Senior Arctic Official (SA0) Report to Ministers

Tromsø, Norway, April 2009

1. Introduction: The Challenge of Leadership

The Arctic is a region with immense environmental assets and some of the last expanses of pristine nature and intact ecosystems on the planet. The Arctic is also rich in valuable natural resources, both renewable and non-renewable. It is now over ten years since the Arctic Council was established in Ottawa as a high-level forum for circumpolar cooperation, replacing the Arctic Environmental Protection Strategy (AEPS) that was established in Rovaniemi in 1991, with a mandate to continue environmental programmes while expanding its activities to include sustainable development issues. This broader mandate signalled a greater attention to the human dimensions of the Arctic, including cultural and socio-economic issues of particular importance to all who make this region their home.

Cooperation under the Arctic Council and integration of indigenous peoples' knowledge into these efforts has yielded results far greater than could have been achieved by each state alone. The Arctic Council brings together a broad network of policy makers, indigenous peoples' organizations, Arctic residents, scientists, and other stakeholders and as a result, an extensive knowledge base has been established and a range of concrete results have been achieved under the auspices of the Council. Perhaps the most significant progress has been made in the fields of pollution and climate change, but advances have also been made in the work on biological diversity, the marine environment and on issues relating to the social and economic development in the Arctic.

In a relatively short period of time fundamental changes have occurred in relation to the circumpolar North. Since the Arctic Council Ministerial Meeting in Salekhard, Russia in 2006 the perception of the Arctic as a globally important region in biophysical and geopolitical terms has taken hold. To a significant degree, this perception has been fuelled by a growing awareness of the extensive impacts on the Arctic of changes in climate and climate variability.

The Arctic is a region in which people have lived for thousands of years. The welfare of Arctic peoples and the sustainability of their communities are deeply affected by the forces of change that impact both traditional and modern ways of life and make the region increasingly accessible and more integrated with the rest of the Arctic states to which they belong and with the world at large].

The profound changes taking place in the Arctic create a dynamic with complex local, national, regional and global implications. For more than a decade, the Arctic Council has provided Arctic states, Permanent Participants and Observers with a forum for cooperation to better understand what is happening in the Arctic today; to build broad networks to assess and to respond to the emerging issues; and to plan constructively for the future. Increasingly, the emergence of the Arctic on a number of international agendas can be expected to result in calls for more vigorous forms of leadership from the Arctic Council.

The current structure of the Council has considerable flexibility to accommodate new priorities and demands. The challenge which now faces the Arctic Council is to reinforce its commitment to the Arctic in ways that allow its work to better inform policy development and actions, not only in the Arctic states, but also among the broad range of stakeholders with direct or indirect Arctic interests, including state and non-state actors. This challenge of leadership cannot be ignored, nor can it be taken lightly.

SAOs recommend Ministers to:

- ***Commit the Arctic Council, as a high level intergovernmental forum, to find ways to enhance its circumpolar and global leadership on Arctic issues and to expand and improve its cooperative mechanisms and processes in this regard.***

2. Meetings and Participation

The Arctic Council is a unique forum for cooperation between the Arctic states[1] and Arctic indigenous peoples' organizations which have the status of Permanent Participants[2]. The Senior Arctic Officials held five regular meetings during the Norwegian chairmanship: in Tromsø, Norway (12-13 April 2007); in Narvik, Norway (28-29 November 2007); in Svolvær, Norway (23-24 April 2008); in Kautokeino, Norway (19-20 November 2008)and in Copenhagen, Denmark (10 February 2009); and three drafting meetings: in Copenhagen, Denmark (10-11 February 2009); in Washington, USA (3-4 April 2009) and in Tromsø, Norway (26-27 April 2009) to prepare for the 29 April Ministerial Meeting in Tromsø.

The first ever Joint Ministerial Meeting of the Antarctic Treaty/Arctic Council took place in Washington on April 2009 on the occasion of the conclusion of the International Polar Year 2007-2008 and the 50th anniversary of the Antarctic Treaty.

[1] Canada, Denmark, Finland, Iceland, Norway, Russian Federation, Sweden, United States of America

[2] Aleut International Association, Arctic Athabaskan Council, Gwich'in Council International, Inuit Circumpolar Council, Saami Council, Russian Association of Indigenous Peoples of the North

Several of the Senior Arctic Officials meetings during the Norwegian chairmanship received the largest number of participants to date at such meetings and this is a testament to the growing interest in Arctic affairs. The reach of the Council and its Working Groups is increasingly global in scale through engagement of regional and international organizations as well as through participation of non-Arctic states [3], and global and regional intergovernmental[4] and non-governmental[5] organizations which are accredited Observers to the Council. Since the Salekhard Ministerial Meeting in 2006, applications to obtain Arctic Council Observer status were received from China, Italy and the Republic of Korea, and these states participated as *ad hoc* Observers. In addition, the European Commission was approved as an *ad-hoc* Observer to a number of SAO meetings and has applied to become an Observer to the Arctic Council. Consideration of these new applications will continue under the Danish Chairmanship following completion of the Arctic Council's review of the role of Observes in the Arctic Council.

3. Overview of Activities During the Norwegian Chairmanship

3.1. The Norwegian Chairmanship Programme

The substantial efforts within the main areas of Arctic Council cooperation were continued during the Norwegian chairmanship, including monitoring long-range pollution and climate change, prevention of pollution and reducing releases of hazardous substances, protection of the marine environment, conservation of biological diversity and a broad range of activities related to social and economic development, with due regard for the interests of Arctic indigenous peoples.

In particular, the programme of the Norwegian chairmanship focussed on three priority areas which cross-cut all of the work of the Arctic Council: a) integrated resource management; b) climate change, and c) the structure of the Arctic Council.

[3] Accredited state Observers: France, Germany, Netherlands, Poland, Spain, United Kingdom

[4] Accredited inter-governmental and inter-parliamentary organization Observers: Standing Committee of Parliamentarians of the Arctic Region (SCPAR), International Federation of Red Cross & Red Crescent Societies (IFRC), International Union for the Conservation of Nature (IUCN), Nordic Council of Ministers (NCM), Nordic Environment Finance Corporation (NEFCO), North Atlantic Marine Mammal Commission (NAMMCO), United Nations Economic Commission for Europe (UN-ECE), United Nations Environment Program (UNEP), United Nations Development Program (UNDP)

[5] Accredited non-governmental organization Observers: Advisory Committee on Protection of the Seas (ACOPS); Arctic Circumpolar Route (ACR); Association of World Reindeer Herders; Circumpolar Conservation Union (CCU); International Arctic Science Committee (IASC); International Arctic Social Sciences Association (IASSA); International Union for Circumpolar Health (IUCH); International Work Group for Indigenous Affairs (IWGIA); Northern Forum; University of the Arctic (UArctic); World Wide Fund for Nature (WWF)

3.2. Integrated resource management

While new economic activities may provide an important basis for welfare and economic growth in Arctic communities and in the Arctic states, it is critical that all resource utilisation is planned and carried out based on the best available scientific knowledge and in a sustainable manner with integrated consideration of the coexistence of activities in different sectors, including fisheries, mining, maritime transport and the petroleum industry as well as the subsistence livelihoods and economies. Exploitation of natural resources must be carried out in accordance with environmental and safety standards and should benefit Arctic societies. Long-range pollution and climate change are creating additional challenges for environmental protection and sustainable development in the Arctic.

Many Arctic communities and settlements are largely based on the use of natural resources. Traditionally these activities included hunting, fishing and reindeer herding. In addition, the importance of the non-renewable resources is growing in the Arctic. Together with the fisheries, the exploitation of minerals and fossil fuels is now a major basis for many regional economies. The growing economic activity offers significant opportunities for Arctic communities. However, the close links between culture and nature and the fact that many people's livelihoods are based on hunting and fishing make the Arctic population highly sensitive to environmental change. Protection of the environment combined with sustainable use of natural resources will continue to be core areas of cooperation for the Arctic Council in the years ahead.

Specific activities under the Norwegian Chairmanship contributing to building the knowledge base and environmental and safety standards and guidelines in these different sectors include those by AMAP (e.g. the assessment *Oil and Gas Activities in the Arctic: Effects and Potential Effects* and the report *Arctic Oil and Gas 2007*), PAME (e.g. A*rctic Marine Shipping Assessment, Revised Arctic Council Offshore Oil and Gas Guidelines*), CAFF (e.g. establishment of the Circumpolar Biodiversity Monitoring Program), EPPR (e.g. *Guidelines and Strategies for Oily Waste Management in the Arctic Regions, the Arctic Guide for Emergency Prevention, Preparedness and Response*) and SDWG (collection and analysis of social science datasets and measures from the ArcticStat, ASI, ECONOR, SLiCA, and ICS projects).

Integrated ecosystem-based management can provide a framework for the utilization of natural resources and goods, while at the same time maintaining the structure, functioning and productivity of the ecosystems of the area. Many Arctic ecosystems and environmental impacts of human activity extend across state boundaries, and it is also important to consider both offshore and onshore as well as atmospheric impacts of activities. The exchange and building of experience and knowledge, including traditional knowledge, with the aim of developing a common approach to ecosystem-based management of natural resources of the Arctic is therefore a natural priority for the Arctic Council.

A number of specific activities under the Norwegian Chairmanship accelerated the Arctic Council's work to support an ecosystem-based management approach in the Arctic including through the work of ACAP (e.g. *Integrated Hazardous Waste Management Strategy*), CAFF (e.g. Arctic Marine Expert Monitoring Group), PAME (e.g. A*rctic Marine Shipping Assessment*, *updated Regional Programme of Action*, and *Large Marine Ecosystem (LME) Map)*, and SDWG and PAME (e.g. Best Practices in Oceans-Based Ecosystem Management (BePOMaR)). Notably, PAME's working map of the 17 Arctic Large Marine Ecosystems, served as a reference for the Arctic Marine Shipping Assessment (AMSA), the AMAP Oil and Gas Assessment, and the updated Regional Programme of Action (RPA). Further, the Arctic LME approach corresponds with the ecosystem approach promoted within the EU Marine Strategy and OSPAR context.

(More information and recommendations related to these specific activities are found below under "Thematic Activities".)

SAOs recommend Ministers to:

- ***Urge that any future exploitation of natural resources in the Arctic must be based on the best available scientific and traditional knowledge and thorough impact assessments, to ensure safe and environmentally sound activities at all times. Urge continued work under the Arctic Council to promote the implementation of internationally recognized environmental and safety standards and guidelines.***
- ***Promote the Arctic Council Offshore Oil and Gas Guidelines and give priority to the implementation of the Oil and Gas assessment recommendations for responsible development of petroleum resources in the Arctic as appropriate.***
- ***Consider the need for guidelines for responsible development of petroleum and mineral resources in the Arctic and other activities such as tourism, shipping, the establishment of infrastructure, waste management, and a set of operational guidelines for assessing the impact of projects, plans and programmes in the Arctic.***
- ***Urge that standards, guidelines and good practices adopted by the Arctic Council, should be implemented as appropriate by national authorities in the Arctic states, including efforts to harmonise legislation as necessary, and that competence building and education are important instruments for facilitating this implementation.***

3.3. Climate Change

The 2004 Arctic Climate Impact Assessment (ACIA) provided an overview of the available knowledge on climate change in the Arctic and its impact on the region and the world as a whole. More recently, the IPCC 4th Assessment Report concluded that the Arctic is experiencing much more rapid climate change than the rest of the world. The average temperature in the Arctic has risen almost

twice as fast as in the rest of the world during the past 50 years. New assessments and several recent indicators show further and extensive climate change at rates faster than previously projected. Notably, sea ice extent has decreased sharply, with a record low in 2007 and a few weeks of ice-free (summer) conditions in both the Northern Sea Route and the Northwest passage for first time in recorded history in 2008. As ice that persists for several years (multi- year ice) is replaced by newly formed (first-year) ice, the Arctic sea-ice is becoming increasingly vulnerable to melting. Surface waters in the Arctic Ocean are increasing. Permafrost is also warming and, at its margins, thawing, with the potential for severe consequences on community infrastructure. Snow cover in the Northern Hemisphere is decreasing by 1-2% per year. Glaciers are shrinking and the melt area of the Greenland Ice Cap is increasing. The treeline is moving northwards in some areas up to 3-10 meters per year, and there is increased shrub growth north of the treeline. Species that are new to the Arctic are being observed. Even greater change is projected for the future, contributing to major physical, ecological, social and economic changes.

The impacts of climate change in the Arctic are already significant and will be far reaching for humans, ecosystems and on many sectors of the economy, and will necessitate adaptation and capacity building measures in the Arctic. All sustainable development and environmental protection decision making, including integrated ecosystems-based resources management, need to be undertaken in the context of a changing climate. Given the interdisciplinary nature of climate change, close cooperation among Arctic Council Working Groups is necessary to ensure consistency and complementarities among Council projects and activities.

Norway's chairmanship gave priority to the implementation of the recommendations in the ACIA report, the Declaration and the ACIA Policy Document from the Ministerial Meeting in Reykjavik in 2004 to help to fill gaps in our knowledge and provide a basis for development and implementation of adaptive strategies. Studies, assessments and work were undertaken in priority areas such as: coordinating and sustaining Arctic observing networks, assessing the effects of climate change on the Arctic cryosphere (snow, water, ice and permafrost); assessing biochemical processes in the Arctic region , including the links between climate change and pollution problems and particularly the short lived climate forcers[6] north of 40° N latitude; work to monitor and assess the status and trends of Arctic biodiversity and the impacts of climate change on the Arctic's living resources; advancements in community-based monitoring in the Arctic; assessment of the consequences of climate change for marine shipping; sharing knowledge and information on vulnerability and adaptation to climate change in the Arctic; and work on the role of traditional knowledge and indigenous languages to adapting to global change.

(More information and recommendations related to these activities are found below under "Thematic Activities".)

[6] black carbon, methane and tropospheric ozone

3.4. The structure of the Arctic Council

The work of the Arctic Council needs to be continuously reviewed to ensure the most efficient use of resources. In Salekhard, Ministers requested SAOs to continue to examine the organization of the Arctic Council with a view to improve its effectiveness and efficiency, and report back to the next Ministerial.

Norway continued consultations and implementation of measures to improve the effectiveness and efficiency of the work of the Arctic Council building on the experience gained during 18 years of Arctic cooperation. In April, 2007, SAOs decided that *Enhancing the Effectiveness and Efficiency of the Arctic Council,* would be a standing item on the SAO agenda. Senior Arctic Officials (SAOs) and Permanent Participants Heads of Delegation (PP HoD) met pre-sessionally on April 22 and November 18 2008 to discuss i) outreach and communication and ii) the role of Observers. Both are key elements of improving the effectiveness and efficiency of the Arctic Council.

3.5. Thematic Activities

SAOs found it useful to organize their meeting agendas in accordance with a number of thematic areas to help focus their discussions on the broad range of Arctic Council projects and activities. Further information on these activities is also found in the appropriate Working Group progress reports.

3.5.1. Climate Change

3.5.1.1. International action

The observed changes in the Arctic climate underline the urgent need to reduce global emissions of greenhouse gases. The global framework for addressing this issue is provided by the United Nations Framework Convention on Climate Change. The upcoming UNFCCC 15th Conference of the Parties (CoP15) in Copenhagen in December 2009 is a unique opportunity to communicate information on climate change in the Arctic and its effects on local, regional and global conditions.

3.5.1.2. Arctic climate change and its effects

The Arctic Council has continued to emphasize on-going monitoring and assessment of climate change and its effects, including on land and marine ecosystems and socio-economic systems, the

role of short-lived climate forcers in the Arctic, and improving predictive capacity at the regional level in the Arctic. The AMAP 2009 Update on Selected Climate Issues of Concern report underlines the continued and increasing pace of climate change in the Arctic and the critical role that short-lived climate forcers may play in Arctic climate change.

