Barents Euro-Arctic Regional Council

Regional Working Group on Environment

Action Program
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THE BARENTS EURO-ARCTIC REGION (BEAR)

The Barents Euro-Arctic Region (hereinafter BEAR) was founded at the Conference of Foreign Ministers in Kirkenes on 11 January 1993. Attending were the foreign ministers of Denmark, Finland, Iceland, Norway, Russia and Sweden and a representative of the Commission of the European Community. Also present were observers from the USA, Canada, France, Germany, Japan, Poland and Great Britain. According to the final declaration of the conference, the objectives of the BEAR are:

- to promote sustainable development in the Barents region with a view to the principles of Agenda 21 and the Rio Declaration.
- to act as a forum for cooperation within the areas of economics, trade, science, technology, tourism, environment and infrastructure, for educational and cultural exchange and for special projects with the aim of strengthening the position of indigenous peoples.

To establish a central working program and to follow up on environmental cooperation, the Barents Council established a special working group (task force). The later ministerial meetings on Barents cooperation (Bodö 1994 and Rovaniemi 1995) stated that environmental cooperation should emphasize:

- prevention of radioactive pollution and increased alertness to the threat of nuclear catastrophes
- harmonization of environmental standards and guidance in the region
- reduction of pollution from industrial enterprises
- protection of nature, flora and fauna
- cooperation between local and regional authorities

The ministerial meeting held in Oulu in 2000 emphasized people-to-people cooperation as a means of promoting environmental commitment and the integration of environmental concerns in the work of other sectors, such as energy, economy and health. The meeting also stressed the need to follow up on the investment projects identified in the NEFCO/AMAP report. It further pointed out that special attention should be given to the indigenous peoples of the region.

The 2003 ministerial meeting in Umeå expressed concern that contamination and pollution continue to pose serious threats to the environment and health in the Barents Region. It welcomed the recommendations in the updated NEFCO/AMAP report and called for actions to eliminate the "hot spots" identified in the report within 10 years.

THE REGIONAL COUNCIL

Responsibility for cooperation on the regional level lies with the Regional Council, which consists of political and administrative leaders in the regions. The Council has appointed special working groups to support its work, of which there are six at present: Information Technology, Communication, Culture, Environment, Youth and Education. Adding to these the Working Group on Indigenous Peoples, there are a total of seven working groups

that report to the Council. The Council prioritized the following areas for environmental cooperation and development within the Barents in the period 2004-2006:

- Cleaner production
- Water
- Biodiversity
- Nuclear safety
- NEFCO / AMAP hot-spot list

THE REGIONAL WORKING GROUP ON ENVIRONMENT (RWGE)

The RWGE consists principally of environmental officers in charge in the regions. The group is responsible for program work and expert cooperation and functions as an advisory body in the initial and evaluation phases of projects. The history of the RWGE can be seen in terms of four milestones.

The first milestone occurred in 1993, when the RWGE was established by the Barents Regional Council. Today, the Working Group represents 13 regions.

The second milestone was the period encompassing the later ministerial meetings on Barents cooperation (Bodö 1994 and Rovaniemi 1995), which articulated the new action program for environmental cooperation in the Barents. The first action program of the Regional Working Group on Environment was introduced in 1997 based on the declarations of the ministerial meetings. The program listed a wide range of priorities:

- Marine environment
- Radioactivity
- Acidification, heavy metals
- Biodiversity
- Management of natural resources
- Human health
- Increased environmental consciousness and influence

The third milestone was the publication of the first version of the NEFCO / AMAP hot-spot list. The RWGE participated in drawing up the list and provided comments regarding project implementation. Despite this involvement, the activity of the group began to fade at the end of the 1990s.

After a restructuring of the working groups under the Regional Council, the RWGE was re-established in Murmansk on 14 March 2001 as one of six regional working groups. This can be considered the fourth milestone. The Barents 2010 project, which included water and biodiversity components, began in 2004. The environmental part of the project produced an action plan based on an analysis of water quality and biodiversity in the Barents as a basis for future development. The results of the Barents 2010 project, which ended in 2006, are used in this action program.

