Arctic Council
Arctic Marine Strategic Plan 2015-2025

Protecting Marine and Coastal Ecosystems in a Changing Arctic

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The Arctic Marine Strategic Plan

The Arctic Council is a high-level intergovernmental forum to provide a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic Indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic. In 2002, the Arctic Council agreed to develop a strategic plan for protection of the Arctic marine environment. In fulfilment of this agreement, the first Arctic Marine Strategic Plan was published in 2004.

The decade since 2004 has been one of rapid climate change, increasing human activity and new emerging threats such as ocean acidification. The speed, pervasiveness and diversity of Arctic change create new challenges and opportunities for sustainable development and environmental protection. In order to address these issues, a second Arctic Marine Strategic Plan for the next decade has been developed by the Working Group for the Protection of the Arctic Marine Environment (PAME) in cooperation with Arctic Council member states, Permanent Participant Organisations, other working groups and observers.

The Arctic Council's Arctic Marine Strategic Plan 2015-2025 sets forth the rationale, frameworks, and strategic actions that will guide the work of the Arctic Council, its Working Groups, and its other subsidiary bodies.

[N*ote: Towards end of developing process add text describing process, motivation, and possibly main thrust of the new plan*]

1. Introduction

The Arctic Council's Arctic Marine Strategic Plan (AMSP) for the 2015-2025 period provides a strategic framework for protecting Arctic marine and coastal ecosystems and promotes sustainable development in the region. It articulates the ways in which the Arctic Council can increase its collective understanding of the effects and impacts of human activities in the Arctic, climate change, ocean acidification, and support conservation and sustainable use of the Arctic marine environment. It takes into consideration the need for forward looking cooperation with a view to increase the capacity to adequately act upon and adapt to during this period of rapid change.

The AMSP also addresses the need to understand and shape Arctic change by recognising that sustainability is achieved on the basis of a resilient Arctic environment and resilient Arctic communities. The strategic actions identified in the AMSP will guide the work of the Arctic Council, its Working Groups, and its other subsidiary bodies in the coming decade and will also contribute to operationalizing of the Arctic Council mandate.

2. Vision

The Arctic Council's vision for the Arctic marine environment is:

Healthy, productive, and resilient Arctic marine ecosystems that support human well-being and sustainable development for current and future generations.

3. Strategic Goals

The goals of the 2015-2025 Arctic Marine Strategic Plan are to:

Goal 1 **Improve knowledge of the Arctic marine environment, and continue to monitor and assess current and future impacts on Arctic marine ecosystems.**

Goal 2 **Conserve and protect ecosystem function and marine biodiversity to enhance resilience and the provision of ecosystem services.**

Goal 3 **Promote value creation through safe and sustainable use of the marine environment, taking into account cumulative environmental impacts, and minimizing risks of negative impacts from human activities.**

Goal 4 **Enhance the well-being of Arctic communities and strengthen capacity to adapt to changes in the marine Arctic.**

4. Scope

This Strategic Plan covers all Arctic marine areas and relates to all key activities affecting Arctic marine ecosystems; including coastal zones, river basins and other areas that are connected to the marine ecosystem.

The AMSP addresses influences on the Arctic marine environment regardless of whether or not they originate from within or outside the region, recognising that Arctic marine areas are connected to the rest of the world through chemical, physical, biological and human interactions.

There is no agreed definition of the geographical extent of the Arctic. Arctic Council member states will define their relevant Arctic areas which may vary depending on the context. For example, the Arctic can be defined by using the 10 degrees C July isotherm, by latitude (the region north of which one experiences at least one day 24 hour sunlight-66 33'39" N).

[**NOTE: include a map on the inside cover – the same as the 2004 AMSP on "Arctic Seas and Coastal Areas"]

5. Context

5.1 A changing Arctic

Arctic marine and coastal ecosystems are places of abundant natural resources and are widely pristine. They support diverse services that benefit people from within and outside the Arctic and are integral to the well-being of the people living in the Arctic.

Arctic climate and ecosystems are changing rapidly as a result of human activities, regionally and globally. Assessments carried out over the last decade under the auspices of the Arctic Council (see sidebar) have improved our current understanding of changing arctic conditions and their impact on the environment, biodiversity, oceans and human health and have documented that the effects of climate change, sociocultural change, and economic change in the Arctic are putting an unprecedented and increasing strain on the Arctic marine environment.

