

2000

Arctic Marine Pollution

Proposals for Nordic Initiatives

Danish Environmental Protection Agency

Danish Ministry of Environment and Energy

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Preface

At the Nordic Council's session in November 1998 the Prime Ministers of the Nordic countries and the leaders of the three autonomous areas agreed to request the Ministers for the Environment to increase their focus on the marine environment problems. The Danish Prime Minister offered to hold the first meeting on this issue. It was scheduled for May 12, 1999 in connection with the meeting of the Working Group on Sea and Air.

The Danish Environmental Protection Agency has prepared this report for the deliberations of the meeting of the Working Group on Sea and Air. The report is intended as background material for the group's discussions concerning the initiative of the Nordic Prime Ministers and the leaders of the three autonomous areas.

Furthermore, according to the programme of the Icelandic Presidency of the Nordic Council of Ministers in 1999, the Icelandic Presidency intends to focus on strengthening the Nordic pillar of environmental cooperation in the northern and western regions of the Nordic countries. Under the Nordic pillar the sea is a current topic. This marine focus clearly appears from the Nordic Council of Ministers' 1999 cross-disciplinary programme. All aspects of the relationship between Man and ocean and the exploitation of marine resources should be reviewed, especially **pollution**, protection of ecosystems, sustainable fisheries, etc.

It is proposed that the conclusions of the meeting, together with the report, be submitted via EK-M (the Committee of Senior Officials on Environmental Affairs) to the Icelandic Presidency, to be incorporated in the Presidency's considerations of the **aspect of marine pollution**.

This report contains a number of ideas for possible Nordic initiatives. In this connection it should be mentioned that the proposal or implementation of these ideas do not necessarily reflect Danish views. The report should be viewed as a catalogue of ideas as an attempt to

identify gaps in the protection of the Arctic marine environment.

Executive summary

This report comprises five chapters.

The first is a brief description of the background to the report and to the meeting scheduled for May 12, 1999 in connection with the meeting of the Working Group on Sea and Air. It appears that the Nordic Prime Ministers and the leaders of the three autonomous areas took the initiative to hold this meeting during the session of the Nordic Council in Oslo on November 9, 1998.

Chapter 2 outlines the mandate as interpreted by the Danish Environmental Protection Agency. The mandate is limited to marine pollution only and excludes financial and resource-specific considerations, as well as biodiversity and fisheries concerns.

Chapter 3 describes the state of the Arctic environment based on AMAP's evaluations and groups of pollutants: POPs, heavy metals and radioactive material, as well as oil and PAHs.

Chapter 4 describes the existing conventions, agreements, etc. related to marine pollution.

Please be advised that this chapter exists only in a Danish version.

Chapter 5 summarizes the ideas which might be promoted by the Nordic countries within the framework of the various conventions and agreements.

The report should be viewed as a catalogue of ideas which does not necessarily reflect Danish views. The Environmental Protection Agency suggests that supplementary proposals for future Nordic initiatives be submitted at the meeting.

The focus of the report is on a description of various global and regional conventions and agreements, and possible Nordic initiatives in these environmental fora.

The proposals are primarily political, based on well-known principles such as the Precautionary Principle, the Polluter Pays Principle, BAT/BEP, sustainable development, etc.

Implementation of most of the proposed Nordic initiatives outlined in Chapter 5 will require substantial resources and a policy stance. If endorsed, a number of these proposals will require amendment of existing international conventions and agreements or preparation of new international instruments. However, the Danish Environmental Protection Agency has found that any implementation and prioritization or rejection of the proposals should be undertaken by EK-M.

Against this background it is proposed that the Working Group on Sea and Air review the report and suggest any supplementary future Nordic initiatives. The report should then be submitted to EK-M for resolution.

1 Background

In connection with the Danish Prime Minister's visit to the Faroe Islands in mid-September 1998 the leader of the Faroese Home Rule (Løgmaður) informed the Danish Prime Minister that a report had shown that Faroese pilot whales had a high content of mercury and particularly PCB. The report showed that the level of heavy metals measured in Faroese children was above average, which was attributed to the relatively high proportion of whale meat in the diet of the Faroese people. In this connection the increasing marine pollution, documented by e.g. AMAP in its State of the Arctic Environment Report (SOAER), was also mentioned.