AMAP is compiling new information on climate change and the Arctic cryosphere through its project on Snow, Water, Ice and Permafrost in the Arctic (SWIPA). The final report from the project is expected to be delivered during the Danish Chairmanship. The Greenland Ice Sheet component of SWIPA was presented in Tromsø in April, 2009. Given the importance of the Greenland Ice Sheet (GRIS) to considerations of global climate change, SAOs support the presentation of the GRIS report to CoP15 pending completion and SAO review of the Report. Close cooperation among Arctic Council Working Groups will be required to integrate or to ensure consistency and complementarities among SWIPA activities and other Council projects and activities, for example in relation to socio-economic issues (SDWG), the Arctic Biodiversity Assessment (CAFF) and the Arctic Marine Shipping Assessment (PAME).

3.5.1.3. Short-lived forcers of Climate Change

There are significant sources of short-lived climate forcers (SLCFs) north of 40° N latitude. Early action to reduce emissions and formation of SLCFs such as black carbon, methane and tropospheric ozone has the potential to reduce the enhanced rate of warming of the Arctic and to slow the rate of Arctic snow, sea ice and sheet ice melting in the near-term.

Among the actions suggested for consideration by the Arctic Council are expanded monitoring and research; commitments to reduce methane emissions, and measures to limit agricultural crop residue burning and evaluation of other black carbon emission reduction options. This work on short-lived climate forcers has also highlighted the link between climate change, air pollution and health.

3.5.1.4. Vulnerability and Adaptation to Climate Change in the Arctic

Further efforts to understand impacts and methods of adaptation are needed to strengthen the adaptive capacities of Arctic residents, including indigenous peoples and local communities, and to identify the most vulnerable sectors of society. Although the specific issues, challenges and needs related to vulnerability and adaptation to climate change vary substantially between Arctic states, communities and peoples, the Arctic Council can play a strong role by continuing to share information and supporting practical community-based actions.

The SDWG project on *Vulnerability and Adaptation to Climate Change in the Arctic* (VACCA) was approved by the SAOs in July 2007. The project was designed to share knowledge so that this learning can be incorporated into policies and decision-making at all levels. The project has direct and indirect links to several SDWG priority subject areas and activities of other Working Groups, including follow-on to the Arctic Human Development Report (AHDR, 2004); management of natural resources; Arctic human, community and environmental health; energy; marine shipping; and information and communication technologies. The project consisted of a scoping study and an international workshop held in Tromsø, Norway in October 2008. The final workshop report contains suggestions to assist the Arctic Council in moving forward with reducing vulnerability and implementing measures for adaptation to climate change in the Arctic, including to minimize community vulnerability and to build capacity and knowledge to implement climate change adaptation strategies and best practices.

Indigenous peoples are facing major social and cultural challenges related to climate change in the Arctic. Indigenous communities are drawing from both their traditional knowledge and scientific research to better understand and adapt to these challenges. The Arctic Council supports related activities through projects such as *EALAT: Reindeer herding, traditional knowledge and adaptation to climate change and loss of grazing land project.* The project was designed to gather information about the changes to which Arctic herders are subjected and to transfer reindeer herders' knowledge into action for adaptation to changing conditions and sustainable development of the Arctic. Although the project will be completed during the Danish chairmanship, an interim report/ information book will be available at the 2009 Arctic Council Ministerial Meeting.

SAOs recommend Ministers to:

<u>Arctic climate change and its effects</u>

- ***Recall that the Arctic Climate Impact Assessment (ACIA) and the Intergovernmental Panel on Climate Change (IPCC) have reconfirmed the importance of climate change in the Arctic, both regionally and globally.***

- ***Welcome the AMAP 2009 Update on Selected Climate Issues of Concern report and its conclusions highlighting the continued and increasing pace of climate change in the Arctic and the critical role that short-lived climate forcers may play in Arctic climate change.***

- ***Welcome the annual Arctic Report Cards produced by NOAA, with the cooperation of AMAP and CAFF, as a significant contribution to increasing public understanding of changes in the Arctic, and note with concern the that several indicators show further and extensive climate change at rates faster than previously projected.***

- ***Request AMAP and CAFF to continue to support the collection of information on key parameters and variables that describe Arctic climate change and its effects, and welcome CAFF's recent development of biodiversity indicators.***

- ***Accept with appreciation the summary of the report "The Greenland Ice Sheet in a Changing Climate" highlighting process and dynamics and recent developments in the mass loss from the Greenland Ice Sheet, and look forward to the delivery of the full results of the Arctic Cryosphere: Snow, Water, Ice, and Permafrost in the Arctic (SWIPA) project in 2011.***

- ***Decide to report to the UN CoP15 on the latest results of the Arctic Council's climate change related work, and request Arctic Council Working Groups, under the direction of the SAOs and in cooperation with Denmark and relevant international organizations, to prepare suitable outreach materials to disseminate information on Arctic climate change at COP 15 meeting in Copenhagen.***

- ***Request AMAP to present the preliminary report highlighting the melting of the Greenland ice-sheet and the SWIPA project at COP 15 as an Arctic Council contribution to this event.***

- ***Recommend that Arctic states consider action to initiate and maintain circumpolar measurements of carbon fluxes in the Arctic and to understand their role in the global carbon cycle.***

- ***Recommend that Arctic states encourage and support efforts to develop reliable regional-scale climate models including the use of palaeoclimate data to support assessment of impacts and effective tools to evaluate effectiveness of adaptive and mitigative actions.***

<u>Short- lived climate forcers</u>

- ***Decide to continue AMAP's work on short-lived climate forcers.***

- ***Establish a task force on short-lived climate forcers reporting directly to the SAOs, drawing on AMAP and other relevant expertise, and inviting the active participation of all members of the Arctic Council, to exchange information on existing national policies, regulations and opportunities for immediate voluntary action in the Arctic States to reduce emissions of short-lived climate forcers, to develop recommendations for further immediate national and international actions, including joint proposals for the SAOs to consider for submission to relevant international bodies, and to review progress and re-examine the need for and mandate of this task force at the next Ministerial Meeting.***

- ***Recommend that Arctic states consider measures to expand networks of monitoring and observation points for short-lived climate forcers.***

- ***Endorse and support actions in Arctic and non-Arctic states to limit agricultural crop residue burning, especially in springtime, in order to decrease deposition of black carbon during the sensitive Arctic melt season and to encourage similar initiatives from observer states.***

<u>Vulnerability and Adaptation to Climate Change in the Arctic</u>

- ***Note that adaptation to climate change in the Arctic was identified as a gap of knowledge in ACIA and urge Member States to continue work to help Arctic residents better adapt to climate change.***

- ***Agree to strengthen the work on reducing vulnerability and implementing adaptation to climate change in the Arctic, including to pursue practical community-based actions, and request the SDWG to continue to share information on best practices and to report progress on relevant projects to the Ministerial Meeting in 2011,***

- ***Acknowledge that indigenous peoples in the Arctic are taking a leading role to use best available traditional and scientific knowledge to help understand and adapt to challenges related to climate change and other challenges in their societies, and welcome initiatives to build the capacity of indigenous peoples.***

SAOs note:

- ***The Indigenous Peoples Global Summit on Climate Change in April 2009 in Anchorage, Alaska is an example of Permanent Participants' capacity to build awareness of the impacts of climate change on the Arctic.***

- ***The interim report/information book on the project EALAT: Reindeer herding, traditional knowledge and adaptation to climate change and loss of grazing land.***

- ***A Canadian IPY project focusing on linkages among caribou, indigenous peoples and climate change adaptation building on the experience of EALAT.***

3.5.2. International Polar Year

3.5.2.1. International Polar Year Legacy

The International Polar Year 2007-2008 has been a valuable contribution to cooperation and coordination of Arctic scientific research and has engaged the upcoming generation of young scientists in polar research. It was also an important opportunity to raise public awareness and understanding of the Arctic region and its inhabitants, and the relationship of the Arctic to the rest of the world.

The Arctic Council through its member states is a significant contributor to the development of science in the region. Several Working Groups placed a strong focus on the IPY both through contributing to and benefiting from IPY generated research. The importance of the knowledge generated by IPY to the work of the Arctic Council is evident as science plays a role in decision-making on almost all issues before the Arctic Council. The Arctic Council therefore has a strong interest in promoting Arctic science in general and in building upon the IPY effort in particular.

The preparatory phase of the proposed Arctic Council project "Maximizing the Legacy of IPY", led by Norway, brought together a group of experts to assist the Arctic Council in undertaking scoping work to identify areas where the Arctic Council might contribute to sustaining scientific cooperation and

also promote outreach activities to communicate relevant IPY findings to decision makers and Arctic residents. The group consisted of experts nominated by the SAOs of the Arctic states, PPs, as well as representatives of major Arctic scientific organizations and networks.

A workshop held in connection with the Arctic Science Summit Week (ASSW) in March 2009 in Bergen, Norway and the preliminary results were communicated to SAOs at their meeting in Washington, 3 April. The final report *Maximizing the Legacy of IPY in the Arctic: A scoping study for the Arctic Council* was completed and delivered to the Arctic Council in April 2009. The report addresses coordination of multidisciplinary Arctic data acquisition, public access to data and metadata, systematizing human development monitoring, transparent access regulations for Arctic areas, international coordination of funding, and communicating research results to public, policy- and decision-makers. SAOs will consider the report in more detail at the first SAO meeting of the Danish Chairmanship.

3.5.2.2. Data, Observations and Monitoring

A primary objective of the Arctic Council has been monitoring of the Arctic to support environmental impact and risk assessments, and environmental protection and sustainable development objectives. Due its circumpolar scale, fulfilling this mission requires a more comprehensive understanding of the Arctic atmosphere, oceans, marine, terrestrial and socio-economic environments and depends upon cooperation between all the Arctic states and indigenous organizations as well as with international organizations and scientific networks.

Many of the Arctic Council's assessment and other products have had difficulty attaining the desired Arctic-wide perspective because data and information on the Arctic is to a large extent fragmentary. There is a lack of geographical coverage of stations/platforms, uncoordinated and/or incompatible monitoring approaches and lack of access to existing data from monitoring programmes and research projects and information from governmental agencies. Some Arctic observing systems lack necessary financial support to sustain observations, and existing systems could be better coordinated. There is an overall consensus on the need to strengthen the international monitoring networks in the Arctic and improve the accessibility of data.

Being aware of these needs, the Salekhard Ministerial Meeting "urge all Member countries to maintain and extend long term monitoring of change in all parts of the Arctic, and request the Arctic Monitoring and Assessment Program to cooperate with other Arctic Council Working Groups, the International Arctic Science Committee and other partners in efforts to create a coordinated Arctic observing network, that meets identified societal needs"

A Sustaining Arctic Observing Networks - Initiating Group (SAON-IG) was formed and included 13 international bodies representing the Arctic Council, Arctic residents, Arctic research communities, and relevant operational and funding agencies. The group facilitated three international workshops in Sweden, Canada and Finland, and two regional meetings in Russia and the Republic of Korea, that were broadly attended by more than 300 representatives of stakeholders including the science community, operational agencies and indigenous peoples. Based on the discussions at these workshops, the SAON-IG group prepared the report "Observing the Arctic" presenting their recommendations for the follow-up work to sustain future research and monitoring of the Arctic.

SAOs recommend Ministers to:

- ***Welcome the Antarctic Treaty-Arctic Council Joint Meeting Washington Ministerial Declaration on the International Polar Year and Polar Science highlighting the International Polar Year (IPY) 2007-2008, an internationally coordinated scientific research and observation campaign in polar regions that included the human dimension concerns of local and indigenous peoples and a broad engagement of Arctic residents, and commitments to deliver a lasting legacy from the IPY.***

- ***Support continued international coordination to maximize the legacy of IPY within the following areas; observations, data access and management, access to study areas and infrastructure, education, recruitment and funding, outreach, communication and assessment for societal benefits, and benefits to local and indigenous peoples.***

- ***Reiterate the decision of the Arctic Council, expressed in the Salekhard Declaration, to promote the establishment of a circumpolar Arctic observing network as a lasting legacy of the IPY.***

- ***Acknowledge the important and valuable work conducted by the SAON IG and participating partners in the SAON process, welcome the report Observing the Arctic prepared by the SAON-IG, and endorse its recommendations 2-4.***

- ***Emphasise that SAON is a long-term undertaking and recognize the valuable contribution of the SAON process as an IPY legacy to coordination of multidisciplinary Arctic data acquisition, management, access and dissemination and encourage the continuation of this work with an emphasis on the improving sustained, long term observation, and welcome the participation of indigenous organizations in future work.***

- ***Decide to take the lead, as recommended by the SAON-IG, in cooperation with IASC and other relevant partner, for the continuation of the SAON process, including to consider ways to develop an institutional framework to support circum-Arctic observing, and the preparation and implementation of a workplan for the next two years to initiate work on priority issues including sustained funding and data management.***

- ***Recommend that AMAP together with IASC, using existing institutional structures and secretariats and involving all Arctic Council Working Groups, take the lead for a group consisting of representatives from each Arctic country, PPs, and other relevant partners including the WMO***

to draft and implement a detailed workplan for the next two years, drawing on all information gathered by the SAON process to date, and including arranging workshops to make concrete progress on priority issues.

- ***Encourage an integrated approach for the collection and analysis of social science data sets and measures as a contribution to the human dimension component of SAON.***

- ***Call for consultations involving national funding and operational agencies to create a basis for internationally coordinated funding and shared infrastructure and enhance the recruitment of young scientists into polar science.***

- ***Appreciating that Arctic science has benefited from the International Polar Year (IPY) and the funding provided by Arctic and other countries for the IPY, recognize that there is a need for continuous funding for Arctic research and monitoring.***

- ***Encourage the exploration of ways to continue the innovative forms for IPY outreach and the presentation of outcomes of the IPY, including the use of scientific data and traditional knowledge in future assessments.***

- ***Endorse the IPY - Oslo Science Conference in 2010 and the IPY Science-Policy Conference in Canada in 2012 as the two major concluding conferences for IPY 2007-2008.***

- ***Recognize the establishment of the Association of Polar Early Career Scientists (APECS) and recommend that special efforts are devoted to the recruitment of young scientists to polar science and that member states provide specific mechanisms for this.***

- ***Encourage AMAP and CAFF to continue their ongoing monitoring and assessment activities related to biodiversity, contaminants, human health, and climate and UV.***

- ***Request the Arctic Council Working Groups to cooperate, including with relevant scientific bodies, in continuously reviewing needs and gaps in monitoring in the Arctic so that coordinated action might be taken to ensure the full realization of a comprehensive Arctic observing network.***

- ***Recognize that the Arctic Council Assessment reports depend on the underlying data for their validity, encourage member states and observing states to sustain and where agreed increase their monitoring activities as recommended and to make available relevant data to support future Arctic Council assessments.***

3.5.3. Human Development, including Human Health

Sustainable development is an overarching mandate of the Arctic Council and SAOs recommended in their 2002 report that the Arctic Council should strengthen its work on the economic, social and cultural dimensions of sustainable development. Consequently, the Arctic Council, primarily through the SDWG, has taken on an increasing number of projects and activities focusing on:

- Adaptation to Climate Change

- Management of Natural Resources
- Arctic Human Health
- Follow up on the Arctic Human Development Report
- Arctic Information and Communication Technologies
- Socio-economic effects of oil and gas activities

Since its inception the Arctic Council, through the work of AMAP and SDWG and other Working Groups, has conducted ongoing human health research activities. The human health activities and legacy of the IPY will also strengthen capacity related to the human health concerns of Arctic communities.

AMAP *Arctic Pollution 2009* report assesses a range of pollution issues including those related to human health. The report indicates that subtle risks exist to humans, particularly the developing foetus, infants and children of Inuit mothers as a result of elevated levels of contaminants exposure associated with a diet of traditional foods such as whales and seals. Communicating this risk is a significant issue in the circumpolar north though recent monitoring has found decreasing levels of some contaminants in human blood in several Arctic regions.