The Arctic is also at the forefront of global climate change, primarily as a result of activities occurring far from the region. The UN Intergovernmental Panel on Climate Change (IPCC) concluded in its Fourth Assessment Report (2007) that average Arctic temperatures have increased at almost twice the global average rate in the past 100 years. In its Fifth Assessment Report (2014), the IPCC confirmed that the Arctic is continuing to experience rapid climate change with reductions in sea ice and areas of permafrost, and now predicts that a nearly ice-free Arctic Ocean in September

Relevant Arctic Council Assessments

- Arctic Human Development Report (AHDR 2004)
- Arctic Climate Impact Assessment (ACIA 2005)
- Snow, Water, Ice and Permafrost in the Arctic assessment (SWIPA 2011)
- Arctic Biodiversity Assessment (ABA 2013)
- Arctic Ocean Acidification Assessment, 2013
- Adaptation Actions for a Changing Arctic (AACA)
- Arctic Oil and Gas Assessment 2008
- Arctic Marine Shipping Assessment (AMSA 2009)
- Others?

is likely before the middle of this century.[1] The Arctic Biodiversity Assessment (ABA 2013) found that climate change is by far the most serious threat to Arctic biodiversity and that current trends point to major transformative changes in ecosystems within a human life span, including loss of entire habitats, such as multi-year sea ice.[2] Ocean acidification, primarily caused by absorption by the ocean of increased levels of CO_2 in the atmosphere, is occurring rapidly throughout Arctic marine waters. This can result in reduced formation of shells and organism growth which again affects the food supply for fish, birds and mammals. The economic impact of ocean acidification could be substantial.[3]

Increasing industrial development and marine transportation are other significant drivers of change in the Arctic. Growing industrial development and shipping can facilitate social and economic development in the Arctic through increased investment in infrastructure, employment and tax revenue, and can furthermore reduce the time and cost of transporting good to remote Arctic regions. However, it will bring with it challenges such as a potential an increase in local sources of contaminants. The Arctic is already a major recipient of chemical pollutants, such as Mercury and Persistent Organic Pollutants (POPs) carried to the Arctic through transboundary, long range atmospheric and oceanic transportation. The ecosystems and the people living in the Arctic may be exposed to these pollutants through the food chain at levels that are of concern to health authorities. Due to our increased awareness and understanding of the impacts that long range pollutants have on the health of people and wildlife in the Arctic, global action is being taken to reduce their sources.[4]

> "Three out of four indigenous people perceive climate change to be a problem in their communities and more than 50 per cent mention local contaminated sites, pollution of local lakes and streams and pollution from industrial development as problems in the region. …despite the rapid changes in the Arctic, most indigenous peoples have maintained their traditional subsistence activities." Survey of Living Conditions in the Arctic (SLiCA) SDWG 2011

Social and cultural changes occurring in many Arctic societies are affecting the ways of life of people in the Arctic, including notably, Indigenous peoples'. These changes can be expected to affect human health as well as the health of the marine environment. The Indigenous peoples in the Arctic have proven to be highly adaptable, securing their livelihood in a dynamic and challenging environment. However, the rate, magnitude and diversity of current and projected changes in the region may challenge the adaptive capacities and range of adaptive choices available to Arctic Indigenous and local communities.

With this Strategic Plan the Arctic Council will aim to guide sustainable development in the Arctic and to address the challenges and opportunities posed by a rapidly changing Arctic marine environment, and increasing human use.

[1] Climate Change 2013: The Physical Science Basis, Fifth Assessment Report: Summary for Policy Makers, Intergovernmental Panel on Climate Change 2013
[2] Arctic Biodiversity Assessment, CAFF 2013
[3] Arctic Ocean Acidification Assessment, AMAP 2013, (key findings 1 and 6) http://www.amap.no/documents/doc/AMAP-Assessment-2013-Arctic-Ocean-Acidification/881
[4] Global Atmospheric Mercury Assessment; Human Health Assessment 2009; Persistent Organic Pollutants in the Arctic 2009; Arctic Pollution 2009; …..

6. Principles and approaches

This Strategic Plan is consistent with the rights and obligations covered under applicable regional and international agreements. It is acknowledged that the UN convention on the Law of the Sea (UNCLOS) is the recognized legal framework for governance in the Arctic Ocean. The Arctic Council is the most important international forum for addressing Arctic issues. This means that we have a predictable and relevant judicial and political framework for international cooperation in a region characterized by peace and stability. The AMSP is based on widely recognized principles and approaches in international instruments such as sustainable development, the precautionary approach, the polluter pays principle, and Ecosystem Based Management. The AMSP also addresses the need to understand and shape Arctic change by recognising that sustainability is achieved on the basis of a resilient Arctic marine environment and resilient communities.

