understand its broader implications;
- Research on the relationship between climate change and changes in land use, especially related to the traditional livelihood of indigenous peoples;

Outreach efforts in the Barents Euro-Arctic Region

The CSO underlined in their policy recommendations to ensure regional and local awareness of the threats and challenges associated with a warming Arctic that the BEAC Member States should pursue the following measures relevant for the Barents Region in the period 2006-2010:

Develop a dissemination strategy for climate change information in order to strengthen cooperation on the economic, environmental and social ramification of climate change in the Region. Encourage the holding of information seminars at various levels and for diverse audiences. Stimulate the discussion of climate change issues in the context of activities relevant to the economic and social sectors, with regional administrations, business partner and other stakeholders in the Region.

Encourage the early incorporation of materials from the ACIA into educational, research and training programs at learning and scientific institutions in the Region.

The following recommendations were made on Outreach at the Vadsø conference;

- Systematic efforts to collect knowledge and distribute up-dated information about climate change and recommended measures in a popular form to the public;
- Systematic exchange and dissemination of information on climate change to decision makers at the regional and local level;
- Strengthen regional expertise to give input to regional decision makers on climate change mitigation and adaptation;
- Study lesson to be drawn from projects such as the UNDP/RREC case study of Murmansk Country, the CAVIAR and EALAT projects and others;
- Perform a comparative study of climate change strategies of countries of the Barents Region with a view to draw relevant lessons for regional climate change strategies;
- Make systematic use of the International Barents Secretariat in the production and distribution of information on climate change for the benefit of the general public and the working groups under the Barents Euro-Arctic Council.

Recommendations

IBS notes that there is only one project during the recent year in the policy area of mitigation that has been reported and implemented in the Cooperation. Within adaptation only two projects have been carried out and within research, observation, monitoring and modelling the majority of projects and activities are implemented. The IBS notes that three projects have been implemented within Outreach efforts.



This document has compiled the work that has been done in the CSO and has followed-up on the CSO recommendations and the recommendations from the Vadsø conference. The IBS notes that the CSO recommendations were adopted in 2005 and identified many relevant areas for cooperation. In 2009 the Working Group on Environment followed-up the CSO recommendations and the Moscow declaration. The Vadsø conference presented a set of recommendations for the Barents Euro-Arctic Cooperation.

The IBS notes that there are a vast number of recommendations to follow-up from the period 2006-2009, and the compilation the IBS recently has been carried out on climate related activities in the Cooperation indicates that the majority of projects are implemented within research, observation, monitoring and modelling by the Working Group on Environment or the Joint Working Group on Education and Research.

Furthermore the IBS notes that the majority of working groups in the Barents Euro-Arctic Cooperation for the moment have no climate change related activities planned or ongoing.

The IBS recognize that the CSO recommendations and the Vadsø conference are still valid and important to the Region and hence further actions are needed to implement the recommendations.

The IBS recommends to the CSO the following measures;

- The IBS suggests the CSO establish a new program period with targets on combating climate change.
- The IBS recommends the CSO establish a closer link to the Barents Regional Council and its working groups to increase the coordination of climate change related activities. Closer and strengthened dialogues with politicians on national, regional and local level are also of importance to implement more concrete activities in the Region.
- The IBS recommends the CSO re-vitalize the working groups and encourage common activities between the working groups. The IBS emphasize that the Ministers stressed that climate change issues concerns the whole Barents Cooperation and the aim of the Action Plan on Climate Change in the Barents Region is to contribute towards developing coordinated actions on climate change in the Barents Euro-Arctic Cooperation.
- The activities should be more focused on concrete results in the policy areas of adaptation, mitigation and outreach. The IBS recommends the CSO also prioritize among the policy recommendations that are adopted.
- IBS suggests the CSO to organize thematic conferences with the IBS in e.g. infrastructure and climate or forestry, climate, or rescue capacity and infrastructure. Furthermore, IBS also sug-

gest to the CSO to arrange an outreach activity to the citizens (information campaign) in the region that are focusing on disseminating relevant information on climate change issues, as well as to increase the exchange of information and explore the possibilities to cooperate with other organizations in the area.