STRATEGIC ISSUES FOR THE BARENTS REGIONAL WORKING GROUP ON ENVIRONMENT

It would hardly be possible to cover the range of tasks that fall within the framework of BEAR's environmental work in any meaningful way. Instead priority must be given to the strategically most important areas and the work must be closely integrated nationally and internationally.

The main tasks of the Barents Regional Working Group on Environment are:

- to act as a network for environmental authorities in the Barents region
- to see to it that environmental issues in the region are continuously taken into consideration and given priority on the national and international levels.
- to initiate a survey and an assessment of the most urgent problems and of the areas having the best prospects for regional cooperation
- to strengthen public awareness and knowledge
- to promote local and regional competence to engage in environmental work on the international level
- to develop cooperation and the exchange of information between international and regional committees
- to strengthen and develop regional environmental cooperation in the establishing of networks by specialists/administrative authorities/commerce and industry
- to improve the exchange of information and know-how between the different regions
- to work for local and regional administrative authorities to be given the means and the power to control ecologically harmful activities
- to make suggestions regarding environmental questions to other regional working groups, the Barents Euro-Arctic Council Working Group on Environment (WGE) and the CP taskforce of the WGE
- to strengthen the cooperation between national (WGE) and regional level (RWGE) in environmental cooperation

ACTION PLAN

A regional action plan is naturally problem oriented and aimed at issues essential to the region within a relatively short time frame. The plan therefore involves choices and a focus on the most urgent problems. At the same time, long-term objectives must not be forgotten. Accordingly, the direction chosen by the environmental group is a mixture of short - and long-term concerns and measures that are future oriented and can be implemented within a reasonably short period of time.

The status of the environment in the Barents varies a great deal. In light of the national environmental monitoring programs and the extensive AMAP reports, one can make the rough generalization that the environmental situation in the Nordic part of the Barents is quite good. There are still some problems but because of a long history of pollution control, quite modern environmental legislation and the Nordic countries' reasonably good economic situation, pollution is not a serious, immediate risk to nature or human health. The environmental problems are mostly concentrated in the Russian Barents, an area where the state of the environment varies considerably.

The action plan has been divided into the following principal items:

- Surface and drinking water
- Biodiversity
- Management of natural resources
- Information and building of public awareness and knowledge

Realization

Concrete project proposals on environmental issues can be incorporated in the overall Barents program worked out annually by the Regional Committee. Projects may be bilateral or multilateral. There are special agreements on bilateral cooperation on both the national and international levels.

In a meeting held in Bodö on 26-27 April 2005, the RWGE decided to concentrate on the implementation of strongly prioritized projects in the Russian Barents. The representatives of the relevant areas were asked to propose one or at most two projects per area. Project proposals submitted to the RWGE must meet the following requirements:

- The project must have a positive impact on the environment and/or welfare of the local population.
- The project must be realistic in scale and in its financial needs.
- The project can be carried out in a rather short time frame.
- The solutions proposed by the project have been tested in practice and are viable.

Unfortunately, there are no special financial means available for implementation of the Barents program. Projects may ultimately be financed by various EU programs, bilateral cooperation programs, international financing bodies, etc. Active participation of the Russian counterparts in project preparation, implementation and financing is of vital importance.

1 Surface and drinking water

1.1 Background

Where the state of natural waters is concerned, the most important environmental issues are acidification, heavy metals and POPs in the Russian Barents region. All these threats are connected with industrial emissions. Because of insufficient purification of municipal wastewaters, eutrophication and hygienic pollution also cause severe problems. In the Nordic part of the Barents region, purification of wastewaters and industrial emissions is quite effective and environmental problems are usually very local. In practice non-point loading is the most challenging problem the area. The state of the waters is considered to be mostly good or excellent, although in some small areas it can be worse. The drinking water systems are also in a good state and safe.