The AMAP led assessment of Oil and Gas Activities in the Arctic: Effects and Potential Effects devoted a chapter to the socio-economic effects of oil and gas activities and a section on effects on human health. The report found that effects are disproportionately higher on local residents but can be both beneficial and detrimental and the net effects of oil and gas acitivites require careful evaluation in each case.

Human health is also a critical component of the Arctic Council sustainable development program. The newly-established SDWG Arctic Human Health Experts Group (AHHEG) will explore ways to broaden the scope and ensure greater integration of human health activities within the Arctic Council including to strengthen cooperation and collaboration with the AMAP Human Health Assessment Group (HHAG) and between other Arctic Council Working Groups and outside expertise. During spring 2008, SDWG and AMAP had several joint meetings of health experts to identify the means for coordination and collaboration between the two health expert groups.

The Arctic Human Health Initiative (AHHI), an IPY project under the auspices of the SDWG, coordinated international workshops on the relationship between climate change and human health in the Arctic. For almost a decade, the SDWG project on International Circumpolar Surveillance: Prevention and Control of Emerging Infectious Diseases in the Arctic (ICS) has been building an integrated international circumpolar surveillance system for infectious diseases by creating a network of hospital and public health laboratories throughout the Arctic. A comprehensive report on both of these activities will be published as a special IPY supplement of the April 2009 International Journal of Circumpolar Health. The ICS and the AHHI could be considered as models for human health monitoring in the Sustaining Arctic Observing Networks (SAON) process.

On a smaller scale, the SDWG telemedicine pilot project (2004-2008) facilitated a series of visits, workshops, and information exchanges in Khanty-Mansiysk and Sakha (RF). In Khanty-Mansiysk the region's capacity to provide health services has been expanded to 52 operational telemedicine stations as well as a boat equipped with medical equipment to service additional travels to remote and isolated communities which would otherwise have no health services.

The success of the SDWG *Arctic Human Development Report* (AHDR) provided a roadmap for follow-up actions in all aspects of human development. Recent projects such as the *Survey of Living Conditions in the Arctic* (SLiCA), *Arctic Social Indicators* (ASI), *ECONOR I and II*, *ArcticStat*, and others are the SDWG responses to fill the demographic data and social measures gaps identified in the AHDR. Future work will focus on fostering an integrated approach for collecting and analysing statistic datasets and measures, to better understand the human dimension impacts at the community level resulting from known drivers of change in the Arctic. The SDWG will continue to seek more knowledge on human development and to build capacity by gathering subject-matter experts (i.e. SDWG Arctic Human Health Expert Group (AHHEG) on issues and activities within its mandate.

Together, these efforts will greatly facilitate the integration of many aspects of Arctic human development into the work of the Arctic Council. Notable projects are: AMAP's ongoing project *Climate Change and the Cryosphere: Snow, Water, Ice, and Permafrost in the Arctic* (SWIPA); the proposed *Sustaining Arctic Observing Networks(SAON)* ; and the socio-economic follow-up aspects of both AMAP's *Oil and Gas Assessment(2008)* and PAME's *Arctic Marine Shipping Assessment* .

The Indigenous Languages Symposium held in Tromsø in October 2008 was an important opportunity for the SDWG to focus on the protection and enhancement of Arctic culture. The symposium provided an opportunity for Arctic indigenous peoples from throughout the circumpolar region to build on each other's knowledge and experience to develop practical ways for the preservation, revitalization and further development of Arctic indigenous languages.

During the period 2006-2009, the SDWG dedicated considerable time to discussing ways to improve the implementation of its mandate, including its strategic direction, methods of work and follow-up in relation to project findings and will continue to enhance its strategic approach to work in the area of sustainable development during the Danish chairmanship.

SAOs recommend Ministers to:

- ***Welcome the AMAP assessment of the human health impact from transboundary pollution included in Arctic Pollution 2009, and urge Arctic states to promote, among Arctic populations,***

healthy diets, recommend breast feeding and reduce human exposure to contaminants through improved access to and consumption of local traditional foods that are high in nutrients but relatively low in contaminants.

- ***Welcome the establishment of the SDWG Arctic Human Health Experts Group (AHHEG) to broaden the scope and strengthen the integration of human health activities with the AMAP Human Health Assessment Group (HHAG), and among the Working Groups as well as outside expertise; and encourage the SDWG to bring forward concrete proposals for projects and activities in the field of Arctic human health, in particular for the improvement of the health and well-being of indigenous peoples and other Arctic residents, for intersessional consideration and approval by SAOs.***

- ***Welcome the report of the Arctic Human Health Initiative and note the continuation of its activities through the SDWG Arctic Human Health Experts Group into the Danish chairmanship.***

- ***Welcome the report of the International Circumpolar Surveillance (ICS) on prevention and control of emerging infectious diseases in the Arctic, note the continuation of its activities into the Danish chairmanship.***

- ***Note the final report of the telemedicine project and note that the project has now concluded.***

- ***Welcome the final report of the ECONOR II project, the Arctic Social Indicators (ASI) report, and the Survey of Living Conditions in the Arctic (SLiCA) findings and the launch of ArcticStat.***

- ***Note the challenges associated with obtaining data which are outlined in the ArcticStat report and encourage Arctic states to consider ways to address these challenges.***

- ***Note that the SDWG projects ICS, ECONOR II, ArcticStat, SLICA, and the Arctic Social Indicators, are ongoing tools providing socio-economic data and encourage the SDWG to ensure the contribution of these activities to provide data and analysis in support of the human dimensions component of SAON.***

- ***Support further development and integration of socio-economic data and expertise within the SDWG to facilitate the integration of human health and the socio-economic aspects of sustainable development into all of the work of the Arctic Council, and to contribute to the human dimension component of SAON, including through the use of existing experts groups (e.g. AHHEG), the establishment of new SDWG expert groups (e.g. in relation to socio- economic issues) and further collaboration with other Arctic Council Working Groups.***

- ***Welcome the Permanent Participant-led Arctic Indigenous Languages Symposium held in Tromso, Norway in October 2008, take into consideration the recommendations developed at the symposium, and request the SDWG to explore follow up projects and activities for approval by SAOs.***

- ***Recognize that education, outreach, scientific research, traditional knowledge and capacity building are major tools to address challenges in Arctic communities and recommend that, where relevant, Arctic Council projects include these elements,***

- ***Recognize that the University of the Arctic (UArctic), a network of higher education institutions in the Arctic, is an effective partner to promote the sustainable development of the region, and welcome its new mechanisms to further fund activities.***

- ***Encourage the SDWG to continue to enhance its strategic approach to work in the area of sustainable development and to report to SAOs on development of this strategy.***

3.5.4. Arctic Marine Environment

The changes occurring in the Arctic Ocean are dramatic. Scientific research carried out during and after the International Polar Year is greatly increasing the knowledge base in relation to the extent of the changes, the drivers of change and anticipated consequences for ecosystems and human affairs in the Arctic Ocean. Existing and emerging challenges to the health of the Arctic marine environment warrant a more integrated ecosystem based approach to address future needs related to shipping, oil and gas development, fisheries, coastal zone development, ocean disposal of waste and other ocean-related activities. Widespread acceptance of an ecosystems based approach to oceans management will provide a foundation for cooperation in the Arctic and can contribute to harmonization of national laws and regulations. PAME Working Group activities have been aimed at implementation of the Arctic Marine Strategic Plan (AMSP) and related follow up to the Arctic Climate Impact Assessment (ACIA).

3.5.4.1. The Arctic Marine Shipping Assessment (AMSA)

The Arctic Council's Arctic Marine Shipping Assessment (AMSA) is the culmination of four years of work completed under the leadership of the PAME Working Group and with contributions from EPPR. The AMSA report contains a number of findings and recommendations relating to current and future shipping activity in the Arctic which takes into account the advice of experts that contributed to the report, and were further developed through intergovernmental processes in the PAME Working Group and confirmed by SAOs. A team of researchers led by Canada, Finland and the United States reached out to a broad range of stakeholders including, the global maritime industry. With the support of the Permanent Participants, town hall meetings were conducted in several Arctic communities to obtain local perspectives and concerns about future Arctic marine activity.

The AMSA *2009* Report provides information to Arctic states, the IMO and others so that they can further enhance marine safety and marine environmental protection in the face of increased shipping activity in the Arctic region. The AMSA 2009 Report also serves to inform interested parties

outside the Arctic as to the complexities and challenges of current and future Arctic marine use. The primary basis for the AMSA 2009 Report is a series of commissioned technical research papers, workshop reports, records of town hall meetings. These background documents will be available on the PAME external website upon release of the AMSA 2009 Report at the Ministerial Meeting in 2009.

3.5.4.2. Updated Regional Programs of Action for the Protection of the Arctic Marine Environment from Land-based Activities (RPA)

The RPA was adopted by Arctic Ministers in 1998 as a regional approach to implementing the United Nations Environment Programme (UNEP) Global Programme of Action (GPA). An updated *Regional Programs of Action for the Protection of the Arctic Marine Environment from Land-based Activities (RPA)* has been prepared by PAME in collaboration with AMAP and CAFF. New elements include a more modern approach to the ecosystem based management, emphasis on ecologically sensitive areas, including updated data on Russian hot spots, implications of climate change, more emphasis on mercury, new information on strategies and actions to deal with sources of marine pollution and priorities for monitoring and assessing the Arctic marine environment and outreach. Taking account of a rapidly changing Arctic region is the overarching objective of the RPA update, and as such is an important response to the 2004 Arctic Climate Impact Assessment (ACIA) and follow-up to the Arctic Council Oil and Gas Assessment.

3.5.4.3. Best Practices in Ecosystems-based Oceans Management in the Arctic (BePOMAr)

The objective of joint SDWG/PAME project entitled *Best Practices in Ecosystems Based Oceans Management* (BePOMAr) was to present the concepts and practices the Arctic countries have developed for the application of an ecosystem-based approach to oceans management. By way of reviewing how countries put to use such concepts and practices, lessons can be drawn on how to effectively implement ecosystems-based oceans management, for example, in relation to the 17 large marine ecosystems (LMEs) that have been identified in the Arctic. The findings of the BePOMAr project complement and provide inputs into the ongoing work of PAME on integrated ecosystem-based management approaches in the Arctic. Outputs from the project include a technical report on ecosystem-based oceans management practices in the Arctic countries, a report on Observed Best Practices (OBP), a university course, and an international workshop to share and discuss experiences on best practices in ecosystems-based oceans management.

3.5.4.4. Updating of the Arctic Offshore Oil and Gas Guidelines

PAME undertook a revision of its *Arctic Offshore Oil and Gas Guidelines,* originally adopted by the Council in 1997. These guidelines were subsequently revised in 2002. The 2009 Arctic Offshore Oil

and Gas Guidelines represent the 2nd revision. These non-binding Guidelines are targeted at state authorities and/or those that regulate the oil and gas industry and are intended to encourage a high level of standards in oil and gas development and protection of the Arctic. The Guidelines take into account the Arctic Climate Impact Assessment (2004), the Arctic Oil and Gas Assessment and the Arctic Marine Strategic Plan and include use of best available technology, best practices, and international standards, the use of integrated and ecosystem-based management, and involvement of all stakeholders in the process.

SAOs recommend Ministers to:

- ***Take note of the progress that PAME and other Arctic Council bodies have achieved in implementation of the Arctic Council Arctic Marine Strategic Plan (AMSP) and encourage continued efforts towards meeting the long term goals and objectives of AMSP.***

- ***Note that the increasing human activity in the Arctic Ocean poses challenges to its health and warrants a more integrated ecosystem based approach to ocean management to maximize environmental protection and promote sustainable use of the marine environment including related to shipping, oil and gas development, fisheries, coastal zone development, ocean disposal of waste and other ocean-related activities,***

- ***Approve the Arctic Marine Shipping Assessment (AMSA) 2009 Report prepared by PAME in association with EPPR and other bodies including its recommendations on enhancing Arctic marine safety, protecting Arctic people and environment and building Arctic marine infrastructure and request SAOs to continue to review its findings and develop appropriate follow up actions.***

- ***Welcome its associated background technical reports.***

- ***Note that increased marine access and navigation in the Arctic Ocean calls for development and implementation of suitable national and international regulations, where appropriate, to advance the safety of Arctic marine shipping, including marine pollution prevention, reduce accident risk, and facilitate effective emergency response.***

- ***Encourage active cooperation within the International Maritime Organization (IMO) on development of relevant measures to reduce the environmental impacts of shipping in Arctic waters.***

- ***Urge that the ongoing work in the IMO to update the Guidelines for Ships Operating in Arctic Ice-Covered Waters be completed; and make mandatory application of its relevant parts and augment global IMO ship safety and pollution prevention conventions with specific mandatory requirements or other provisions for ship construction, design, equipment, crewing, training, and operations, aimed at safety and protection of the Arctic environment.***

- ***Note that climate change may lead to changes in the migration, distribution and accessibility of important fish stocks.***

- ***Approve the revised Arctic Council Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities (RPA) and encourage the continued implementation of the RPA.***

- ***Take note of the importance of the RPA in the context of the Global Programme of Action (GPA) and UNEP.***

- ***Recognize that the RPA should be used as a management framework for assisting in addressing related climate change effects in particular pollution adaptation measures in the coastal areas of the Arctic.***

- ***Take note of the ongoing efforts of the Russian Federation and other Arctic States to implement their respective National Programmes of Action for the protection of the Arctic marine environment.***

- ***Welcome the PAME progress Report on the Ecosystem Approach to Arctic Marine Assessment and Management 2006-2008.***

- ***Take note of the PAME report on progress towards enhanced application of the Ecosystem/LME approach and encourage PAME, in close collaboration with AMAP and CAFF, to further develop the LME approach through pilot projects.***

- ***Welcome the technical background report of the Best Practices in Ecosystems Based Oceans Management in the Arctic (BePOMAr) Project, and recognize the joint efforts of PAME and SDWG in this work.***

- ***Endorse the summary of Observed Best Practices Report for ecosystems-based oceans management.***

- ***Welcome the new Arctic Council project on "Development of safety systems in implementation of economic and infrastructural projects in the Arctic", noting its comprehensive character and importance in minimizing the risks of increased human activity and the offer from Russia and Norway to co-lead the project under the EPPR.***

- ***Approve the establishment of a task force, reporting to SAOs, to develop and complete negotiations by the next Ministerial meeting in 2011 of an international instrument on cooperation on search and rescue operations in the Arctic.***

- ***Approve the revised Arctic Council Offshore Oil and Gas Guidelines and urge all States to apply these Guidelines throughout the Arctic as minimum standards in national regulations.***

- ***Request PAME and SDWG to work collaboratively on the follow up of the BePOMAr project.***

3.5.5. Energy

During the Norwegian chairmanship AMAP, EPPR, PAME and SDWG conducted projects and activities directly related to Arctic energy issues.

3.5.5.1. Arctic Oil and Gas Assessment

The Arctic Council's assessment *Oil and Gas Activities in the Arctic: Effects and Potential Effects*, coordinated by AMAP, and the report *Arctic Oil and Gas 2007,* were delivered in 2008 and contain comprehensive recommendations. Extensive oil and gas activity has occurred in the Arctic, with much oil and gas produced and much remaining that could be produced. There are opportunities and challenges for the development of the Arctic through growth in the oil and gas sector and in some cases with associated changes for people and environment of the Arctic. While, there has been significant progress in technology, management, and regulations that have greatly reduced the impact of oil and gas activities, environmental risk cannot be completely eliminated. Efforts should continue to reduce risk through, inter alia, research, technology, guidelines, enforcement of legislation to address physical disturbances, emissions, accidents, oil spill prevention and response. The risks associated with trans-boundary oil (and gas) pollution hazards and effects on humans and the environment must be recognized. This calls for an increased focus on consequences and closer cooperation in the Arctic Council and between Arctic states, inter alia for coordination of spill prevention or contingency plans and emergency responses to lower risk to humans and the environment and the use of risk and environmental assessments for activities. Arctic states may need to consider additional protection of vulnerable areas.