During the session of the Nordic Council in Oslo on November 9, 1998 of the five Prime Ministers and the leaders of the three autonomous areas, the Faroese Løgmaður followed up on the concerns regarding increasing marine pollution. It was widely agreed to recommend the Nordic Ministers of the Environment to review in detail the international regulation of chemical substances in the sea. The Danish Prime Minister offered to take the initiative for a first meeting on this issue, which was welcomed by the Nordic leaders.

Against this background the Danish Ministry of the Environment and Energy was commissioned to take the initiative to ensure that the issue of marine pollution was raised in the Nordic forum. At a meeting of the Working Group of EK-M (the Committee of Senior Officials on Environmental Affairs) under the Nordic Council of Ministers on January 11, 1999 it was agreed to hold a meeting in connection with the meeting of the Nordic Working Group on Sea and Air on May 10-11, 1999 in Denmark in order to discuss the concerns of increasing marine pollution.

The Icelandic Presidency of the Working Group on Sea and Air endorses the proposal to extend the meeting of the group by one day, i.e. May 12, 1999. The conclusions from the meeting are to be submitted to EK-M with a proposition to submit the working paper to the

Presidency of the Nordic Council of Ministers (Iceland) for further action after discussion and adoption in EK-M.

2 The mandate, including delimitation

On the basis of an overview and a short description of the state of the Arctic environment the Danish Environmental Protection Agency has evaluated existing conventions, agreements, etc. concerning marine pollution. In the light of this evaluation, the Environmental Protection Agency has identified gaps and submitted proposals to the Nordic Working Group on Sea and Air concerning the implementation of Nordic measures to improve the state of the Arctic marine environment.

In this report the Arctic region is as defined by AMAP, cf. Annex A.

This report does not take into account financial or resource-specific considerations.

This report excludes protection and preservation of species and habitats (biodiversity), fisheries concerns and agreements concerning efforts to combat oil and chemical pollution of the sea.

Scientific surveys, the documentation of the various proposals or implementation of national measures to contain local pollution are not included in the report.

The report furthermore excludes matters relating to reporting and implementation, nor does it include an evaluation of any overlapping in the work concerning the various conventions and agreements.

3 Brief overview of the state of the Arctic environment

There is general agreement that the Arctic marine area and its flora and fauna are relatively unpolluted compared to other marine areas. Most of the biological production takes place in the upper 200 metres. This layer is dominated by inflowing water from the Atlantic Ocean. This inflow and the inflow from the Pacific Ocean together constitute 98% of the input, while rivers account for the rest.

There are two important exceptions to the statement that the Arctic marine area is relatively unpolluted. The first is substances which in seawater may accumulate from low concentrations to raised concentrations in plants and particularly in animals due to special pathways and subsequent bioaccumulation. These substances are primarily POPs and mercury which are often transported at long range from the northern hemisphere.

The other exception is local sources or sources with emissions to the Arctic environment, particularly in the Russian part of the Arctic region. In many cases identification of sources is a prerequisite for combating such contamination.

The following groups of pollutants have been found in the Arctic marine environment in concentrations requiring action: POPs, heavy metals, radioactive material, oil and PAHs.

These substance types or groups require action because in certain cases they threaten the Arctic flora and fauna, and because of their adverse impact on the health of groups of people with a large proportion of marine foods in their diet. However, scientists agree that any negative effects of the traditional Arctic diet are offset by the positive elements of the diet.

POPs: present and historical use of POPs (persistent organic pollutants) in the northern hemisphere is the main source of these substances in the Arctic marine environment. Raised POP levels have been found at several locations north of Canada, at Svalbard, Eastern

Greenland and in the Barents Sea. However, the POP levels in Arctic marine animals are generally lower than in comparable animal species from temperate regions. Nevertheless, the content of PCB and dioxins/furans in a number of Arctic marine mammals and birds is at or above known impact levels. The distribution of pollution in the Arctic environment clearly illustrates the importance of components transported at long range. A general effort to combat long-range transmission of POPs, and a more targeted effort against local sources, are thus required.

Metals: heavy metals are a natural element of the marine ecosystem, but they are also added from human activities. The primary causes of concern in the Arctic environment are mercury (Hg), as well as cadmium (Cd) and lead (Pb). Mercury is carried in the air or in sea currents from the industrialized areas in temperate regions. In general the metal levels in Arctic marine areas are at the background level, except near local sources. However, in many parts of the Arctic region the cadmium levels in marine organisms exceed the global level, while the mercury levels are high, but not above the global level. This is a problem for the groups of people with a high intake of marine foods. In the Russian area in particular raised levels of heavy metals have been found locally.