There have been several studies and publications in the AMAP process concerning acidification (AMAP assessment Report: Arctic Pollution Issues, 1998), heavy metals and POPs (Arctic Pollution, 2002). A number of northern research projects were also implemented in the late 1990s. The results of the monitoring and research carried out in the 1980s and in the beginning of 1990s in freshwater ecosystems showed that pollution

causing biological damage would continue if emissions were not reduced. However, a decrease in sulfur and heavy metal emissions has been observed in the Barents and in Europe in the 1990s. The process of acidification has been slowed and even stopped in some areas (e.g. Finnish Lapland) in recent years, but there are still acidified lakes in the region and episodic acidic pulses occur during the spring flood period.

Sulfur compounds are especially troublesome as they are the most significant pollutants and are mostly released by human activities, such as heavy industry and energy production. Nitrogen compounds (from combustion and agriculture) also greatly contribute to acidification, although their impact here in the North is more limited. Both sulfur and nitrogen build up compounds that have their biggest environmental impact near the source of emission, but pollutants that are found farther away also figure in the total environmental burden.

The pressure on the environment from heavy metals is also often connected with sulfur dioxide emissions. In general, heavy metals and alkali pollutants contaminate areas around the sources of pollution (mainly within 200 kilometers), whereas acid sulfates can spread over long distances. The main heavy metal pollutants in the Barents region are nickel and copper but other metals as well are released into the environment. Fallout from airborne mercury is the latest known threat to the Arctic environment.

The group of persistent organic pollutants (POPs) includes a large number of organic chemicals posing potential environmental hazards. Examples of POPs are PCB and DDT. POPs can drift long distances and reach the Barents area from far away. To date, the POP levels in the freshwater ecosystem have not been studied very much in the Barents. Trends are thus difficult to determine but the presence of POPs can be measured especially in the Russian Barents.

There is evidence to confirm that the inhabitants of many parts of the Russian Barents are exposed to hazardous pollutants in drinking water. The availability of good drinking water is an important consideration. In the Russian Barents, drinking water is usually taken from the surface water and purification is often limited to chlorination. Many surface-water supplies are clearly influenced by air- and water-borne pollution. Another important question is the replacement of drinking water piping systems. Improved drinking water quality would very quickly improve the health of most of the region’s population. Infants are the most vulnerable group.

Because of the evident ongoing climate change, the risk of severe flooding is increasing in the whole Barents area. River valleys are traditional places for settlements in all northern areas, whereby the risk of flood damage, especially in the future, is more and more obvious. The benchmarking and harmonization of hydrological monitoring and forecasting methods could be very fruitful. The exchange of information about flood control and prevention practices will also be important.

1.2 Activities

Considering that environmental pollution poses a heath risk to the population in the Russian Barents, it is necessary to reduce emissions to a level below the critical loads and continue the positive progress of decreasing emissions; this is the only way to improve the state of the environment. Reducing acidifying emissions will alleviate several other

environmental problems, e.g., heavy metal pollution, and the impact would stabilize at a safe level vis-à-vis the actual rate of acidification.

The ground water project already launched must be enlarged into a full-scale study dealing with the supply of drinking water to a small town. The first part of the study should include a technical and financial survey and suggest a suitable site. The second phase should be aimed at the full-scale implementation of the project and an assessment of its effects.

The most important areas of regional cooperation are:

- harmonizing water quality and water ecology monitoring programs, especially in transboundary areas
- harmonizing and developing common hydrological monitoring and flood forecasting methods in the Barents
- implementing ground-water based, small- and medium-scale drinking water projects in the Russian Barents
- increasing the quality assurance level of the water quality monitoring laboratories in the Russian Barents
- transferring knowledge on small-scale municipal wastewater purification technologies to the Russian part of the Barents

2 Biodiversity

2.1 Background

The UN conference on environment and development (UN-CED) held in Rio de Janeiro in June 1992 adopted the Biodiversity Convention. Ten years later, in 2002, at the UN Summit Meeting in Johannesburg, the environment and development were again put on the agenda. Attention was drawn to the high degree to which biodiversity had decreased and the participating countries committed themselves to a significant reduction of this loss.