3.5.5.2. EPPR activities relating to Oil and Gas

Guidelines and Strategies for Oily Waste Management in the Arctic Regions have been completed. Additional EPPR activities relating to Oil and Gas include translation of *The Shoreline Cleanup Assessment Technology (SCAT) Manual* to Russian. As a follow up of the Salekard Declaration, the Norwegian-led project "Behavior of Oil and other Hazardous Substances in Arctic Waters (BoHaSA) which will start early 2009 and be finalized in 2010. The Russian-led project *Development of Safety Systems in the Arctic while implementing infrastructural and other Economic Projects* has been endorsed in principle subject to further definition and some project activities have been conducted e.g. an exercise at the Varandey terminal and an International seminar in Dudinka.

3.5.5.3. Report on Arctic Energy (SDWG)

The *SDWG Report on Arctic Energy*, requested by Ministers in their Salekhard Declaration (2006), provides an overview of the broad subject of Arctic energy; identifies some emerging Arctic energy

issues; references completed Arctic Council projects and activities relating to energy; and identifies some possible areas for cooperation in the field of Arctic energy. Even though emissions of greenhouse gases from activities in the Arctic are relatively limited in global terms, there are important mitigation opportunities in the Arctic energy sector. As well, the *SDWG Report on Arctic Energy* points out that there are opportunities for circumpolar cooperation on projects and activities relating to the Arctic as an energy consumer.

SAOs recommend Ministers to:

- ***Approve the findings and recommendations of the assessment of Oil and Gas Activities in the Arctic: Effects and Potential Effects, and the report entitled Arctic Oil and Gas 2007, coordinated by AMAP.***
- ***Accept with appreciation the Guidelines and Strategies for Oily Waste Management in the Arctic Regions prepared by EPPR.***
- ***Note the opportunities and challenges for the development of the Arctic through growth in the oil and gas sector, and in some cases the associated changes for people and environment of the Arctic.***
- ***Emphasize that while there has been significant progress in technology, management, and regulations that have greatly reduced the impact of oil and gas activities, environmental risk cannot be eliminated.***
- ***Recognise the risk for trans-boundary oil (and gas) pollution hazards and effects on humans and the environment.***
- ***Call for increased focus on consequences and closer cooperation in the Arctic Council and between Arctic states, inter alia for coordination of spill prevention or contingency plans and emergency responses to lower risk to humans and the environment.***
- ***Efforts should continue to reduce risk through, inter alia, research, technology, guidelines, enforcement of legislation to address physical disturbances, emissions, accidents, oil spill prevention and response.***
- ***Encourage continued/grant increased priority to research and technology development, monitoring and assessment, and development of guidelines and measures to address physical disturbances, emissions, accidents, prevention and response to spills, and improved management of social and economic effects on local communities.***
- ***Request all Arctic Council Working Groups to give priority to and cooperate in follow up activities of the Oil and Gas Assessment.***
- ***Encourage better coordination of data protocols for human health, socioeconomic effects, and contaminants including methods of data collection, quality assurance, availability and reporting to allow for pan-Arctic assessments of human health effects of oil and gas activities.***
- ***Note with appreciation the emergency exercise conducted by Russia at the Varandey terminal and request EPPR – Russia to conduct the exercise "Barents rescue" in 2009 in order to enhance preparedness in the Arctic.***

- ***Welcome the Report on Arctic Energy and its observations on activities that the Arctic states could consider for future implementation, in particular in relation to the Arctic as an energy consumer and the importance of environmentally friendly economic activity in the energy sector to ongoing Arctic social and economic development.***
- ***Urge the Arctic States to consult Arctic residents, including indigenous communities, during planning prior to decisions that establish new oil and gas activities, and to identify measures having long lasting benefits for indigenous communities and other Arctic residents, recognizing that the promotion of greater energy efficiency and use of renewable energy offers unique development opportunities in the Arctic region on a sustainable basis, with the co-benefit of reducing local black carbon and methane emissions.***
- ***Urge Member States to apply the precautionary approach and polluter-pays principle as reflected in Principles 15 and16 of the Rio Declaration, respectively, conduct risk and environmental impact assessments for the exploration, development, transport and storage of oil; and enact and/or enforce laws and controls that reduce the risk of trans-boundary oil (and gas) pollution hazards and effects on human health and the environment, especially vulnerable species and habitats, and consider the need for additional protection of vulnerable areas.***
- ***Urge Member States to–apply the revised Arctic Council Offshore Oil and Gas Guidelines throughout the Arctic as minimum standards in national regulations.***
- ***Urge Member States to apply the Guidelines and Strategies for Oily Waste Management in the Arctic Regions.***

3.5.6. Contaminants

During the Norwegian chairmanship AMAP, ACAP and EPPR conducted projects and activities directly related to contaminants, persistent organic pollutants and radioactivity in the Arctic.

3.5.6.1. AMAP Arctic Pollution 2009

The AMAP assessment of pollution issues (human health, persistent organic pollutants, and radioactivity), Arctic Pollution 2009, highlighted: the impacts of Persistent Organic Pollutants (POPs) from long-range transport sources on the Arctic environment, with special emphasis on new POPs; Human Health risks due to contaminant exposures as a result of a diet of traditional foods and actions to promote healthy diets and safe levels of radioactivity in the Arctic region; and the need to include in future assessments the combined effects of POPs, radioactivity and other stressors on human health and the environment in the Arctic. The report notes in particular the presence in the Arctic of contaminants with POP-characteristics that are not yet subject to international controls.

3.5.6.2. ACAP Project Activities

The development of the Integrated Hazardous Wastes Management Strategy for ACAP projects has relevance for the development of environmentally-sound management of hazardous wastes, including those addressed under ACAP PCBs, obsolete pesticides, dioxins/furans and mercury projects. A draft Project Management Plan is being developed.

Another key development in ACAP's work during this period is the realization of the Project Support Instrument (PSI), an Arctic Council trust fund to focus on projects and actions related to prevention, abatements and elimination of pollutants in the Arctic.

ACAP has continued its work on Environmentally-sound Management of Stocks of Obsolete and Prohibited Pesticides in Russia (Chair: Finland), with 2375 metric tons of obsolete pesticides inventoried and placed into temporary storage to await environmentally sound destruction since 2006. A total of 3951 metric tons of pesticides have been placed in storage facilities in 9 regions of Russia. The project is currently operating in Altai and Krasnoyarsk Krai to complete storage activities in this region. Four regions remain to complete the inventory and improved storage phase under this project.

The Phase II report of the project *"Reduction/Elimination of Releases of Dioxins/Furans in the Russian Federation with Focus on the Arctic and Northern Regions Impacting the Arctic"* is available and contains proposals for phase III activities. The "*Final Report of Phase I of the ACAP Project on Brominated Flame Retardants (BFRs): Inventory of sources and identification of BFR alternatives and management strategies"* is available, including proposals for Phase II activities. The main sources of BFRs are in Arctic countries other than Russia and any follow-up will therefore need to focus on circumpolar activities.

The Indigenous Peoples Community Action Initiative has developed partnerships with the Permanent Participants to identify and remove local sources of contamination and improve environmental conditions in indigenous communities in the Nenets Autonomous District with RAIPON, and the other in Fort Yukon, Alaska with Gwich'in Council International. In 2006-2008 a total of five different training programs to address drums management were provided to community volunteers of Chukotka. In the summer of 2008, the ACAP team recovered and relocated approximately 2000 abandoned drums and transported them to a storage facility in Lorino village. RAIPON worked with children explaining the nature of persistent toxic substances, how to recognize toxic and hazardous wastes and dietary habits.

Inventories developed over the two first phases of the ACAP Mercury Project indicate significant amounts of mercury emission from the Arctic States, and especially coal combustion and metallurgic production are large contributors to mercury emissions. Also a concern is the management of mercury-containing waste. The third phase of the ACAP Mercury Project - a feasibility study on Mercury Containing Waste in the NW Region of the Russian Federation will be presented during 2009. It includes an evaluation of two mercury hot spots in the region of Murmansk and Nenets Autonomous Okrug and different Best Available Technologies (BAT) for stabilisation and environmental sound disposal of mercury.

3.5.6.3. Cooperation with UNEP on Mercury

AMAP, in cooperation with UNEP, prepared updated information on global emissions of mercury to the atmosphere. The resulting report on atmospheric mercury that was delivered to the UNEP Governing Council in February 2009 contributed to the deliberation within UNEP to develop a legally-binding international agreement on mercury. The AMAP Mercury Experts Group will complete its mercury assessment by 2011 while providing important Arctic information in support of the UNEP process.

The cooperation with the UNEP Global Mercury Partnership to reduce mercury contained in the releases of chlor-alkali production facilities in the Russian Federation achieved reductions of over 2.5 tons of mercury releases in 2008. An ACAP project to demonstrate the effectiveness of sorbents in reducing mercury emissions and of SO_3 injection for enhanced particulate control at coal-fired power plants in Russia is moving forward.

3.5.6.4. Radioactivity

The AMAP Arctic Pollution 2009 report highlights the progress that has been achieved through political actions to reduce threats from radionuclides, resulting in decreasing levels of contamination in the Arctic. However, the report also identifies the need for new measures to reduce risks, and identify new sources that have a potential to cause radioactive contamination of the Arctic.

Under EPPR activities relating to radiation, two additional Source Control management projects for the Atomflot facility in Murmansk and the Zvezdochka Shipbuilding Center in Arkhangelsk Region have been completed and final reports are published. The risks and hazards were systematically analyzed to identify priorities for prevention and the ISO 14000 process was introduced at the facilities. This project will continue into 2010 with the analysis of transportation of radioactive sources at Russia's Scientific and Research Institute of Atomic Reactors. Under EPPR's exercise series, a fourth full scale exercise was conducted at the Zvezdochka facility in 2008 to test the

implementation and effectiveness of plans and procedures developed from the risk assessment. A fifth exercise will be conducted in 2010.

The Community Radiation Information Project is continuing under the leadership of the USA and the Russian Federation. The project included emergency public information exercises, training courses. In addition two brochures have been published in Russian and English: "The Far East Nuclear Technologies and Environment" and "Keeping the Public Informed in Radiological Emergency."

EPPR sponsored technical projects to improve capabilities to analyze and respond to radiation related incidents or accidents including development of portable site-customized systems for analysis, mapping, forecasting, and communicating radiation related information in an emergency. This system has been provided to 5 Russian facilities to date. Software programs to model airborne radiological dispersion and contamination from an accident, providing critical information to decision makers, have been provided to thirteen radiation-hazardous facilities of Rosatom to date and three additional facilities will receive this capability in 2010. At the National Crisis Situation Management Center, EMERCOM's focal point for emergency response, the capability to respond to a radiological emergency has been improved through EPPR's project to provide training, databases, and a reach-back resource to radiation specialists.

SAOs recommend Ministers to:

- ***Accept with appreciation the Arctic Pollution 2009 report highlighting that progress has been achieved through political actions to reduce the threats from some legacy persistent organic and radionuclide pollutants, but concerns remain regarding new chemicals occurring in the Arctic environment and their potential threat to people and wildlife.***

- ***Note with concern the presence in the Arctic of contaminants with POP-characteristics that are not subject to international controls and that may require consideration by international for a.***

- ***Take note of the information on radioactivity, including the identification of new potential sources of radioactive contamination to the Arctic as well as the information on positive developments regarding levels of radioactivity in the Arctic and measures to reduce risks.***

- ***Welcome EPPR's implementation of technical projects to improve capabilities to analyze and respond to radiation related incidents or accidents which contribute to the protection of people and the environment.***

- ***Note with appreciation EPPR's publications aimed at communicating radiation information to the public, including the brochures of the Risk and Safety series: The Far East Nuclear Technology and Environment and on "Keeping the Public Informed in Radiological Emergency" prepared by EPPR.***

- ***Welcome the Risk Assessment reports for the Coastal Spent Nuclear Fuel (SNF) Reloading Facility of FSUE "Atomflot" and the Zvezdochka Shipbuilding Center and the work done to improve emergency management at the facilities.***

- ***Note with appreciation the emergency exercises conducted to date and request EPPR to conduct another exercise in 2010 in order to enhance preparedness in the Arctic.***

- ***Approve the Revised Arctic Guide for Emergency Prevention, Preparedness and Response.***

- ***Recognize the efforts of ACAP to reduce sources of contaminants locally and regionally and to promote international cooperation.***

- ***Recognize actions in Arctic countries' to reduce contamination from POPs and heavy metals and support further work including obsolete pesticides, mercury, PCBs, dioxins and furans, and brominated flame retardants.***

- ***Note with appreciation the environmentally sound management and storage for more than 3900 tonnes of obsolete pesticides in Russia and dissemination of the results of this project.***

- ***Welcome reduction of mercury use and releases by chlor-alkali facilities in the Russian Federation, and the ACAP feasibility study on improved systems for management of mercury containing waste in NW Russia.***

- ***Support the development of the Integrated Hazardous Waste Management Strategy in the Northern Regions of the Russian Federation, note its potential importance to other parts of the Arctic, and support its implementation with the aim to ensure environmentally sound management, destruction and storage of hazardous waste and to accelerate progress and synergy among the ACAP projects in the Arctic.***

- ***Note with appreciation the establishment of the Arctic Council Project Support Instrument (PSI), a circumpolar funding mechanism for projects and actions related to prevention, abatement and elimination of pollutants in the Arctic.***

- ***Accept with appreciation the Phase I report of the ACAP project on Brominated Flame Retardants "Inventory of sources and identification of BFR alternatives and management strategies" and its findings,***

- ***Accept with appreciation the Phase II report of the ACAP project "Reduction/Elimination of Emissions of Dioxins and Furans in the Russian Federation, with focus on the Arctic and Northern Regions impacting the Arctic" and its findings,***

- ***Welcome with appreciation achievements of the ACAP Indigenous Peoples Community Action Initiative and approve establishing a Project Steering Group to address contaminant issues in indigenous peoples communities in remote areas of the Arctic.***

- ***Encourage ACAP to pursue cooperative initiatives with the Barents Euro Arctic Council (BEAC) Working Group on Environment (WGE) to address contaminant hot spots in the Arctic and the Nordic Council of Ministers (NCM) on the Nordic Strategy for the Arctic Climate and Environmental pollutants,***

- ***Urge Member and non-member States to continue to take action to reduce contaminant levels and effects from long-range transport sources, based on recent findings from AMAP, including through international agreements or coordination.***

- ***Note with appreciation ACAP and AMAP actions in support for the implementation of the Stockholm Convention and the POPs and Heavy metals protocol of the UNECE Convention on LRTAP, and encourage countries to continue work to reduce emissions and sign, ratify and enhance the implementation of these Conventions and Protocols.***

- ***Urge Member and non-member States to support the first effectiveness evaluation report of the Stockholm Convention and the addition of new POPs such as PBDEs and PFOS to the Stockholm Convention and the UN ECE LRTAP Convention POPs Protocol.***

- ***Welcome the recent UNEP Governing Council decision to develop a legally binding instrument on mercury to be ready in 2013 and commit to bring forward Arctic perspectives to these negotiations.***

- ***Urge Member and non-member States to continue and enhance monitoring of new contaminants to assess potential new threats to the environment and people.***

SAOs recommend Ministers to encourage the Arctic Council Member States to:

<u>Contaminants and Human Health</u>

- ***Implement the Arctic Pollution 2009 recommendations to reduce risks to Arctic people from exposure to POPs and mercury; to improve risk communication to northern communities, particularly in Greenland, Eastern Canadian Arctic, Chukotka and the Faroe Islands; and to continue monitoring contaminant levels in people.***

- ***Continue and enhance monitoring for legacy and new and emerging POPs, mercury and lead in both human tissues and traditional food items. Dietary assessments and overall health assessments should consider the combined significance of both contaminant exposure and nutritional benefits of traditional foods in the forms in which they are consumed.***

- ***Conduct further research on effects of individual contaminants and of contaminant mixtures, as well as maintain and expand current human population cohorts in the Arctic in order to track adverse health outcomes associated with contaminants and with changing conditions related to climate change, socio-cultural conditions and diet.***

- ***Conduct further studies on risk communication and determinants of food choice.***

<u>Radioactivity</u>

- ***Continue work to decommission remaining obsolete nuclear vessels, remove remaining radio-isotopic thermoelectric generators (RTGs), and to manage spent nuclear fuel and waste at sites in or close to the Arctic.***

- ***Implement additional actions to address continued concerns, especially the storage facilities at Andreeva Bay and Gremikha, and the Lepse storage vessel.***

- ***Strengthen plans to ensure safe and secure transport of spent fuel and waste to storage facilities.***

- ***Consider the need to further develop regulatory systems, especially for addressing clean-up operations and improved safety of nuclear facilities.***

- ***Increase attention to technologically enhanced naturally occurring radioactive materials (TENORM) in future assessments, including information from all countries engaged in or planning Arctic oil and gas extraction and uranium and other mining.***

3.5.7. Biodiversity

A question commonly asked is what is happening in the Arctic with regards to climate change and biodiversity loss? How is this affecting Arctic ecosystems and what are the social and environmental impacts? The Conservation of Arctic Flora & Fauna Working Group (CAFF) is the biodiversity Working Group of the Arctic Council and CAFFs 2006 – 2008 Work Plan placed a strong focus on Climate Change and building upon the recommendations contained in the Arctic Climate and Impact Assessment (ACIA) and CAFF´s Flora & Fauna: Status and Conservation report. The reports indicate that the ability to respond effectively to conserve the natural environment and allow for economic development, particularly in the face of climate change, requires improved monitoring to establish baseline data on long-term status and trends of Arctic biodiversity, habitats and ecosystem health.