- The IBS suggests the CSO assign a Coordinator that actively work to follow-up and coordinate climate change efforts in the working groups. The Coordinator would answer and report to the CSO.
- To achieve better coordination between the groups to develop coordinated actions on climate change, the IBS recommends to the CSO that the Chairmen of the working groups meet two times per year to exchange information and explore possibilities for joint cooperation and projects. The Coordinator should be responsible for reporting progress on developing coordinated actions in the Region to the CSO.
- The IBS recommends, in order to better coordinate climate change related activities in the Region, the creation of a Barents fund for feasibility studies. The Barents fund should facilitate and encourage more multilateral cooperation within the area of climate change. The contributors to the fund should be the member countries of the Barents region and the recipients for the fund the working groups on both national and regional level. The fund should be administrated either by the IBS or NEFCO.

Annex 1

Project list

Follow-up on projects relevant to mitigation

The following projects have been carried out in different working groups in the Barents Euro-Arctic Cooperation. In the matrix below projects and activities are presented that are relevant for mitigation. The IBS notes that the majority of projects that are carried out in the Cooperation are in the Working Group on Environment (WGE) and in the Joint Working Group on Education and Research (JWGER).

Project title	Short description	Project owner	Status (Finalized/Ongoing/Planned for/ Under discussion)	Working group
Climate change and airborne pollutants in the Pasvik River Basin	Three year joint project on studying mitigation of the harmful effects of climate change, water level, flow regulation and contamination in the Finnish, Norwegian and Russian border regions. Knowledge and information on environmental impacts and strategies on adaptation to climate change and other antropogenic effects on regional level.	Centre for Economic Development, Transport, and Environment for Lapland (F), County Governor of Finnmark (N) and the Institute of the Industrial Ecology Problems of the North of Kola Science Centre (INEP) (RF)	Application submitted to the Kolartic ENPI CBC program, spring 2010. Project planned to start in late 2010	WGE
Workshop	Under	Nordic Council	Concrete event to be	JEWG

on Energy efficiency sponsored by Nordic Council of Ministers	preparation for the autumn 2010 at the Murmansk Oblast Energy Efficiency Center (MOEEC)	of Ministers in cooperation with Ministry of Petroleum and Energy (Norway), Energy Saving International (ENSI) and MOEEC)	prepared in close cooperation with the BEAC JEWG co-chairs. Possible date November/December 2010	
Bilateral cooperation on Energy in the Barents region.	Bilateral MoUs with Russia signed by Norway, Sweden and Finland covering energy efficiency and renewable energy	Relevant authorities in SE, NO, FI and RUF	Exchange of information and best practices in BEAC JEWG autumn 2010	JEWG

The IBS notes that the work in the subgroup on Cleaner Production and Environmentally Sound Consumption conduct many activities that contribute to climate change mitigation. Cleaner production measures contribute in many cases aim to increase energy efficiency in production processes whereas environmentally sound consumption aim at enhancing consumption patterns, indirectly also contributing to a decreased impact on climate change. The subgroup on cleaner production conduct and plan several projects aiming at strengthening capacity of taking cleaner production and environmentally sound consumption measures, for example training programme for enterprises in NW Russia and workshop seminars on issues like sustainable constructions and buildings, sustainable lifestyles and education and green public purchasing. The subgroup seek opportunities to co-operate with the working group on energy to use the energy efficiency centres providing with information and education. Based on the outcome of the ministerial meeting of Ministers of Competitiveness in Umeå the 19th of May, this could become an important component of the possible action plan on climate change in the Barents Euro-Arctic Council.

In the JEWG group focus is on energy efficiency and renewable energy. Policies to promote energy efficiency and renewable energy are the keys to meet key energy policy objectives in the Barents region as reducing climate gases, improving the security of supply and improve the competitiveness of businesses in the region. IBS notes that all projects in this area of energy policies would likely have a possible positive impact on the climate change mitigation.

The Hotspots Exclusion Subgroup serves as the central driving force and co-ordinator in the work to launch adequate action projects aimed at the exclusion of the 42 Barents Environmental Hotspots from the NEFCO/AMAP List from 2002. In several cases of the hot spots measures relating to climate

change mitigation is needed, such as reduction of gas emissions in industry. In the coming years the subgroup have the mandate to facilitate the process of excluding “hot spots” from the list according to a procedure and criteria developed. The subgroup will work closely together with concerned parties (authorities, companies etc) in the regions of North West Russia. Additionally, through the NEFCO hot spot facility feasibility studies are carried out to facility environmental project development. The work on hot spots therefore needs to be included in the development of an action plan on climate change in the Barents-Euro Arctic Council.

Follow-up on projects relevant to adaptation

The following projects have been carried out in the Barents Euro-Arctic Cooperation. In the matrix below projects and activities are presented that are relevant for adaptation. The IBS notes that the majority of projects that are carried out in the Cooperation are in the Working Group on Environment and in the Joint Working Group on Education and Research.