The Barents region is a large area with many similarities in its natural ecosystems and in the composition of species; the ecosystems are young, with a limited number of species (although the number of individuals in a given species can be high) and simple ecological conditions. These factors make nature in the Barents vulnerable to environmental changes.

Compared to the rest of Europe, the Barents region has little technical interference. This applies especially to the northern and eastern part of the region, where one finds the largest continuous wilderness areas in Europe. These areas are important habitats for flora and fauna but at the same time have extensive and important resources for the development of societies and economic life.

Throughout the Barents there has been an extensive designation of protected areas but large biodiversity values can also be found outside these areas. Sustainable development in the region requires attention to environmental considerations outside the protected areas. This applies to land, lakes/rivers and the sea.

The foundation for good biodiversity conservation is knowledge of the area. Many institutions and organizations are working on assignments/projects dealing with

biodiversity. The knowledge gained needs to be collected and made available, and it seems that there is a need for coordination and information exchange between the different actors.

Forestry is the industry that requires the largest areas. How forestry is carried out and how areas with high biodiversity values are taken into consideration are important issues. The model forest project "Silver Taiga" in Komi is very interesting as it has developed forestry operation models that give extensive consideration to biodiversity and sustainable use.

Other business actions that are likely to influence biodiversity are oil and gas exploitation, mining and the development of infrastructure. The large wilderness areas in the Barents have a considerable potential for development of tourism, yet tourism can pose a potential threat to biodiversity. Further, traditional fishing and the need for food have resulted in reduced fish stocks in several rivers.

It is important to develop information and knowledge regarding not only biodiversity but also how trade can give the necessary consideration to biodiversity on a daily basis, one example being the work of the Silver Taiga foundation. The foundation for the development of a sustainable society is that local inhabitants be taken into account in recognition of the knowledge that they possess.

2.2 Activities

Due to this situation, the Regional Working Group on Environment suggests that the following actions and initiatives be taken:

Building of networks

- Further development of networks between environmental management, environmental NGOs and natural science institutions

Information and knowledge distribution

- Production of maps that show the protected areas in the Barents region
- Joint web page (for example, under the Barents.info site) with links to projects/actions dealing with mapping of biodiversity/other biological factors in the Barents region
- Improved dissemination of information regarding model forest projects
- Contribution of a red book with data on the most endangered species in the participating countries

Other actions

- GAP analysis: mapping of old-growth forest and important unprotected habitats for flora/fauna and an evaluation of which are the most important
- Nature-based sustainable tourism (eco-tourism)
- Involvement of the environmental sector in the projects/actions of other sectors (forestry projects, education, etc.)

3 Management of natural resources

Environmental protection in industry is governed by legislative and administrative means. Authorities have established limits and conditions based on national and international

norms for the opening and certification of industrial enterprises. In this way, air and water emissions can be significantly minimized and waste treatment can become more effective. Certification is going to be an important means of control in the future.

The disadvantage in long-term conditions is that industry is not encouraged to expand environmental activities, which can have technological consequences. One way in which we may eliminate such disadvantages is to apply economic measures, e.g., emission taxes or requirements that BAT (Best Available Technology) should be used in every case. Industry should pay attention to not only the environmental damage that occurs during production but also the environmental damage that the finished product causes during its life cycle (LCA). The manufacturer should also be responsible for taking care of used products and for how the product is used. To do so a company should display a keen interest in environmental protection and become involved in measures to that end. Environmental consciousness should be a natural part of the operation of the whole organization. It is important to update institutional and administrative capacity when a new technology is introduced.

During the introduction phase, the emphasis should not be put on investment projects. Sector responsibility should be developed and environmental consciousness introduced in various sectors of the economy and administration.

3.1 Forestry

3.1.1 Background

Forests are an important resource for employment and economic development in most of the Barents region. They are particularly important for economic life in the northern parts of Sweden and Finland and in Karelia, Arkhangelsk and Komi.

In the global economy, efficiency is regarded as a key factor in competitiveness and in being able to develop profitable forestry. At the same time, we know that there are increased demands for sustainable production methods from the customers; these demands also apply to the production of paper and wood.