The Arctic Biodiversity Assessment (ABA) and the Circumpolar Biodiversity Monitoring Program (CBMP) are two of the primary vehicles via which CAFF is responding to these calls. CAFF also has a wide range of ongoing activities operating through its Expert Groups and projects such as the Integrated Ecosystem Approach to Conserve Biodiversity and Minimize Habitat Fragmentation in the Russian Arctic (ECORA) and the Permanent Participant–led Bering Sea Sub Network, International Community-based Observation Alliance for Arctic Observing Network (BSSN).

CAFF projects contribute to the cornerstone projects such as the Arctic Biodiversity Assessment and the Circumpolar Biodiversity Monitoring Programme. During the 2006 – 2009 Ministerial period CAFF expert groups have been very productive e.g. in producing conservation plans and action strategies for Arctic seabirds and in starting the development of a Circumpolar Boreal Vegetation Map.

3.5.7.1. The Arctic Biodiversity Assessment

The purpose of the Arctic Biodiversity Assessment (ABA), endorsed by Arctic Council Ministers in Salekhard 2006, is to synthesize and assess the current state of, and trends in, the Arctic's ecosystems and biodiversity, including key mechanisms driving change. It will create a baseline for use in future global and regional assessments of Arctic biodiversity and produce recommendations to inform and guide future Arctic Council work.

CAFF has accomplished many important tasks related to advancing work on the ABA. The report is to be produced in two phases. Phase 1 is a short *2010 Arctic Highlights Report*. This will present twenty one indicators of trends and is based on the suite of indicators developed by the *Circumpolar Biodiversity Monitoring Programme*. Authors have been identified for each indicator and it is anticipated that this report will be ready as an Arctic Council contribution to the United Nations 2010 Biodiversity Target and International Biodiversity Year in 2010. Phase 2 will be a full Arctic Biodiversity Assessment scheduled to be completed in 2013. A chief scientist has been appointed and authors identified for the scientific report.

3.5.7.2. The Circumpolar Biodiversity Monitoring Programme

The CBMP is a unique Arctic Council initiative in that, unlike the assessments and reviews conducted by other Working Groups, it is an ongoing initiative focusing on coordinating and sustaining Arctic biodiversity monitoring with a view to understanding and reporting of important trends in biodiversity and to inform management decisions. The CBMP has accomplished many important tasks over the last two years which will be of critical importance to the Arctic Biodiversity Assessment.

The CBMPs five year implementation plan was endorsed by the SAOs in April 2008. The programme is in its implementation phase with a focus on the activation of its expert monitoring groups for the Arctic's major systems (Marine, Coastal, Freshwater, Terrestrial, Vegetation and Terrestrial Fauna). (The Marine Expert Group has been convened under the leadership of Norway and the United States). The CBMP has been identified as one of the building blocks for the proposed Sustaining Arctic Observing Network (SAON). It is also being considered as a pilot program under the SAON banner. To date, the CBMP has attracted over 60 global partners, 33 of which are Arctic biodiversity monitoring networks operating and linked to the CBMP. Many of these networks have received substantial support from the International Polar Year.

CAFF projects such as the BSSN and the ECORA are recognised as providing important contributions towards our understanding and use of community- based monitoring and its application in the Arctic. BSSN, an IPY endorsed project, is a structured network of coastal communities in the Russian Federation and the United States that provides the means for systematic collection of information about the environment and the efficient management of data gathered from community-based environmental observations. The overall goal of BSSN is to increase our understanding and knowledge of pan-Arctic processes, thereby enhancing the ability

of scientists, Arctic residents, and governments to predict, plan, and respond to environmental changes and their subsequent socio-economic effects.

ECORA aims to address threats to habitats, fragmentation of ecosystems, and disruption of ecological balance, especially in lowland tundra, forest tundra, and coast and near shore marine areas. The main goal of ECORA is the harmonization of relationships between environmental protection, industries, and indigenous populations leading to the sustainable use of biodiversity in the Russian Arctic, as demonstrated in the three Model areas through implementation of integrated ecosystem management (IEM) strategies.

SAOs recommend Ministers to:

- ***Recognize that the conservation and sustainable use of arctic flora and fauna is a necessary condition for sustainable development, and for the current and future well being of the Arctic region and its inhabitants.***

- ***Acknowledge that successful conservation of the natural environment while allowing for economic development requires baseline data and trend analyses of Arctic biodiversity, habitats and ecosystem health.***

- ***Note that climate change poses a major stress to the Arctic's biodiversity and acknowledge that understanding the effects of global change on the status and trends of arctic biodiversity will continue to be an important focus during the Danish Chairmanship of the Arctic Council.***

- ***Recognize that the Arctic Biodiversity Assessment (ABA) and the Circumpolar Biodiversity Monitoring Programme (CBMP) is an important contribution towards understanding the impacts of climate change and other stressors on nature and biodiversity, and the adaptability and sustainable use of all living resources in the Arctic.***

- ***Acknowledge the stress being placed upon ice dependent species due to sea ice decline, and recognize that permafrost change poses a challenge to the maintenance of ecosystem health, with implications for the adaptation of Indigenous peoples to climate change.***

- ***Decide that the Arctic Biodiversity Assessment 2010 Arctic Highlights Report be presented as an important Arctic Council contribution to the United Nations International Biodiversity Year in 2010 and as a direct contribution to the Convention on Biological Diversity to measure progress towards the United Nations 2010 biodiversity target,, and encourage all Arctic Council members to support the completion of the ABA.***

- ***Support CAFFs cooperation with international organisations towards the conservation and monitoring of Arctic Biodiversity.***

- ***Reiterate the Arctic Council's endorsement of long term arctic biodiversity monitoring through the CBMP and encourage countries to take leadership and contribute to the CBMPs Expert Monitoring Groups (Marine, Coastal, Freshwater, Terrestrial, Vegetation and Terrestrial Fauna).***

- ***Acknowledge the CBMP as a major Arctic Council contribution to the Sustaining Arctic Observing Networks (SAON) process and the International Polar Year and its legacy.***

- ***Emphasize the importance of Arctic indigenous peoples and their traditional knowledge in conservation and sustainable use of Arctic biological resources.***

- ***Recognise that the community monitoring plans of the CBMP will contribute to the understanding and use of community-based monitoring of the Arctic's living resources, provide a foundation for continued cooperation with indigenous peoples of the Arctic, and support the integration of traditional knowledge with scientific research.***

- ***Welcome projects such as the Bering Sea Sub Network as a contribution to developing a pan-arctic observing systems with the participation of indigenous and other Arctic residents.***

- ***Note with appreciation the work of the CAFF Seabirds and Flora Expert Groups to develop conservation plans and strategies, and the success of the ECORA and the Bering Sea Sub Network projects towards building capacity for community-based monitoring and conservation of Arctic biodiversity.***

- ***Welcome the new sea-bird harvest report.***

- ***Take note of the monitoring plans developed for arctic sea-birds and marine mammals.***

- ***Welcome the update report on the ECORA project.***

- ***Endorse the CAFF Flora group's efforts to develop a Circumpolar Boreal Vegetation Map.***

- ***Endorse the conservation plans and action strategies for Arctic seabirds developed by CAFFs Sea Bird expert group on murres, eiders and ivory gull.***

4. Administration and Organization of the Arctic Council

4.1. Arctic Council Secretariat

An Arctic Council Secretariat was established in Tromsø, Norway for the Norwegian, Danish and Swedish chairmanships from 2006 to 2013, and is contributing to the coordination of work among Senior Arctic Officials and Working Groups. In addition it serves as a point of first contact and an instrument for outreach for those interested in the Council and its activities.

SAOs recommend Ministers to:

- ***Welcome Norway's hosting of the Arctic Council Secretariat in Tromsø, Norway for the period of 2007-2013, in cooperation with Denmark and Sweden, and appreciate the Secretariat's contribution to the increased efficiency of the work of Arctic Council.***

4.2. Indigenous Peoples' Secretariat

SAOs recommend Ministers to:

- ***Reaffirm the continued support of the Member States for the Indigenous Peoples Secretariat.***
- ***Request Member States to further explore ways and mean to enhance the participation of Permanent Participants in the activities of the Arctic Council.***
- ***Recognize the importance of providing adequate funding to Permanent Participants to support their preparations for, and participation in, the Arctic Council and its Working Groups.***

4.3. Outreach and communication

The 2006 SAO report to Ministers encouraged the Chairman of the SAOs to "continue, in that capacity, outreach efforts of the Arctic Council aimed at the international community, regional organizations and academic research communities with the aim of increasing awareness of the work of the Arctic Council and exploring possibilities for cooperation."

As a key priority of the Norwegian Chairmanship program, and in cooperation with the forthcoming Danish and Swedish Chairmanships, the Arctic Council Secretariat was established in Tromso, Norway for the period 2007-2013. The Arctic Council Secretariat became fully operational on August 1, 2007 and is making important contributions to improving the efficiency of the work of the Arctic Council, including advancing outreach and information sharing activities of the Arctic Council.

The Arctic Council website (http://www.arctic-council.org) has been completely redesigned and regularly updated to ensure that it is a practical and useful tool for all interested parties.

Communication, outreach, and engagement of relevant expert and stakeholder bodies are important matters for the Working Groups. Working Groups continued to enhance their websites, communication and outreach products and activities and their interaction with international conventions and organisations.

The Arctic Portal hosted by Iceland (http://www. Arcticportal.org) has become a practical tool for communicating a range of Arctic information, including the proceedings of important conferences and workshops, and hosting specific content for Arctic projects and activities, for example the new "reindeer portal" developed by the World Reindeer Herders Association. The Arctic Portal receives over 1000 visits per day.

SAOs recommend Ministers to:

- ***Request SAOs, as a standing item on the SAO agenda, to continue to examine the organization of the Arctic Council with a view to improve its effectiveness and efficiency and to report back to Ministers in 2011.***
- ***Reiterate the need for close cooperation among Arctic Council Working Groups to ensure consistency and complementarities among Council projects and activities.***
- ***Request the SAOs to continue to monitor opportunities to promote the work of the Arctic Council and to extend Arctic Council outreach efforts.***
- ***Request, under the guidance of the SAOs, development of guidelines for the Arctic Council's engagement in outreach activities and establishment of an Arctic Council communication and outreach plan based on common priorities,***
- ***Request Working Groups to include a communication and information dissemination strategy, including outreach to indigenous peoples and other Arctic residents, as an integral part of Working Group project proposals.***

4.4. Engagement of Observers in the Arctic Council

Observers are an increasingly important part of the Arctic Council network and efforts need to be taken to ensure opportunities for accredited Observers to participate in and contribute to the work of the Council. In addition, Observers play an important role informing non-Arctic states and stakeholders of issues in the Arctic region. Observers are seeking more dialogue with the Council on their role and level of engagement. There is a growing number of new applications for observer status in the Arctic Council. To facilitate, a standard form has been developed for applications for Observer status specifying the detailed information required by applicants to fulfill Annex 2 of the Arctic Council Rules of Procedure.

The Arctic Council and its Working Groups have clear instructions to engage accredited Arctic Council Observers and are also authorized to invite expertise from non-observer states and organizations. No new mandate is envisioned and the following recommendations are intended to strengthen the engagement of Observers within the existing Rules and Procedures.

To address these issues, SAOS agreed to:

- ***Engage Observers more directly in discussions of Arctic Council business at SAO meetings and institute a biennial "Symposium" for more general information exchange with both Working Groups and Observers.***

- ***Continue efforts to enhance Observer participation in Working Group activities.***

SAOs recommend Ministers to:

- ***Screen new applications for Observer status carefully against the established criteria in order to meet the best interests of the Council, Member States and PPs.***

- ***Note the need to give priority to applicants that have demonstrated a concrete interest and ability to support the work of the Arctic Council, including through partnerships with Member States and Permanent Participants and bringing Arctic concerns to global decision making bodies.***

- ***Decide to review, under the guidance of the SAOs and Permanent Participants, accredited Arctic Council Observers, as per Section 4 of Annex II of the Rules and Procedures, and request information necessary to facilitate the first review, including Observer reports of recent contributions to the work of the Arctic Council and engagement of its Permanent Participants.***

- ***Request SAOs to evaluate this information and recommend to Ministers any amendments to the list of Observers, including to re-accredit Arctic Council Observers, or to withdraw Observer status. Thereafter, Observer status shall be reviewed and reported to Ministers by SAOs at regular four-year intervals.***

- ***Encourage Working Groups to continue to strengthen relations with accredited Arctic Council observers. In addition, request Working Groups to draft for SAO approval a standard approach to the accreditation of Working Group Observers.***

4.5. Working Group Activities and Organization

SAOs recommend Ministers to:

- ***Welcome with appreciation the Chairmanship countries for the Working Groups during the 2007-2009 period:***

  ACAP: United States followed by the Russian Federation
  AMAP: United States
  CAFF: Greenland
  EPPR: Norway
  PAME: Canada
  SDWG: Norway

- ***Welcome with appreciation the countries that will provide Chairs for the Working Groups during the 2009-2011 period:***

  ACAP: Russian Federation
  AMAP: Canada
  CAFF: Iceland

EPPR: United States
PAME: Norway
SDWG: Denmark/Greenland

- ***Welcome with appreciation the continuing offers of Russia to host the ACAP secretariat, of Norway to host the AMAP secretariat, of Iceland to host the CAFF and PAME secretariats, of Canada to host the SDWG secretariat and the offer of the United States to host the EPPR secretariat.***

- ***Welcome with appreciation the continuing offer of Denmark/Greenland to host the IPS.***

- ***Welcome and acknowledge the work done by the Working Groups during the period 2006-2009, taking note of the Progress Reports 2006-2009 and approve the work plans for 2009-2011 (see Appendices).***

- ***Thank the Member States, Permanent Participants, Observers and all organizations that contribute to Arctic Council projects.***

- ***Thank Norway for the activities it has undertaken through its Chairmanship of the Arctic Council during the period 2006-2009.***

- ***Welcome the offer of the Kingdom of Denmark to host the Arctic Council during the period 2009-2011 and to host the Seventh Ministerial meeting in 2011.***

APPENDIX I

ACAP Work Plan 2009-2011

ACAP will continue to implement projects approved by the Ministers to:

- Develop an Integrated Hazardous Waste Management Strategy (IHWMS) focusing on the Northern Regions of the Russian Federation.
- Complete inventory development (Phase I) and safe storage (Phase II) of obsolete pesticides in the remaining Russian Arctic and sub-Arctic priority Regions. Demonstrate environmentally sound destruction of 100 tons of obsolete pesticides (Phase III).
- Assess the performance of Russian hazardous waste destruction facilities to identify sustainable solutions for destruction of hazardous substances, including obsolete pesticides, PCBs and other POPs in an environmentally sound manner using Russian and international standards.
- Implement control technologies for reduction/elimination of dioxin/furan releases at pulp and paper mills, timber mills, cement factories and municipal waste treatment facilities in the Russian Arctic.
- Complete the feasibility study on improved systems for management of mercury-containing waste in Northwest Russia, prepare Terms of References and business plan for a demonstration project in one or two regions of Northwest Russia and implement demonstration projects to address additional mercury-release sectors in Russia (products, coal-fired power plants, non-ferrous metal production).
- Continue further cooperation with UNEP Global Mercury Partnership in achieving measurable mercury reductions of uses and releases at chlor-alkali facilities in the Russian Federation including improvement of storage facilities for mercury-containing waste.
- Cooperate with Ministry of Natural Resources and Environment of Russian Federation to implement environmentally sound management demonstration projects for PCBs in Russia under IHWMS according to the Stockholm Convention.
- Continue work on brominated flame retardants (BFR) as an information exchange network and simultaneously continue the identification of Phase II activities on reduction and elimination of BFRs.
- Establish a new PSG to address contaminants in indigenous communities in remote areas of the Arctic to reduce human exposure to contaminants. Terms of Reference will be developed.
- Implement model projects on safe handling, storage and treatment of local sources of contamination on Franz Josef Land (FJL) in collaboration with AMAP.
- Continue cooperation with the Barents Euro-Arctic Council and NEFCO to address "hot spots" in the Arctic.
- Continue cooperation with NEFCO to finance and facilitate implementation of ACAP projects and mobilize the Project Support Instrument (PSI).
- Collaborate with other WGs of the Arctic Council (AMAP and SDWG) on e.g. quick-action climate mitigation strategies.