Radioactive material: radioactive contamination of the Arctic area is low, but present and historical activities entail a risk of large-scale future contamination. The primary sources of the present pollution are fallout from past nuclear weapons tests and European reprocessing plants. The latter's emissions have decreased, although new releases of Technetium-99 from Sellafield in the UK are a cause of concern. Two potential future sources are nuclear reactor accidents - in connection with daily operation or handling of waste - or leakage from waste stored on dry land or from dumped reactors or waste. The latter applies particularly to the Kara Sea.

Oil and PAHs: with the exception of areas with local permanent impacts or areas affected by oil spills the input of oil in the Arctic marine environment is low, and no ecological damage has

been established. The highest levels are found at estuaries. Furthermore, a certain amount of oil is transported at long range, particularly in the atmosphere. Raised PAH levels have been found at several locations in the Arctic marine environment.

Although the Arctic marine areas are generally less polluted than other marine areas the discoveries of raised concentrations of POPs as well as cadmium and mercury threaten the peoples with a large proportion of marine foods in their diet.

5 List of keywords for the proposed future Nordic initiatives

5.1 International marine pollution conventions

5.1.1 The MARPOL Convention

- Ratification of annex VI on air pollution from ships
- Designation of the Arctic as a special area under MARPOL in relation to annex I, annex II and annex V
- Preparation of a new annex on replacement of ballast water
- To move forward the deadline for phasing out of stanniferous antifouling paints
- Ratification of annex IV on sewage

5.1.2 The London Convention

- Ratification of the 1996 protocol to revise the London Convention
- Reduction of the categories of waste to be dumped
- Amendment of the Convention to include inland waters
- Global convention or agreement on emissions and other environmental impacts from offshore installations
- Global ban on dumping of oil rigs

5.2 Regional marine environment conventions

5.2.1 The Helsinki Convention

- HELCOM as a spearhead in other fora
- The Baltic region as a benchmark region in the protection of the marine environment

5.2.2 The OSPAR Convention

- Quick implementation of the resolutions of the Conference of Ministers in 1998
- Phasing out of emissions of environmentally hazardous substances and radioactive material
- Reduction of emissions of nutrient salts
- Intensified effort against emissions from offshore activities
- Expansion of the geographical area of the Convention to include the USA, Canada and Russia

5.2.3 The Working Group on Sea and Air under the Nordic Council of Ministers

- To expand the group's role as an international coordinator

5.2.4 The North Sea Conference

- Follow-up on and implementation of the resolutions of the Fourth North Sea Conference
- A coordinated and targeted Nordic effort to promote priority areas at the Fifth North Sea Conference

5.2.5 The PAME RPA (Regional Programme of Action on Marine Pollution from Land-based Activities)

- Preparation of an Arctic marine environment convention
- Ban on emission of hazardous substances, including radionuclides, to the marine environment in the span of one generation (25 years)
- Designation of the Arctic marine environment area as a special area
- Ban on dumping, with the exception of dumping of dredged material, in the Arctic region
- Presentation of joint Nordic initiatives in international environmental fora to draw attention to the importance of protecting the vulnerable Arctic marine environment

5.3 Conventions, agreements, etc. of importance to the protection of the marine environment

5.3.1 The Geneva Convention (LRTAP) with Protocols

- Ratification of the protocols
- Implementation of the protocol provisions, even though the protocols have not entered into force
- Preparation of new protocols

5.3.2 The POP Convention (International Convention on Phasing Out and Regulation of Persistent Organic Pollutants)

- Active participation in the preparation of the convention
- Implementation of the provisions of the convention, even though the convention has not been completed or entered into force
- Proposal to include other POPs in the provisions of the convention

5.3.3 AMAP - Arctic Monitoring and Assessment Programme

- Preparation of the framework for an overall AMAP strategy
- Identification of specific pollution containment projects, particularly as regards Arctic Russia

5.3.4 Baltic Agenda 21

- Preparation of an Arctic Agenda 21 on the basis of Baltic Agenda 21

5.3.5 The Barents Euro-Arctic Council

- To promote environmental projects in Northwest Russia

5.3.6 The EEA Convention (ESPOO)

- Ratification of the ESPOO Convention