Out of consideration for the environment, it is important that forestry be developed in a way that protects the environment and the humans that live in the areas concerned. Doing so will also meet customers' demands.

The forestry industry itself is responsible for sustainable forestry. In addition, the state is responsible for areas that are graded as very important for biodiversity when protection is recommended.

3.1.2 Activities

In light of the above considerations, the Regional Working Group on Environment suggests that the following actions be taken in the respective sectors:

Forestry:

- Forestry has to be carried out in accordance with the certification systems

- Cooperation between the forestry sector and the local residents must take the necessary local circumstances into consideration

Research and education:

- Make information available for forestry
- Develop educational programs for forestry that place an emphasis on biodiversity and cooperation with local residents

Environment:

- See section 2 “Biodiversity” with suggested actions.

3.2 Oil and gas industry

3.2.1 Background

Operations of the oil and gas industry at sea require special consideration of the environment, as they are located in sensitive areas of great importance for biological systems and fishery. During exploration, the environmental threats of oil and gas include seismic-like uncontrolled blowouts. In the production phase, the threats are drilling mud in new wells, the release of production water (with pollutants) and the release of VOCs into the air. Transportation of oil and gas products may also pose risks to the environment.

Land-based oil and gas exploitation is carried out in a vulnerable environment. The release of pollutants and blowouts connected to test drilling and operation can contaminate both ground and surface water with considerable consequences for human inhabitants and the environment. Land areas may also be affected.

3.2.2 Activities

The RWGE will be working to collect data regarding biodiversity in the sea and other vulnerable habitats for birds that may be influenced by oil and gas exploitation. This work will provide a foundation for the oil and gas industry's own efforts. Based on this information, the RWGE will also give advice regarding areas that need special environmental consideration during the test and production phase. The information gathered and the advice presented should be made available to the public.

The RWGE has to gather data on important ground and surface water resources as well as on important environmental sites along watercourses that might be impacted by oil and gas exploitation. These data should be made available to the oil and gas industry so that it can take the necessary environmental measures and should be accessible to the public as well.

3.3 Minerals and Mining

3.3.1 Background

The mining industry has been a distinctive component of life in all parts of the Barents Region for the whole of the industrialized period and can be expected to remain one of the most significant motors for economic development in many parts of the region in the future as well. At the same time, mining operations and related industries pose a serious threat to the extremely sensitive sub-arctic nature in which they operate and thus require a precautionary approach in all phases of operation - permitting, design and planning, management and control, and closure.

At the moment, the mining industry in the Barents Region is developing: growing demand has increased the production rates at many sites and new technologies enable short-term operations and the extraction of relatively small deposits. Many companies pay more attention to environmental issues by introducing environmental management systems, or even making investments to reduce emissions into air or discharges into water. Meanwhile, other mines are closed down, leaving open wounds in the bedrock where natural processes cause unnatural migration of substances, threatening sensitive eco-systems. The closure of old or unprofitable mines is a growing problem in the Barents region and deserves attention from both the legislative and technological point of view.

Another common tendency is that the interest in training within the mining and metallurgical sector is declining both in the Russian and the Nordic parts of the Barents Region, limiting the long-term recruitment base for enterprises and authorities.

Given that mining is a significant industry in most areas of the Barents Region, there is a good base of competence in universities and research institutes as well as in enterprises and authorities to manage the environmental problems identified. This joint competence and knowledge is probably the best instrument for solving the environmental problems in the Barents Region.

3.3.2 Activities

The RWGE recognizes that the minerals and mining sector is a major source of negative impact on the environment but, at the same time, a field of common interest and competence for all four Barents countries. Mindful of this, the Working Group believes that increased and conscious networking of the different actors of the sector throughout the region in certain joint action programs would be an appropriate way of channeling the positive forces of the sector to benefit the environment while stimulating development and joint co-operation in general.