- Initiate co-operation to address the contamination issues of the oil and gas sectors in the Arctic based on the findings and recommendations of the Assessment of Oil and Gas Activities in the Arctic by AMAP.
- Facilitate implementation of international actions addressing mitigation of mercury and persistent organic pollutants.
- Enhance outreach and information exchange to promote successful projects of ACAP.

APPENDIX II

AMAP Work Plan 2009-2011

AMAP Work plan for 2009 – 2011 and tentative list of deliverables 2009–2013:

ASSESSMENTS:

- Publish the 2009 AMAP State of the Environment Report on Selected Pollution Issues, and the related 2009 AMAP Update Report on Selected Climate Issues of Concern, and present and disseminate these reports at appropriate venues.

Human Health

- Publish the 2009 Human Health scientific assessment report and present the assessment at appropriate venues, including a joint presentation with the results of the Canadian Northern Contaminants Programme health studies at a conference in Iqaluit, Canada in June 2009.

POPs

- Arrange for publication in scientific journals of the 2009 POPs scientific assessment and present the assessment at appropriate venues.

Radioactivity

- Publish the 2009 Radioactivity scientific assessment report and present the assessment at appropriate venues.

Update on Mercury in the Arctic

- Facilitate the work of AMAP Mercury Expert Group to deliver assessment in 2011.

Oil and Gas

- Follow-up AMAP-related recommendations as presented in the Executive Summary to the Arctic Oil and Gas 2007 report.

Arctic Council Cryosphere Project - SWIPA

- Continue to implement the SWIPA-project.
    - Conduct workshops and meetings for the different SWIPA components and modules to develop the component reports, and meetings of the SWIPA Integration Team to integrate and synthesise the different components of SWIPA.

- Produce the 2011 scientific report(s) and the 2011 synthesis report.
- Present a preliminary report on the Greenland Ice sheet at COP 15 (2009).
- An initial report on the Greenland Ice Sheet component is currently under preparation and an extended summary will be provided for the April 2009 Ministerial Meeting, with the intention that it will be accepted for distribution at COP15.
- Produce the 2009 Greenland Ice Sheet scientific report and the 2009 summary report for COP 15.
- Implement the Communication Strategy for SWIPA
- Present SWIPA at appropriate venues (e.g., COP15)
- Present the 2011 scientific report(s) and the 2011 synthesis report at appropriate venues.
- Develop recommendations pertaining to the SWIPA, as requested.
- Produce fact-sheets, films, web based information, etc., as appropriate.

Non-CO2 drivers of climate change

- Compile a report on the current, planned and potential activities regulating emissions of non-CO2drivers and evaluate possible further mitigation actions.
- Develop recommendations for national and international follow up action.
- Report the results of the above to the 2011 Ministerial meeting.
- Consult with appropriate UNEP bodies about UNEP considering incorporating information on black carbon and the need to mitigate emissions for Arctic climate benefit into its climate change programme.

MONITORING and RESEARCH

AMAP Trends and Effects Monitoring Programme

- Continue ongoing monitoring and assessment activities, including (long-term) temporal trend studies, and monitoring of spatial trends, human health, and biological effects in the Arctic, with special emphasis on the collection of information on new contaminants, assessment of the combined effects of climate/UV and contaminants, preparing reports on emerging issues, and improved information on sources of contaminants.
- Further develop appropriate monitoring, assessment, and special climate related projects to implement ACIA follow-up.
- Follow-up AMAP-related recommendations as presented in the Executive Summary to the Arctic Oil and Gas 2007 report.

- Assess the past ten years of monitoring and develop plans for the next ten years, taking account of requests from Ministers and including the new monitoring needs and latest recommendations from science.
- Conduct a review of AMAP Trends and Effects Monitoring Programme (strategy and implementation) and revise the AMAP Monitoring Programme Guidelines, for the period after 2010, for presentation to Ministers in 2011.
- Hold a workshop in autumn of 2009 to discuss and coordinate the revision of the AMAP Monitoring Programme.
- Complete the AMAP project on climate and contaminants and produce the report on this activity.
- Implement the EU FP7 Arc Risk project (assuming it is funded) and seek support to implement complementary activities in Russia and the United States.

Sustaining Arctic Observing Networks - SAON

- Continue efforts to enhance, coordinate and integrate circumpolar monitoring efforts.
- Continue development of SAON and participate and represent the Arctic Council in fora discussing the future of SAON.
- If agreed, provide Secretariat support for such efforts.

Short lived climate forcers

Continue to assess the state of the science on short lived climate forcers and their impact on the Arctic.

- Identify gaps in observations of short lived climate forcers and promote new observations to fill those gaps
- Assess and seek to improve the capacity of climate models to address short lived climate forcers.

Climate research and improving predictive capability

- Facilitate further development of reliable regional climate models.
- Further developing the AMAP programme activities related to combined effects of climate change and other impacts.
- Facilitate studies on the Arctic carbon cycle to identify key sensitivities and major feedbacks to regional and global climate

Use of Unmanned Aircraft Systems for monitoring in the Arctic

- Examine further extended use of unmanned aircraft in the Arctic.

- Establish a project team comprising scientists and representatives of civil aviation authorities to review the issues associated with and to facilitate and coordinate the safe use of unmanned aircraft systems for research and monitoring in the Arctic

OTHER OUTREACH and COORDINATION ACTIVITIES

- Coordinate an 'Arctic Event' at COP 15 in cooperation with Denmark and other AC WGs.
- Further develop cooperation with UN ECE LRTAP groups, in particular EMEP, and the task forces on Hemispheric Transport of Air Pollutants and Measurements and Modelling.
- Continue cooperation with UNEP on the Stockholm Convention and the UNEP Mercury process with respect to provision of relevant information and harmonization of methodologies for monitoring, etc.
- Circulate AMAP work plan to AC observing countries and IASC member countries for distribution to relevant institutes in their countries.
- Complete the publications of the Oil and Gas Assessment scientific assessment reports and follow-up on recommendations, as appropriate.
- Continue to coordinate and expand activities to promote quality assurance/quality control of AMAP monitoring data, including the circumpolar Arctic Contaminants QA/QC monitoring program spearheaded by the Canadian Northern Contaminants Program, and the AMAP human health laboratory intercalibration programme.
- Continue to coordinate and expand activities to ensure appropriate data reporting and archiving, including reporting of data to AMAP thematic data centres.
- Produce additional fact sheets reflecting AMAPs assessments.
- Continue to support ACAP projects, in particular those on mercury, obsolete pesticides, dioxins and furans, FJL clean-up, and other relevant projects as identified in the work plan for ACAP, including the development of AMAP/ACAP joint fact sheets.
- Continue a close cooperation with international bodies to avoid duplicating work and to coordinate work programmes in an efficient and cost effective manner.
- Participate in activities to compile and synthesis results of the IPY.
- Participate in the further development and implementation of special projects such as the project on the Lena and other Siberian rivers, and follow-up of the PTS project, and communicate this to SAOs for their consideration.
- Participate in relevant international meetings and symposia to communicate AMAP results and information on ongoing activities.
- Support the implementation of the CBMP as the vehicle for implementation of the coordinated AMAP-CAFF monitoring projects.
- Implement, together with SDWG the Human Health Risk Reduction Project, relevant climate-related projects and OGA follow-up activities.

- Continue to coordinate GIS related activities with EPPR and other WGs.
- Improve the financial support for the AMAP work.

List of possible AMAP deliverables and timeline for their production during the coming years

For	Delivery date to AMAP WG	Product	Expert group
Arctic Council			
AC 2009	2009	AMAP 2009 State of the Arctic Environment report on selected pollution issues	AMAP WG
AC 2009	2009	AMAP 2009 Update on Selected Climate Issues of Concern	AMAP WG
AC 2009	2009	Extended summary of initial report on the SWIPA Greenland Ice Sheet component	SWIPA GRIS Component group
AC 2011	2010	Comprehensive update assessment of mercury in the Arctic	AMAP Hg assessment group
AC 2011	2010	SWIPA component and module scientific assessment reports	SWIPA Component groups
AC 2011	2010	SWIPA integration and synthesis report	SWIPA Integration Team
AC 2010/2012	2011/2013	Update assessment on climate and contaminants	POPs/Hg/metals expert groups and/or climate expert group
AC 2012/2014	20011/2013	Comprehensive update assessment on Arctic climate change (impacts, including ozone and UV)	Climate assessment group
AMAP WG			

AMAP 2010	2010	Updated version of the AMAP Trends & Effects Programme	All AMAP expert groups
External Groups (UNEP, UN ECE)			
UNEP Governing Council	2009	Mercury time trend data products	Mercury Expert Group
UN ECE Metals Protocol / task force HTAP	2009	Gridded global anthropogenic mercury emissions to air datasets (2005 and 2020 scenarios)	AMAP Secretariat
UNFCCC COP15	2009	Presentation of the preliminary report on the SWIPA Greenland Ice Sheet component and arrangement of an Arctic side event/Arctic Day	CEC
UNEP Stockholm Convention	2009	Protocols for monitoring contaminants in human blood	HHAG
UNEP Governing Council	2011	AMAP Mercury assessment	Mercury Expert Group

APPENDIX III

CAFF Work Plan 2009-2011

The Conservation of Arctic Flora & Fauna Working Group (CAFF) is the Biodiversity Working group of the Arctic Council. It is guided by the CAFF Strategic Plan for the Conservation of Arctic Biological Diversity and biennial Work Plans. CAFFs mandate is to address the conservation of Arctic biodiversity, and to communicate the findings to the governments and residents of the Arctic, helping to promote practices which ensure the sustainability of the Arctic's living resources.

In order to successfully conserve the natural environment and allow for economic development requires baseline data on long-term status and trends of Arctic biodiversity, habitats and ecosystem health. CAFF's projects provide data for informed decision making in resolving conflicts which are now arising in trying to both conserve the natural environment and permit regional growth. To this end CAFFs activities are centred around cooperation on:

- Nature and biodiversity management issues
- The use of living resources in the arctic
- Climate change
- Adaptability
- Sustainability
- Communication and outreach

The 2009 – 2011 Work Plan places a strong focus on Climate Change and building upon the recommendations contained in the Arctic Climate and Impact Assessment (ACIA). The ACIA and CAFF´s Flora & Fauna: Status and Conservation report both indicated that it was necessary to consider the status and trends of biodiversity in the Arctic. The ACIA called for improved capacity to monitor and understand changes in the Arctic and to improve and enhance long-term Arctic biodiversity monitoring. The Arctic Biodiversity Assessment and the Circumpolar Biodiversity Monitoring Program are two of the primary vehicles via which CAFF is responding to these calls. CAFF will also place a strong focus on the International Polar Year (IPY) both through benefiting from IPY generated research and contributing to IPY legacy.

This document outlines the projects and activities which CAFF plans to undertake for the 2009 – 2011 Ministerial period. The CAFF Work Plan is not fixed for the inter-ministerial period, but may change according to new opportunities and priorities. Both CAFF Working Group and Board meetings can amend the CAFF Work Plan.

Project/Activity	Description	Delivery Date	Lead
Arctic Climate Impact Assessment Follow-up			
The Arctic Biodiversity Assessment (ABA)	Conduct the *Arctic 2010 Biodiversity Highlights Report*	2009	Finland, Greenland /Denmark, United States
	Conduct the ABA Scientific Report	2013	Finland, Greenland /Denmark, United States
	Update the map of protected areas in the Arctic	2009	Canada
The Circumpolar Biodiversity monitoring Programme (CBMP)	Implement the CBMP	ongoing	Canada
	Hold a workshop on the monitoring of protected areas	2009	Canada, United States
	Create a web based Seabird Information Network (SIN) in conjunction with UNEP-WCMC and CBMP	2009 - 2011	United States
	Continue development of the Arctic Report Cards	ongoing	Canada
	Development of the Expert Monitoring Groups (representing the major Arctic biomes - marine, coastal, freshwater, terrestrial vegetation, and terrestrial fauna)	ongoing	The CAFF Chair
	Development of long-term integrated monitoring plans for each of the Arctic biomes	ongoing	The CAFF Chair
	Development of the CBMPs Indicators and Indices	ongoing	The CAFF Chair
CAFF Expert Groups			
CAFF Flora Group	Complete a report on checklists	2009	Iceland and

(CFG)	of Arctic lichens and bryophytes		Canada
	Develop the Circumpolar Boreal Vegetation Map	ongoing	United States
	Develop collaboration within CAFF to delimit floristic regions in the circumpolar Arctic	2009 - 2011	United States, Canada, Russia
	Develop interlinked Arctic Flora and Vegetation databases	2009 - 2011	To be determined
	Encourage the use of GLORIA, a worldwide monitoring network for climate change impacts on the ecology of high mountain systems	ongoing	United States, Canada
	Monitoring vegetation change in Greenland	2009 - 2011	United States
	Create a CFG Education/Outreach Subcommittee	2009 - 2011	Canada
CAFF Seabird Group (CBird)	Complete the circumpolar Eider conservation strategy	2009 - 2011	Canada
	Complete the Circumpolar Murre conservation strategy	2009 - 2011	United States
	Complete the report on birds of Arctic conservation concern	2009 - 2011	Finland/Greenland
	Complete the report on seabird gillnet bycatch in commercial fisheries in the Arctic	2009 - 2011	United States
	Develop a Thick-billed Murre population model for the Atlantic region	2009 - 2011	Canada
	Write paper for peer-reviewed journal on the decline of Glaucous Gulls in the Arctic	2009 - 2011	Iceland
	Complete a peer-reviewed publication on seabirds and climate change	2009 - 2011	United States, Norway, Canada
	Complete the circumpolar seabird monitoring network	2009 -	Iceland

	framework	2011	
	Complete a circumpolar seabird monitoring plan	2009 - 2011	United States, United Kingdom
	Complete the report on the status and trends of circumpolar seabird	2009 - 2011	Iceland, United States
	Complete an analysis of population and productivity data on circumpolar Black-legged Kittiwake status and trends	2009 - 2011	Norway, United States
	Implement the CBird-STAMP project	2009 - 2011	Norway, United States
	Conduct the Arctic Tern Project	2009 - 2011	Greenland
	Develop an online circumpolar seabird colony database	2009 - 2011	Norway, United States, Canada
CAFF Projects			
ECORA	Complete the ECORA project in the three model areas in Russia	2009 - 2011	Russia, Norway, RAIPON, UNEP/GRID-Arendal
	Biodiversity, traditional nature use and climate change in the Russian Arctic: assessment and adaptation strategy development		To be determined
The Bering Sea Sub Network (BSSN)	Continue to implement the Bering Sea Sub-Network: International Community- based Environmental Observation Alliance for Arctic Observing Network (BSSN) -	ongoing	Aleut International Association
Cooperation with other Working Groups			
Sustaining Arctic Observing Network	Work with Arctic Council Working Groups on the SAON process	ongoing	CAFF Chair
AMAP	The CAFF-AMAP Coordinated Monitoring Effort	ongoing	CAFF Chair