Project title	Short description	Project owner	Status (Finalized/Ongoing/Planned for/ Under discussion)	Working group
Climate change and water management	Seminar on adaptation to climate change relating to water issues. Exchange of experineces in the Barents region, between countries and regions, on adaptation strategies	Nordic Council of Ministers together with Archangelsk Oblast, WGE and the Subgroup on Water Issues	Planned to start spring 2011	WGE
Protection of biodiversity in a changing climate	Project giving attention to adaptation strategies and the need for protected areas to preserve biodiversity in a changing climate	Umeå Univiersity, together with other univeristies in the Barents region, and in cooperation with the subgroup on nature protection (S et al)	Ongoing	WGE

Follow-up on projects relevant to Research, Observations, Monitoring and Modeling

The following projects have been carried out in the Barents Euro-Arctic Cooperation. In the matrix below projects and activities are presented that are relevant for Research, Observations, Monitoring and Modeling. The IBS notes that the majority of projects that are carried out in the Cooperation are in the Working Group on Environment and in the Joint Working Group on Education and Research.

Project title	Short description	Project owner	Status (Finalized/Ongoing/Planned for/ Under discussion)	Working group
Trilateral cooperation on our common resource the Atlantic salmon in the Barents region	Develop and enhance the management of the shared Atlantic salmon resource in the Barents region; enabling a future adaptive sustainable and knowledge – based harvesting regime, conservation of the rich fishing traditions and coastal culture and indigenous traditions. By merging traditional, local knowledge with new ecological, and genetic salmon research in Norway, Russia and Finland	County Governor of Finnmark (N), Finnish Game and Fisheries Research Institute (FGFRI) (F) and the Polar Research and Oceanography Institute (PINRO) (RF)	Application submitted to the Kolartik ENPI CBC program, spring 2010. Project start is planned in late 2010.	WGE
Phenological registration	Based on the Letopis prirody (Nature history), a list of about 30 plant species are observed for 16 phenomena.	Kandalaksja zapovednik, Lapland zapovednik, Pasvik zapovednik (RF) Polar Alpin Botanical Garden	The project is a long time series, financing has ceased, and the last two years the work has been unfinanced.	WGE

	This is a long term serie that started in 1994. This is directly measuring the effect of climate on the species.	(RAS) and Bioforsk Svanhovd (N)		
Influence of climate on biodiversity, threatened habitas and nature resourse production including some environmental services	Based on nettwork of phenology and nature production (berries, timber etc) and long-time series of biological and species data. The project will be analyzing content and calibration of data, further production of reports and articles and public information. Focus on Interreg area.	Bioforsk Svanhovd (N) NORUT (N) Metsähallitus (F) Russian zapovedniks (RF) and several other institutions & organisations. Combined with the SCANNET organization and the possible EU project INTERACT.	Project under planning, aim to make application to INTERREG Need co-financing.	WGE
Study of carbon reserves in the North of Russia: the past, present and future (CARBO-North)	Not available (N/A)	Institute of Biology Komi Science Centre	2006-2010	WGE
Tundra dynamic: unification of physical, chemical and biological processes	N/A	Institute of Biology Komi Science Centre	2006-2010	WGE
Monitoring of subsoil condition on the territory of Komi Republic	N/A	Mireko Mining Company (Mineral Resources of Komi)	2008-2010	WGE

Monitoring of subsoil condition on the territory of Komi Republic	N/A	Mireko Mining Company	Planned for 2011-2013	WGE
Monitoring of subsoil condition on the territory of Nenets Autonomous okrug	N/A	Mireko Mining Company	2008-2010	WGE
Monitoring of subsoil condition on the territory of Nenets Autonomous okrug	N/A	Mireko Mining Company	Planned for 2011-2013	WGE
Temperature regime of cryolitozone	N/A	Mireko Mining Company and Geophysical Institute of the Alaska University	2010-2013	WGE
Degradation of Permafrost in the Barents region	N/A	Mireko Mining Company and Geological Survey of Finland	Joint field trips took place in 2008, 2009 and will also be in August 2010	WGE
Dynamics of long-term (perennial) changes of eco-systems in coastal zones of Barents and White seas	N/A	Petrozavodsk State University	Not available (N/A)	JWGER
Evaluation of the present state and development perspectives of fish and hunt economy.	N/A	Petrozavodsk State University	N/A	JWGER
The influence of extreme factors on physiological functions and the	N/A	Petrozavodsk State University	N/A	JWGER