Ecosystem Based Management

The Arctic Council strongly supports Ecosystem Based Management (EBM), a cornerstone of the 2004 AMSP. Since then, the Arctic Council and its Working Groups, as well as Arctic states and observers, have made significant progress on Ecosystem Based Management in the Arctic and elsewhere.

Ecosystem Based Management is defined by the Arctic Council as ''*the comprehensive integrated management of human activities based on best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of ecosystems thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity*." It is the integrated management of human activities aimed at maintaining the state of ecosystems in good condition. EBM is increasingly implemented worldwide in recognition that traditional single-sector and single-resource approaches to management are inadequate. In acknowledging this the 2012 United Nations Conference on Sustainable Development (Rio +20) re-affirmed the significance of EBM. The Arctic Council has identified the principles, needs, and opportunities to operationalize ecosystem based

Principles of Arctic Ecosystem Based Management

1. EBM supports ecosystem resilience in order to maintain ecological functions and services.

2. EBM recognizes that humans and their activities are an integral part of the ecosystem as a whole, and that sustainable use and values are central to establishing management objectives.

3. EBM is place-based, with geographic areas defined by ecological criteria, and may require efforts at a range of spatial and temporal scales (short-, medium- and long-term).

4. EBM balances and integrates the conservation and sustainable use ecosystems and their components.

5. EBM aims to understand and address the cumulative impacts of multiple human activities (rather than individual sectors, species or ecosystem components).

6. EBM seeks to incorporate and reflect, to the extent it is relevant, expert knowledge including scientific, traditional and local knowledge.

7. EBM is inclusive and encourage participation at all stages by various levels of government, indigenous peoples, stakeholders (including the private sector) and other Arctic residents.

8. Transboundary perspectives and partnerships can contribute significantly to the success of EBM efforts.

9. Recognizing that ecosystems and human activities are dynamic, that the Arctic is undergoing rapid changes, and that our understanding of these systems is constantly evolving, successful EBM efforts are flexible and adaptive.

management in the Arctic (see sidebar).

In applying Ecosystem Based Management as an overarching approach and putting it into practice through Strategic Actions, Arctic States will have the opportunity to further promote a common understanding and sharing of lessons learned for Ecosystem Based Management and to demonstrate this as a best practice internationally.

Precautionary Approach

The precautionary approach, as described in the 1992 Rio Declaration on Environment and Development, is "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." In the 2009 Tromso Declaration the Arctic Council urged Member States "to apply the precautionary approach and the polluter-pays principle as reflected in Principles 15 and 16 of the Rio Declaration, respectively, and conduct risk and environmental impact assessments for the exploration, development, transport and storage of oil, and enact and/or enforce appropriate laws and controls." The precautionary approach is a key principle underpinning this strategic plan.

7. Strategic actions

This Strategic Plan sets out a range of actions that can be undertaken by the Arctic Council through its member states and subsidiary bodies, in collaboration with other regional and global organizations.

The following strategic actions have been developed for each strategic goal according to the principles and approaches outlined above, and taking into consideration the sustainable development and environmental protection mandate of the Arctic Council. Emphasis is on actions that are important in a circumpolar Arctic perspective. These strategic actions are also guided by the key findings and recommendations of recently published Arctic Council reports. They focus on the promotion of a sustainable Arctic marine environment that supports environmental, socio-cultural, and economic values. They also acknowledge the importance of resilient ecosystems and human well-being for current and future generations.

An important cross-cutting issue is the opportunity for joint action among the Arctic Council member states in relevant international and regional fora to promote these strategic actions.

It is anticipated that additional actions will be requires as new information becomes available through, for example, ongoing or new studies by the Arctic Council working groups and others.

7.1 Improve and expand the knowledge-base

Goal 1: Improve knowledge of the Arctic marine environment, and continue to monitor and assess the current and future impacts on Arctic marine ecosystems.

The Arctic Council provides a framework for regional and international co-operation to improve knowledge of the Arctic marine environment. There is increasing demand for reliable and pertinent

information in the Arctic context, and that demand will only increase in the future as the region is faced with more development and change. Informed policy decisions depend on scientific information on the state of marine ecosystems as well as understanding the drivers of change and capacity to predict future change. Implementing effective Ecosystem Based Management (EBM) also requires knowledge about natural variability and vulnerability of ecosystems to threats and pressures.