Such a joint action program could be built up around the following two components:

Environmental Legislation and Cooperation between Authorities
A first proposal is that a long-term program be set up for the transfer of methodological competence and experience between regional authorities that regulate mining and environmental issues in the Barents.

The first step towards this end would be to hold a series of joint seminars and other educational activities for the exchange of methodological experiences and the identification of necessary legislative and administrative changes. These would be arranged by the regional authorities but would include the pertinent central authorities and have the support of the relevant scientific and other partners. Proposed themes are:

- General principles in permit granting and control of mining and metallurgical activities
- Implementation of the Best Available Technique (BAT) approach in the permitting procedure and control activities
- Limiting historical responsibility of the environmental harm caused by mining operations. How can one draw the limit between enterprise responsibility and state responsibility for environmental damage occurring under different economic and political circumstances? (baseline studies, etc.)
- How can the environmentally acceptable conservation of closed mines be ensured? How can responsibility for the whole lifecycle of the mine be included in the permit?
- How can regulatory bodies stimulate the management of mining and metallurgical enterprises?

Research, Development and Education
The cooperation within R&D and education that already exists between universities and research centers in the Norwegian, Swedish, Finnish and Russian parts of the Barents would provide a good base for strengthening the mining sector's capacity to cope with environmental problems. Some fields to be included in such a program are:

- Intensified co-operation and exchange programs between universities with educational programs related to the environment and mining
- Development of technologies, standards, etc., for mine closure
- Development of safe deposition of mining waste and monitoring and supervising of tailings dams
- Utilization of waste rock for, e.g., road construction

Activities carried out within the field of R&D and education could in many cases be combined or coordinated with activities forming a part of the cooperation between authorities. When appropriate, activities of other sectors, e.g., within support for SMEs,

could be coordinated with activities aimed at the development of new technologies for environmental protection in the mining and minerals sector. In particular, the outcomes of WG2 of the Barents 2010 project could serve as good guidance for the ideas already discussed and supported by experts in the Region.

4 Increased environmental consciousness and influence

4.1 Background

Action plan Agenda 21, approved at the UN Conference on Environment and Development in 1992, dealt with the increase in the general level of environmental consciousness as well as questions of strengthening the influence of different societal groups. It is necessary that we understand what our environmental goals are. The means available are:

- Education, especially occupational education that can help achieve the goals set.
- Non-official groups should take part in working out environmental decisions, especially as these decisions concern the societies where those groups work and live.
- The roles of women, youth, indigenous populations, employees and trade union groups should be strengthened.
- The influence of non-governmental organizations should be developed.

The participation and cooperation of local authorities is crucial in fulfilling environmental goals. By environmental consciousness we mean a desire and ability to live and act at home, at work, on holiday and in different social functions to achieve sustainable development. The scope of environmental consciousness is very large.

Environmental knowledge has increased in recent years, bringing to the fore different viewpoints on environmental issues in social debate and the mass media. However, we cannot say that this will automatically lead to everyone embracing an environmentally sustainable living standard.

Environmental consciousness must first of all be explained and accepted if it is to influence behavior. But consciousness only is not enough. We also need changes in values and attitudes. Our choices in different situations may be deliberate or non-deliberate. Increased environmental consciousness must be transformed into concrete activities. There is a gap between people's knowledge and environmental consciousness, on the one hand, and their ability to turn it into practical and concrete activity, on the other.

4.2 Activities

The environmental consciousness of the people, enterprises and authorities in the Barents region should be increased and possibilities for different social groups to engage in active environmental cooperation should be developed. Other problems similar to environmental awareness are knowledge of and pride in the nature of the region.

In the first phase, environmental consciousness of the above-mentioned actors can be increased by making it easier for them to learn about environmental issues in the region.

Examples of relevant concrete measures:

- Environmental conferences in different sectors
- Working out and disseminating information on the environmental status of the Barents region
- Exchanges of students and officials
- Cooperation with non-profit environmental organizations
- Effective use of mass media
- Environmental concerns should be taken into account in twin cities' cooperation.
- Local initiatives involving the local population should be supported in accordance with the recommendations of Agenda 21