AMAP and EPPR	Work on an Arctic Council spatial strategy with AMAP and EPPR	ongoing	CAFF Chair
PAME	Implement priority CAFF-relevant action items of the Arctic Council's Arctic Marine Strategic Plan (AMSP)	ongoing	To be determined
Cooperation with International Conventions, Agreements and Organizations			
Cooperation with UNEP-WCMC and UNEP/GRID-Arendal		ongoing	CAFF Chair
Cooperation with the International Union for the Conservation of Nature (IUCN)		ongoing	*CAFF Chair*
Cooperation with the oil and gas industry on biodiversity conservation efforts		ongoing	*CAFF Chair*
Cooperation with the Convention on Biological Diversity (CBD)		ongoing	*The CAFF Chair*
Cooperate on the development of the Sustaining Arctic Observing Network (SAON) process		ongoing	*The CAFF Chair*
Participate in the planning and development of the International Polar Year (IPY)Legacy issues		ongoing	*The CAFF Chair*
Cooperation with the Agreement on the Conservation of African- Eurasian Migratory Waterbirds (AWEA)		ongoing	*The CAFF Chair*
Communications and Outreach			
Participate in relevant international symposia and international meetings to communicate CAFFs results and ongoing activities		ongoing	*The CAFF Chair*
Develop promotional brochures, posters and other communication products for CAFF		ongoing	*The CAFF Chair*
Develop promotional brochures, posters and other communication products for the CBMP		ongoing	*Canada and The CAFF Chair*
Development of CAFF publication series		ongoing	*The CAFF Chair*

APPENDIX IV

EPPR Work Plan 2009-2011

Oil and Gas

The Russian project Development of Safety Systems in the Arctic while implementing infrastructural and other Economic Projects will continue with the international exercise "Barents Rescue" planned for September, 2009.

The Russian project Arctic Rescue will continue with a seminar planned for August 2009 in Anadyr, Russia entitled "Emergency prevention and the coordination of emergency responses in Arctic conditions including consequences for the environment".

The Norwegian project "Behaviour of Oil and other Hazardous Substances in Arctic Waters (BoHaSA) will start in 2009 and be finalized in 2010.

A project "Co-operation on oil spill and HNS response in the Arctic" will start in 2009. The background for the project is to consider the existing regional agreements in relation to the future challenges in the Arctic based on oil and gas activity, shipping and the gap-analysis prepared by EPPR in 2000.

Radiation

The source control prevention project will continue with analysis of transportation of radiation hazardous materials at Russia's Scientific and Research Institute of Atomic Reactors. The project will include application of the Risk Assessment methodology, and will be conducted through 2010.

An emergency exercise will be conducted in 2010 at the Nerpa Shipyard in the Murmansk region.

Work will continue through 2009 to enhance radiological technical support to EMERCOM's National Crisis Situation Management Center, including development of databases, manuals, and procedures for interfacing with multiple agencies.

The Community Radiation Information Project is continuing with development of tools to help specialists communicate radiation and emergency information with the public and media.

Three additional Rosatom facilities will be outfitted with site specific software to model airborne radiological dispersion and contamination from an accident, providing critical information to decision makers.

Additional technical projects for EPPR to sponsor to improve capabilities to analyze and respond to radiation related incidents or accidents were approved by EPPR at the March 09 meeting. These projects continue the focus on improving emergency response capabilities in the Arctic modeling of airborne radiation dispersion, emergency radiation data collection and analysis, and training.

The project names are:

- Emergency Rescue team Equipment. The aim of the project is to upgrade the equipment of the Emergency Response Team at the Zvezdochka facility

and enhance the level of preparedness to radiation accidents (following the results of the "Arctic-2008" exercise conducted at the facility.

- Radiation Survey Simulation System. The aim is to develop a site-specific modeling system for training and exercise purposes to simulate a radiological accident at two specific facilities.

Natural disasters

EPPR and Northern Forum will continue to share information regarding catastrophic flooding on Northern Rivers.

The project "Managing the cold conditions – a systematic approach" will continue for 2009 - 2011.

EPPR will cooperate with other organizations by:

- Working together with AMAP and CAFF on the Arctic Council Spatial Strategy
- Maintain liaison with PAME and support relevant PAME projects as a follow up of the AMSA report
- Maintaining liaison with the University of the Arctic
- Maintaining liaison with Nordic Mapping Agencies on their project on Arctic Mapping
- Undertaking activities with the Northern Forum that support the EPPR agenda
- Maintaining liaison with the oil industry and other relevant organizations with the aim to enhance oil spill prevention and preparedness in the Arctic

APPENDIX V

PAME Work Plan 2009-2011

The PAME working group is the Arctic Council body that addresses policy and non-emergency pollution prevention and control measures related to the protection of the Arctic marine and coastal environment from land and sea-based activities.

The PAME Work Plan 2009 – 2011 was developed according to its mandate and priorities of the Arctic Council Chairmanship. This Work Plan is based on three objectives followed by a set of specific actions which in some instances represent a continuation of ongoing activities. The aim is to respond to emerging issues in line with the priorities of the Arctic Council Chairmanship and further advance the implementation of specific strategic actions of the Arctic Marine Strategic Plan (2004) that outlines the overall direction of the Arctic Council for the protection of the Arctic marine environment.

Objectives and Actions

OBJECTIVE I:

Improve knowledge and respond to emerging knowledge of the Arctic marine environment

RATIONALE:

The Arctic Ocean stands at the threshold of significant changes. Climate change and the melting of sea ice have a potential impact on vulnerable ecosystems, the livelihoods of arctic inhabitants and coastal communities. The utilization of natural resources is also changing.

Continued sea ice reductions will likely lengthen the navigation season in all regions and increase marine access to the Arctic's natural resources. Activities such as development of hydrocarbon and mineral resources, cruise ship tourism and commercial fishing are expected to expand with increased accessibility and marine transportation in the Arctic. This will require greater infrastructure support and will pose increased environmental risks to the Arctic marine environment and its ecological processes, including the introduction of alien species and potential for pollution. These challenges are further addressed in the follow up activities of the Arctic Marine Shipping Assessment (AMSA), the Arctic Council Regional Programme of Action (RPA) and the Arctic Council Offshore Oil and Gas Guidelines.

ACTIONS:

Actions	Activities	Lead
1) Review the assessment of Arctic marine shipping (see 7.1.5) and, based on the findings, develop recommendations to the International Maritime Organization (IMO) and others, as appropriate, to guide the management of Arctic marine shipping. *(From section 7.2.2 in the AMSP)*	Activities to be added based on the outcomes/findings of the approved AMSA and as agreed to by SAOs/Ministers in 2009.	**TBD**
2) Follow up on the Arctic Offshore Oil and Gas Guidelines (2009)	Examine the need to develop general guidelines for the scope and composition of EIAs for Artic offshore oil and gas activities.	**USA**

OBJECTIVE II:

Determine the adequacy of applicable international/regional commitments and promote their implementation and compliance

RATIONALE:

Promote the implementation and compliance of applicable international instruments and governmental commitments through increased coordination and collaboration and trends towards integrated approaches such as ecosystem approaches in addressing the challenges of the coastal and marine environment. The environment faces pressure from multiple uses, and an integrated ecosystem approach to management requires a holistic management perspective that minimizes impacts on the environment and integrates thinking across environmental, socio-economic, political and sectoral realms.

The Arctic Council has an opportunity to provide international leadership on the global sustainable development agenda through the adoption and application of an integrated, ecosystem-based approach to managing the Arctic marine environment, consistent with existing legal framework.

Many countries are now in the process of reviewing and developing their oceans management policies in order to base their management and use of the oceans on ecosystem considerations. Differences in circumstances and contexts have to be taken into consideration as ecosystem-based oceans management is context sensitive. There is not one single method for ecosystem-based management. A number of different practices and understandings of the concept appear to work. As a result, PAME is expanding its work in this regard to try to reflect the breadth of approaches that may be applied to achieve ecosystem-based management.

ACTIONS:

Actions	Activities	Lead
1. Continue the work on ecosystem-based approach *(7.4 in the AMSP)*	(i) Examine how the reported activities and conclusions from the BePOMAr-project could be followed up by the Arctic states and how these activities can be coordinated with activities in the LME process (Project description to be developed by PAME and approved by the SAO intersessionally).	**NORWAY**
	(ii) Develop and implement pilot projects to operationalize the 5 module LME assessment and management approach: ➢ US/Canada (Beaufort Sea LME) ➢ US/Russian Federation (West Bering Sea LME	**USA/CANADA** **USA/RUSSIA**
	(iii) The LME Expert Group will review proposals for the 2 LME pilot projects in relation to the applicability of the indicator suites selected as part of the 5-module operationalization activity.	**USA**
	(iv) The LME Expert Group will take into consideration any proposed boundary changes to the Arctic LME map.	**USA**
	(v) Maintain the working map of 17 Arctic LMEs	**USA**
	(vi) Report on the use of the 5 modules and assessment underway by the US in areas within and proximal to the PAME area including in the Gulf of Alaska and East Bering Sea LMEs.	**USA**
	(vii) Review the Terms of Reference of the ecosystem based management/LME group.	**USA/NORWAY**
	(viii) Maintain liaison with AMSA, CAFF, CBMP, SDWG and AMAP	
2) Continuing the implementation of the Regional Programme of Action (RPA) *(From section 7.3.3 in the AMSP)*	(i) Contribute to the 2011 GPA review. *(From section 7.7.2 in the AMSP*) through correspondence/network group to work in advance of the next GPA review conference.	**PAME Chair/Secretariat**
	(ii) Further development of PAME website to provide sources for best practices in Arctic coastal zone management including adaptation to climate change.	**PAME Chair/Secretariat**
Proposed New PAME Project on Arctic Ocean Review (AOR) (project description in Appendix I)	Phase I to include scoping, outreach, communication and information gathering through hosting thematic workshops, compiling and preparing reports, and disseminating findings from	**Iceland** **Norway** **Canada**

Actions	Activities	Lead
	other Arctic Council activities on the Arctic marine environment.	

OBJECTIVE III:

Facilitate partnerships, programmes and technical cooperation and support communication and outreach both within and outside the Arctic Council.

RATIONALE:

There is a need to coordinate work with other working groups of the Arctic Council, regional and international organizations and programmes, local authorities and indigenous organizations in an effort to promote capacity building, sharing of information and technology transfer on the state of the Arctic marine environment

ACTIONS:

Actions	Activities	Lead
1) Information outreach and efforts to increase cooperation and collaboration with international/regional organizations. *(From section 7.5.2 in the AMSP)*	(i) Provide AMSP progress reports to the Arctic Council with assistance of all Arctic Council subsidiary bodies. (ii) Information exchange with UNEP Regional Seas Programme regions, and other regional programs. (iii) Follow the development of the UNEP´s Ocean Strategy which is expected to include the following four areas of work: • Healthy seas and oceans (pollution) • Marine ecosystems for humanity • Reconciling resource use and conservation • Vulnerable people and places (iv) Liaise with fisheries organizations and organizations associated with marine-related conventions and agreements to inform and be informed of possible cooperative opportunities including information exchange.	**PAME Chair/Secretariat** **PAME Chair/Secretariat** **PAME Chair/Secretariat** **PAME Chair/Secretariat**
2) Build the capacity and engagement of indigenous communities and other Arctic inhabitants. *(From section 7.6 in the AMSP)*	(i) Ongoing development of communication products and activities to support understanding and involvement in implementation of the AMSP. *(From Section 8.0 in the AMSP)* and other PAME-related activities. (ii) Promote oceans education and training related to best operating practices through: o PAME homepage o Brochures and posters o Providing our information to other	**PAME Chair/Secretariat** **PAME Chair/Secretariat**

	organizations for posting on their websites.	
4) Collaborations with Arctic Council Working Groups	(i) Continue to respond to the Arctic Climate Impact Assessment (ACIA) and the taking account of new information on climate change. *(From section 7.2.1 in the AMSP)* (ii) Continue to respond to findings and recommendations of the Oil and Gas Assessment (ii) Monitor and consider any new climate change information to determine PAME involvement, if any, in such activities undertaken by other Arctic Council Working Groups. Such projects may include: Vulnerability and Adaptation to Climate Change in the Arctic (VACC – Norway lead), the AMAP led Cryosphere Project Proposal - Climate Change and the Cryosphere – Snow, Water, Ice and Permafrost in the Arctic – SWIPA (iii) PAME will work with CAFF on *1) the Circumpolar Biodiversity Monitoring Programme (CBMP)* – participation in the Marine Expert Monitoring Group of CBMP and on *2) the Arctic Biodiversity Assessment (ABA)*	**All** **All** **PAME Chair/Secretariat** **PAME Chair/Secretariat**

Appendix I - PAME Project on Arctic Ocean Review

I. Project Title and Product

Arctic Ocean Review – a multi-phased project that will result in a review of the global and regional measures that are in place for the protection of the Arctic marine and coastal environment. This project will address both sea and land-based activities[USA]. The final report will be presented to the Arctic Council Ministers in 2013.

II. Background

- There are numerous global and regional instruments that call for action at the global, regional and national levels to prevent, reduce and control impacts to the marine environment, including pollution, such as the UN Law of the Sea Convention, Agenda 21, and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.
- At the global and regional levels, the work of the Arctic Council and its working groups is related to other international instruments and processes such as conventions, multilateral and bilateral agreements, and action programmes. These Arctic Council efforts help States build on national efforts and address commitments made in international bodies such as the International Maritime Organization (IMO), United Nations (UN), and Convention on Biological Diversity (CBD).
- The Arctic oceans program and associated PAME Working Group was established in 1993 by the Ministers of the Arctic Environmental Protection Strategy (AEPS), and it was reconfirmed by the Ottawa Declaration creating the Arctic Council in 1996.
- The 1996 PAME Report addressed source by source assessment from land-based activities, dumping of wastes at sea, shipping activities and offshore oil and gas activities with regard to

inputs of pollutants to the Arctic marine environment, followed by an analysis of existing international instruments and recommendations.

- The 2004 Arctic Marine Strategic Plan (AMSP) provides the foundation for the Arctic Council and PAME's mission and objectives. It also includes an objective to stay current with respect to protection measures, as stated below:

  Periodically review the status and adequacy of international/regional agreements and standards that have application in the Arctic marine environment, new scientific knowledge of emerging substances of concern, and analyze the applicability of a regional seas agreement to the Arctic. (Strategic Action 7.3.4)

- The 2004 Arctic Human Development Report is the first comprehensive assessment of human well-being covering the entire Arctic region and represents the knowledge base for the work of the Arctic Council's Sustainable Development Programme. This report, and other work within the Arctic Council, recognizes the increased importance of Permanent Participant's involvement in the working groups of the Arctic Council. The relationship of Arctic inhabitants to the Arctic Ocean is especially close, and the state of the Arctic marine environment is central to the future of Arctic inhabitants.