Several existing Arctic Council initiatives support this goal, such as AMAPs Trends and Effects Monitoring Programme, CAFFs Circumpolar Biodiversity Monitoring Programmes, and the Sustained Arctic Observing Networks (SAON). Increased scientific and research cooperation with the observers in the Arctic Council will also foster improved knowledge of the Arctic marine environment. Current knowledge of Arctic marine ecosystems differ from region to region in the Arctic. A number of international research initiatives and organizations are active in the region, including under the Working Groups under the Arctic Council.

Current knowledge of Arctic marine biodiversity and ecosystems is fragmentary, and while information is improving, Arctic systems are inherently complex and undergoing rapid changes associated with multiple stressors and their effects. These changing conditions and their potential for impacts on human communities continue to present challenges for policy makers and governance systems.

Strategic actions:

Continue building up the basic knowledge about the Arctic marine environment through:

- 7.1.1 Strengthening scientific cooperation among the Arctic countries and other countries involved in Arctic research with focus on prioritizing research issues, filling knowledge gaps and developing mechanisms to share and exchange observational data.
- 7.1.2 Improving the understanding of cumulative impacts on marine ecosystems from multiple stressors such as climate change, ocean acidification, pollution, noise, eutrophying agents, marine litter, human activities and other emerging threats.
- 7.1.3 Improving the predictive capacity and developing a common understanding of the likely future impacts of climate change and other emerging threats, such as ocean acidification and invasive/alien species. Continue the development and standardizing data sharing and management at a circumpolar Arctic level.
- 7.1.4 Developing a consistent, Arctic Council endorsed, method of integrating Traditional and Local Knowledge into the work of the Arctic Council. 8.
- 7.1.5 Improved and coordinated communication of knowledge generated in Arctic Council assessments to the global community.
- 7.1.6 Continue the development and standardizing data sharing and management at a circumpolar Arctic level.
- 7.1.7 Conduct the 2nd circumpolar assessment of Arctic marine shipping at current and projected levels

Improve observing, monitoring and reporting on the Arctic marine environment by:

7.1.8 Strengthen (enhance and expand) observation, monitoring and reporting in the Arctic marine environment of: meteorology; pollutants, including chemical contaminants, radionuclides and short-lived climate forcers; climate-change related impacts, especially ocean acidification; oil pollution biodiversity and other metrics of environmental change; and invasive species.

7.1.9 Where possible, support the development of mechanisms to enhance local involvement in the collection and monitoring of marine information.

7.1.10 Enhance the mechanisms for joint monitoring of marine ecosystems and species.

7.1.11 Strengthen the development of circumpolar procedures for ice detection, monitoring, and forecasting and improve the provision of nearshore ice information (current and forecast conditions) for Arctic communities.

7.2 Ecosystem Function and Biodiversity

Goal 2: Conserve and protect ecosystem function and marine biodiversity to enhance resilience and the provision of ecosystem services.

Arctic marine ecosystems are under increasing pressure from multiple stressors including climate change, ocean acidification, long range pollution and increased human activities. These stressors, individual and cumulative, pose a challenge to the health and sustained viability of Arctic marine ecosystems. Stressors often exacerbate one another, leading to greater cumulative impacts. Adding to that is the complex and trans-boundary nature of those stressors, which means that solutions often will require international and regional co-operation.

Arctic ecosystem services are of local, regional and global importance. Taking an ecosystem approach to management (EBM) can enhance the resilience of marine and coastal biodiversity and help to safeguard marine ecosystems and their functions, allowing people to continue to benefit from the services that flow from healthy ecosystems. However, there are challenges to the implementation of EBM, including how to define and characterize the optimal state of the ecosystem where sustainable use and maintenance of ecosystem integrity and resilience are achieved, and having the ability to assess the state and status of ecosystems which are not stable and static but rather dynamic and ever changing.

I In implementing this Strategic Plan, the Arctic Council has the opportunity to continue its support for immediate and early actions to help conserve and protect Arctic marine ecosystems. Initial steps taken in this direction include the identification and delineation of eighteen Arctic Large Marine Ecosystems and the description of Areas of Heightened Ecological and Cultural Significance within them. These delineations provide a framework to advance the application of EBM within an Arctic context.

