

# Executive summary

The Barents Sea is a unique Arctic marine ecosystem, characterised by distinct bathymetry and bottom topography, a large oceanic shelf, an extensive polar front, high productivity, and a high abundance and diversity of flora and fauna. The majority of the Barents Sea drainage basin is located in Russian territory, with small parts located in Norway and Finland. As the meeting point between the Atlantic and the Arctic Oceans, and Western Europe and Russia, the Barents Sea has attracted significant attention from many politicians and researchers, who are interested in its biological resources, its oil and gas reserves, as well as the potential risks of radioactive pollution.

The most pressing issues for the Barents Sea ecosystem were identified as the overexploitation of fish, oil spills, radionuclide contamination, and the modification of ecosystems by invasive species. Overexploitation of fish was considered as the most important issue since the major commercial fish stock (cod and haddock) are exploited beyond safe biological limits. Currently, the impacts of pollution by oil spills and radioactive wastes remain slight. However, due to the expansion of the oil and gas industry in the region, as well as increased shipments of oil and gas through the Barents Sea, the risk of accidental oil spills is likely to increase in the near future. There are also apprehensions that storage facilities for radioactive wastes could result in radioactive contamination of the environment, as the Murmansk Region houses more radioactive wastes than any other region in the world. With respect to the modification of ecosystems, there are concerns that the invasive Red king crab will compete with native species for forage reserves, which could result in the decrease of commercial fish stocks of the Barents Sea. Another problem, linked to oil transportation, is the risk of unintentional introduction of alien species in the ballast water of oil tankers.

Causal chain analyses conducted for each of the four main issues illustrated clear links between environmental and socio-economic impacts, and described how factors such as economic incentives, governance arrangements, politics, and the lack of knowledge are often major root causes for the identified problems. The absence of effective

long-term plans and legislation was identified as a recurring root cause for many issues. A set of policy options for dealing with the issues of overexploitation, modification of ecosystems, and future threats from oil spills and radioactive contamination have been recommended. However, it should be noted that in practice, the implementation of the policy options will require a substantial amount of time and resources.

It is recommended that new regulations for different sectors should be adopted and enforced, along with rigorous adherence to existing international agreements. For example, there is a need for a long-term strategy for the handling and storage of radioactive wastes. With respect to fisheries, implementing and enforcing appropriate standards for fisheries management will require careful conflict resolution by the Joint Norwegian-Russian Fisheries Commission. Because parties have expressed commitments towards international agreements for the conservation and management of the marine environment, including the Convention on Biodiversity, the UN Fish Stocks Agreement, and the World Summit on Sustainable Development, it is assumed that the management of fisheries in the Barents Sea will improve over time.

*This report presents the results of the UNEP/GIWA Assessment for the Barents Sea region as concluded during four workshops. The first two workshops were conducted in Murmansk, Russia, in September 2001 and February 2002. In these two meetings, only Russian experts participated. Since a small part of the Barents Sea drainage basin belongs to Norway and Finland, partners were found in Norway on the recommendation of the Programme authorities, and the last two workshops were carried out with support from Norwegian partners, one in Tromsø, Norway, in February 2003 and the other in Murmansk, Russia, in October 2003. The Task team was made up of local experts having a wide and long-term expertise concerning the environmental and socio-economic impact assessment in the Barents Sea region. In their work, the experts used various data obtained from a wide range of different international programmes and projects carried out in the region. The results provided are based on the conclusions from the Russian Task team, with support from the Norwegian experts and other invitees.*