III. Rationale

The Arctic Council, through PAME, has a mandate and commitment to respond to trends and help provide advice on how to address growing pressures affecting the quality of the Arctic marine environment. Given the climatic, economic, environmental and socio-cultural changes occurring in the Arctic and the trends resulting in increasing pressures on the marine and coastal environments, it is particularly timely in for the Arctic Council to conduct a review of global and regional environmental protection measures in the Arctic. The impetus for such a review is provided for by a number of commitments, trends and initiatives, including:

- The implementation of the 2004 Arctic Marine Strategic Plan (AMSP) that outlines the overall direction of the Arctic Council for the protection of the Arctic marine environment;
- Commitments by the global community to protect marine biodiversity and the marine environment through the application of the ecosystem approach and integrated coastal and ocean management.
- Norwegian, Danish, Swedish common objectives for their successive chairmanships of the Arctic Council throughout 2006-2013, in particular the integrated resource management and climate change themes as the apparent ocean focus places a great importance and emphasis on the PAME mandate and work plans;
- New knowledge, as a result of the findings and outcomes of Arctic Council assessments, as it relates to the protection of the Arctic marine environment and interests of indigenous and other residents of the Arctic in the protection of the marine environment and sustainable use of its resources.
- Increased economic activity and significant changes due to climatic processes are resulting in increasing opportunities, threats and the use of the Arctic marine and coastal environments;
- Over the past 5-6 years, the rate of loss of sea ice in the Arctic Ocean has increased more rapidly than projected causing permafrost to be vulnerable to thawing and threatening the coastal zone

areas with physical alterations and destruction of habitats which are of vital importance to maintaining ecosystem and socio-economic health; and,

- The implementation of and compliance with relevant international instruments and governmental commitments through increased coordination and collaboration and trends towards integrated ocean management approaches, such as the ecosystem approach, in addressing the challenges of coastal and marine environment.
- Arctic priorities and strategies outlined in new policy statements and communications by Arctic States and others.

IV. Project Objective

The question of whether current global and regional measures (legal, policy, programs, guidelines, etc.) for the Arctic Ocean are effective, necessitates a clear understanding of not only demands/uses, but also of the measures, instruments or initiatives that are being used or are relevant to the management and governance of the Arctic Ocean. There is a need to have a common understanding or knowledge base of global and regional measures, and further, to communicate to the local, regional and global communities the efforts of the Arctic Council, especially those of coastal states, with respect to the stewardship of the Arctic Ocean.

The key objectives of this multi-phased project are to:

- Compile and disseminate information on past and current ocean initiatives of the Arctic Council and related actions of others;
- Analyze global and regional protection measures for environmental, economic and social/cultural outcomes; and,
- Develop a report addressing protection measures for the Arctic marine and coastal environment, including possible impediments to achieving a regionally integrated, sustainable development approach to the Arctic Ocean in light of current and emerging trends.

V. Project Scope

This project does not intend to initiate a new assessment, but will produce a report on the global and regional measures in place to protect the Arctic marine and coastal environment based on recent or ongoing projects within the Arctic Council and other relevant fora.

Examples of projects from Arctic Council Working Groups and other organizations that may be of relevance to this project are:

- PAME – the 1996 PAME review of pollution sources in the Arctic marine environment, outcomes from ongoing projects, in particular the Ecosystem Approach/Large Marine Ecosystem project, the Regional Programme of Action , and the findings and research agenda coming out of the Arctic Marine Shipping Assessment (AMSA);
- CAFF – Outcomes and findings of the Arctic Biodiversity Assessment and the marine component of the Circumpolar Biodiversity Monitoring Programme (CBMP);
- AMAP – Outcomes and findings of the Oil and Gas Assessment (OGA), 2009 State of the Arctic Environment Report (overview report based on ongoing scientific assessments – SOAER), the project on Climate Change and the Cryosphere - Snow, Water, Ice, and Permafrost in the Arctic (SWIPA);

- Ocean-related projects within EPPR and SDWG, in particular the work on oil spill prevention and response, and coastal community adaptation to climate change;
- Efforts of the International Maritime Organization (IMO), including future work on the Arctic Guidelines (Polar Code) as it may relate to AMSA recommendations, and preventive measures covering marine pollution by ships (MARPOL 73/78);
- Efforts of regional ocean-related bodies, including the UNEP Regional Seas Programme, HELCOM, and OSPAR;
- EU Marine Strategy Directive signed by the EU Council and the European Parliament on 21 May 2008. The main objective of the Marine Strategy Directive is to achieve environmentally healthy marine waters by 2020. Reviewing environmental protection measures will be an important component of acting on the EU Strategy; and
- The work of international bodies addressing threats and pressures affecting the Arctic marine environment.

VI. Project Management Structure

It is proposed that this project will be implemented in two phases over the next 4 years, and will be based on and closely coordinated with the work of PAME and other Arctic Council working groups. This project will be done under the overall leadership of PAME using a lead country(s) approach. PAME will collaborate with other relevant organizations and activities, such as within the IMO and UN. This Project will evolve based on step-by-step guidance and direction from the SAOs and will be presented to Arctic Council Ministers in 2013.

VII. Project Implementation

Phase I (2009-2011) – Outreach, Communication and Information Gathering

The first phase of this Arctic Ocean review project will be comprised of scoping, outreach, communication and compiling information about global and regional environmental protection measures in the Arctic. It will be done in close coordination with Permanent Participants and other working groups of the Arctic Council. It is proposed that the gathering and dissemination of information will be done through various means, including hosting thematic workshops, preparing reports, and findings from other activities on the Arctic marine environment. This will act as a means of outreach, as well as getting input from others and new information/knowledge, such as from IPY initiatives and possibly new research findings on climate change. Full account will be taken from the findings of key Arctic Council projects, such as ACIA, OGA, AMSA, BePOMAr, and the PAME Ecosystem Approach project.

Phase 1 Deliverables - Status Report to SAOs and Communications Products (brochures, improved websites, etc.)

Phase II (2011-2013) – Analysis of information & Reporting to the Arctic Council

The second phase of this project will consist of conducting a review of existing global and regional environmental protection measures in the Arctic and identifying impediments to an integrated, sustainable development approach based on the outcomes of Phase I. A report will be produced with the intention to make the three aspects of sustainable development interact and support each other, and will aim to strengthen the joint knowledge base and contribute to both the regional and

global ocean agenda on integrated ocean management. This report will be presented to Arctic Council Ministers in 2013.

Phase 2 Deliverables - Report to Arctic Council Ministers.

VIII. Financial Considerations

Consistent with the over-all Arctic Council approach, this Project will be financed through voluntary contributions. As this Project does not require the collection of new data and is being implemented over a 4 year period, the total cost and cost per year are expected to be fairly modest. The proposed stepwise approach with SAO approval required for each phase will facilitate financial planning and budgets.

Lead countries will carry the main costs of staff time with other countries providing in-kind support. The costs for Permanent Participants participation will need to be determined in consultation with them. The PAME Secretariat will provide administrative support from its normal annual budget.

Given this is a multi-year, multi-phased project, it is difficult at this stage to propose a budget for Phase 2, however, below is a proposed budget for Phase 1.

Proposed Budget for Phase 1 (2009-2011):

ACTION / ITEM	**COST (Approx.)** **cost in USD*
1. Compile a list of all ocean-related initiatives of the Arctic Council since 2002.	In-kind
2. Information package on the main reports in item 1, including an overview brochure profiling all initiatives/measures, a fact sheet on each activity.	$20,000
3. Conduct two medium size workshops	$80,000
4. Produce a status report for SAOs.	$20,000
5. Support for Permanent Participants to participate in the project and workshops.	$20,000 (TBD)
TOTAL	**$140,000**

APPENDIX VI

SDWG Work Plan 2009-2011

Overview of the SDWG Mandate

The goal of the sustainable development program of the Arctic Council is to propose and adopt steps to be taken by the Arctic States to advance sustainable development in the Arctic, including opportunities to protect and enhance the environment and the economies, culture and health of indigenous communities and of other inhabitants of the Arctic, as well as to improve the environmental, economic and social conditions of Arctic communities as a whole.

Following on the mandate given to the SDWG by the *Iqaluit Declaration* (1998), the *Sustainable Development Framework Document,* adopted by the Ministerial meeting in Barrow in 2000, outlined the elements of the SD Program and identified six subject areas of special importance under the heading of sustainable development:

- Health issues and the well-being of people living in the Arctic
- Sustainable economic activities and increasing community prosperity
- Education and cultural heritage
- Children and youth
- Management of natural, including living, resources
- Infrastructure development.

Responding to Ministerial Priorities and Directions

Unlike other Arctic Council Working Groups, until the *Salekhard Declaration* (2006) the SDWG carried out its mandate based on specific projects approved by Ministers, rather than in accordance with a broad program mandate. This structural difference was alleviated to some degree by the adoption, at the Salekhard Ministerial, of a mechanism to allow SAOs to approve new SDWG projects intersessionally.

Responding Intersessionally to SAO Priorities and Directions

In their Report to Ministers on the Review of the Arctic Council Structure endorsed by Ministers in the *Inari Declaration* (2002), SAOs noted, *inter alia*, that:

- The SDWG should continue to assist the SAOs in developing and implementing the Sustainable Development Program of the Arctic Council;
- The SDWG should further strengthen its role as the expert Working Group on the social, economic and cultural dimensions of sustainable development;
- The SDWG should continue to give priority to issues such as health, social affairs, education and training, children and youth as well as sustainable economic development, including tourism, infrastructure as well as information and communication technology;

- The SDWG should work closely with all Working Groups to promote the integration of a capacity building focus into the activities of the Arctic Council.

In the *Sustainable Development Action Plan* (SDAP), approved by Ministers in Reykjavik in November 2004, priorities were identified for the activities of the Arctic Council on the economic and social dimensions of sustainable development related to the SDWG, including:

- In relation to the Economic dimension of sustainable development: Sustainable economic activity and increasing prosperity of Arctic communities; Sustainable use of natural, including living, resources; and Development of transport infrastructure (including aviation, marine and surface transport), information technologies and modern telecommunications.
- In relation to the Social dimension of sustainable development: Health of the people living and working in the Arctic; Education and cultural heritage, including language; Prosperity and capacity building for the people of the Arctic, in particular for children and youth; Gender equality; Enhancing well being, eradication of poverty among Arctic people.

The SDWG will continue to pursue issues and priorities identified in previous Reports of Senior Arctic Officials and Ministerial Declarations.

Cooperation with other Working Groups and Expert Bodies

In addition, the SDWG is increasingly required to contribute to Arctic Council priority areas being carried out by other working groups and subsidiary bodies. The SDWG continues to seek more input from existing and new expert groups on issues and activities within its mandate. Further development of such relationships with expert bodies can contribute to the work of the SDWG and will be pursued in the period 2009 - 2011.

The SDWG Work Plan 2009-2011

The SDWG Work Plan below provides a framework for the work and priorities of the SDWG during the period 2009 – 2011 that complements the existing Ministerial Declarations, *Sustainable Development Terms of Reference*, *SDWG Operating Guidelines*, *The Arctic Council's Sustainable Development Action Plan* (SDAP) and other emerging priority issues.

On-going Projects and Activities:

The SDWG will continue activities in relation to existing approved projects and activities as follows:

- *Arctic Energy Summit (AES)[USA]*
- *Circumpolar Information Tool Kit on Minerals, and Oils and Gas for Indigenous People and Northern Communities [Canada]*
- *EALAT-Information: Reindeer herding, traditional knowledge and adaptation to climate change and loss of grazing land [Norway]*

- *Action Arctic ICT [Sweden]*
- *ArcticStat [Canada]*
- *Survey of Living Conditions in the Arctic [Denmark/Greenland/Faroe Islands]*

In addition, the creation of the SDWG Arctic Human Health Expert Group (AHHEG) in 2007 will allow for better coordination of a number of ongoing projects and activities in relation to Arctic human health, including:

- *International Circumpolar Surveillance: Prevention and Control of Emerging Infectious Diseases in the Arctic (ICS)*
- *Arctic Human Health Initiative (AHHI)*
- *Advancing Alcohol & Drug Abuse Treatment in the Circumpolar North*
- *Research & Action Plan for Human Health Risk Reduction in the Arctic*

New Projects and Activities Currently under Development (subject to approval by SAOs)

The SDWG is currently considering a project proposal being developed by Norway in relation to Assessment of Cultural Heritage Monuments and Sites in the Arctic.

Possible Follow-On Projects and Activities (subject to consideration at the future SDWG Meetings)

The SDWG is currently considering a number of possible follow-on activities related to projects and activities concluded during the Norwegian Chairmanship (as indicated above under Part 2 of this report). Any formal proposals for projects or activities will be considered at future SDWG meetings and brought forward to SAOs for intersessional consideration and approval, as appropriate. Follow-on activities under consideration include:

- *Vulnerability and Adaptation to Climate Change*
- *Ecosystems-Based ocean management*
- *Arctic energy*
- *Arctic human health*
- *Arctic social indicators*
- *Arctic socio-economic issues*
- *Arctic cultures and languages*

Thematic Areas for SDWG Projects and Activities:

In addition, consistent with the overall work and priorities of the Arctic Council, the SDWG may carry out projects and activities, as approved by SAOs, in the following thematic areas:

- *Arctic Socio-Economic Issues*

  An emerging competence of the SDWG is in relation to the development of reliable and accessible human data sets through such projects as the *Arctic Human Development Report*, *SLiCA*, *ECONOR I* and *II* and *ArcticStat*. In addition, the important work of the *Arctic Social Indicators* project has contributed to this effort. These data sets and indicators are important to the work of the SDWG and in the context of cooperation with other working groups. Increasingly SDWG has a contribution to make to this cross-cutting work, particularly in the

socio-economic dimension. The SDWG is considering ways to allow it to participate in cross-cutting activities in a more structured and consistent way, for example in relation to *SWIPA* (Climate Change and the Cryosphere: Snow, Water, Ice, and Permafrost in the Arctic) and the *Sustaining Arctic Observing Networks (SAON) process.*

- *Arctic Cultures and Languages*

The SDWG has recognized that until recently there was a gap in its projects and activities in relation to culture and language issues. Some progress has been made in addressing this gap during the Norwegian chairmanship through of the *Arctic Indigenous Languages Symposium* and the developing proposal in relation to an *Assessment of Cultural Heritage Monuments and Sites in the Arctic.* SDWG will explore further projects and activities in this thematic area, including possible education and outreach projects or activities.

- *Arctic Human Health*

A cluster of projects and activities in relation to human health has resulted in the creation of the SDWG Arctic Human Health Expert Group (AHHEG). The AHHEG will assist the SDWG in identifying Arctic human health issues and priorities, coordinating SDWG Arctic human health projects and activities, identifying possible new projects and activities, and cooperating with other working groups on Arctic human health issues.

- *Adaptation to Climate Change*

Given the importance of Arctic climate change and variability, and related impacts, the SDWG proposes to pay particular attention to development of new projects and activities that are relevant to climate-change-related vulnerability, adaptation and resilience of Arctic residents.

- *Management of Natural Resources*

Arctic residents fundamentally rely on the sustainable use of natural resources for their health and economic well-being. Increases in shipping, petroleum activities, fishing, mining as well as external influences such as climate change and variability, require that the management of resources is based on a holistic perspective. The SDWG proposes to pay particular attention to the development of new projects and activities that relate to the ecosystem approach and implementation of integrated management concepts.

- *Energy and Arctic Communities*

Access to energy is a prerequisite for the existence and development of Arctic communities and societies. To sustain people and their livelihoods in Arctic regions, energy resources are essential for basic heat, power, light and transportation, as well as for a myriad of other purposes. Many important political, economic, social, environmental and technological questions underlie development of Arctic energy resources. Given the *SDWG Report to Ministers on Arctic Energy* and the ongoing work of *Arctic Energy Summit*, Arctic energy is an important theme around which to focus many issues that relate to the Arctic as an energy consumer and energy producer. In coming years the pressures to develop Arctic energy resources, including renewable resources, are likely to increase. The SDWG will explore the possibility of new projects and activities in this thematic area.