tissue structure of organisms				
Evaluation of the condition of ground and water ecosystems and the forecast of the environment development in the conditions of anthropogenic influence,	N/A	Petrozavodsk State University	N/A	JWGER
Harvesting Methods – Impacts on Wood Quality and Overall Performance of Wood Harvesting Companies	N/A	Petrozavodsk State University	N/A	JWGER
Studying of flora and vegetation of natural and anthropogenic ally affected territories	N/A	Petrozavodsk State University	N/A	JWGER
Intensification of forest management and improvement of wood harvesting in Northwest Russia	N/A	Petrozavodsk State University	N/A	JWGER
Biodiversity conservation and utilisation of bio-resources in Barents Region	N/A	Petrozavodsk State University	N/A	JWGER
Health of children and teenagers of	N/A	Petrozavodsk	N/A	JWGER

BEAR in the context of environmental factors influence		State University		
4th International conference for University students and PhD students “Actual issues of ecological security”	N/A	Murmansk Humanities Institute	N/A	JWGER
Current climate change influence on the European North eco-systems.	N/A	Pomor State Lomonosov University	N/A	JWGER
Arctic Human Health Initiative.	N/A	Syktyvkar State University	N/A	JWGER
Preservation and mobilization of the unique genetic resources of the plants of the botanic garden of the Syktyvkar State University	N/A	Syktyvkar State University	N/A	JWGER
New technologies of agriculture in the cold climate and development of innovative farms.	N/A	Syktyvkar State University	N/A	JWGER
National parks and protected forest	N/A	Syktyvkar Forest Institute	N/A	JWGER
Improvement of natural resources' management in	N/A	Uhta state technical	N/A	JWGER

gas and oil production.		university		
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Follow-up on projects relevant to Outreach efforts

The following projects have been carried out in different working groups in the Barents Euro-Arctic Cooperation. In the matrix below projects and activities are presented that are relevant for outreach in the Barents Euro-Arctic Region. The IBS notes that the majority of projects that are carried out in the Cooperation are in the Working Group on Environment and in the Joint Working Group on Education and Research.

Project title	Short description	Project owner	Status (Finalized/Ongoing/Planned for/ Under discussion)	Working group
PAX NATURA – Our common Arctic Heritage	Develop and enhance cooperation in the fields of nature protection, nature interpretation education and sustainable nature tourism along the Green Belt of Fennoscandia.	Metsähallitus (F), County Governor of Finnmark (N), Bioforsk Svanhovd (N), Pasvik Zapovednik (RF)	Application planned to be submitted to Kolartic ENPI CBC 2nd call. Planned implementation of the project under 2011.	WGE
Phenology of The North Callotte	Norwegian-Russian school project including phenological registrations and climate change. Knowledge of species and interactions between observed phenomenas in nature. Also includes a teacher seminar and a school gathering.	Bioforsk Svanhovd (N) Kandalaksha Zapovednik (RF)	Ongoing (since 2001)	WGE
Climate change in the Barents region, 1-3 September	Conference to follow up on the Moscow declaration and the CSO	The Norwegian Ministry of Environment	Finalized	WGE

2009, Vadsø, Norway	policy recommendations. The aim of the conference was to identify relevant areas of cooperation on climate change in the Barents Region in a light of updated knowledge			
Energy efficiency Centers in NW Russia	Established as focal points for energy efficiency in the period 1996- 2004 in Kirovsk, Murmansk, Arkhangelsk, Petrozavodsk, Syktyvkar og Naryanmar	The centers in cooperation with relevant authorities, multilateral initiatives and financing	Improved use of the competence and synergies under discussion Relevant projects in energy efficiency and renewable energy	JEWG
Follow-up the new mandate of the BEAC JWGE from 2009. Strong focus on energy efficiency and renewable energy	The co chairs of the BEAC JWGE will discuss follow up	All relevant entities in the BEAC region and participants in the BEAC JEWG	Under discussion in the BEAC JWGE autumn 2010	JEWG

Annex II

The Finnish government has presented a climate policy National Strategy for Adaptation to Climate Change, It was launched in 2005 as an independent section of the National Energy and Climate Strategy. The aim of the Adaptation Strategy is to reinforce and increase the capacity to adapt to climate change and to mitigate the costs to the society. The Strategy describes the impacts and potential adaptation measures by sectors up until 2080. Measures were outlined for altogether 15 different sectors.

The Russian Federation has also presented a climate doctrine. It was launched in April 2010. The Swedish government published in March 11, 2009, An Integrated Climate and Energy policy.