Strategic actions:

Carry out assessments to address impacts and effects on the Arctic marine environments

7.2.1 Identify and develop tools and methodology for assessing cumulative impacts on Arctic marine ecosystems resources and services with the aim of incorporating them in integrated assessments of environmental status, trends and projected future impacts.

7.2.2 Identify and assess threats and impacts to areas of ecological and cultural significance, and how such areas will be influenced in the future by climate change and other human induced changes and activities.

7.2.3 Conduct a feasibility study to consider the development of circumpolar indicators of changes and stressors in the Arctic marine environment.

7.2.4 Cooperate in the development of frameworks to serve as a basis for the assessment work of the Arctic Council WGs. If possible, base these frameworks on the principles of the AMSP (including, but not limited to, the principles of sustainable development, precaution, polluter pays, and EBM). If possible, develop and use them across the Arctic Council WGs. As part of the development of these assessment frameworks, identify or develop tools and methodologies for assessing cumulative pressures, impacts, and risks on Arctic ecosystem resources and services with the aim of including them in integrated ecosystem assessments and in the work of other international organizations.

7.2.5 Encourage the Arctic states to implement appropriate measures to protect Arctic marine areas of heightened ecological and cultural significance, focusing on species particularly at risk from climate change and cumulative impacts, as well as areas of refuge for ice-associated species areas expected to become particularly important to Arctic marine biodiversity under future climate conditions.

7.2.6 Develop and encourage the Arctic states to implement common measures for early detection and reporting of marine invasive species in the Arctic marine environment.

7.2.7 Support research into technology and techniques for invasive species detection and control.

7.2.8 Promote cooperation among Arctic and non-Arctic States to address threats to the staging and wintering grounds and migrating corridors of migratory marine species.

7.2.9 Actively support international efforts to:

- *reduce long range pollution accumulating in the Arctic marine food-chains, and;*
- *address climate change and ocean acidification in order to reduce emissions and implement adaptation measures, as a matter of urgency.*

7.2.10 Limit the impacts of climate change in the short term through concerted efforts to reduce emissions of short lived climate forcers, in particular Black carbon and Methane.

7.3 Value Creation and Sustainable Marine Resource Use

Goal 3: Promote value creation through safe and sustainable use of the marine environment, taking into account cumulative environmental impacts, minimizing risks of negative impacts from human activities.

The Arctic has substantial potential for future value creation that will benefit both local communities and Arctic states. Improved access to the Arctic, national and regional priorities, and growing global demand for natural resources are driving an increase in resource extraction, shipping activities, and interest in living marine resources. Value creation should be promoted through the sustainable use of natural and living marine resources in a manner that maintains the structure of eco-systems, their functions and productivity and by applying Ecosystem Based Management.

While pollution in the Arctic marine environment primarily comes from sources outside the region, impacts from pollution and industrial activities inside the region can, combined with those from

climate change, ocean acidification and long range pollution, produce cumulative impacts that put strain on these ecosystems. Mining, oil- and gas activities, shipping, Arctic settlements, legacy sites such as military bases and litter, are current and potential sources of marine pollution within the Arctic.

Unique characteristics of the Arctic marine environment, which vary throughout the region, can include the presence of sea ice for many months of the year, long periods of darkness, perilous weather conditions, vast distances between remote communities, and a lack of infrastructure such as accurate nautical charts and deep water ports. These factors mean that generally the Arctic will continue to be a place of high risk for activities like marine shipping and other vessel-based activities such as offshore oil and gas development and mining.

Overharvest was historically the primary human impact on many Arctic marine species, but sound management has successfully addressed this problem in most, but not all cases. At the same time, increasing demand for seafood and new harvest ventures could potentially bring new risks of overharvest. This risk can be reduced through effective regulation and enforcement.

There is a need for cooperation on sharing of information, best practices and technologies as well as response resources in the case of an emergency. With climate change, the possibility of extreme weather events, resulting in flooding, landslides and other natural disasters is increased. Arctic states agreements on Cooperation on Marine Oil Pollution, Preparedness and Response (2013), and Search and Rescue (2011), have strengthened cooperation among its signatories. But challenges remain in mounting an effective response effort in the instance of a major spill of oil or other toxic substances, including radionuclides. Given the challenges of managing spills in ice infested and remote Arctic waters, and the potential serious impacts on the Arctic marine environment, prevention of spills and measures to minimize risks to areas of heightened ecological and cultural significance should remain the top priority.

Strategic actions:

7.3.1 Advance EBM as an overarching framework for sustainable use of living and non-living resources in the Arctic marine environment, taking into account cumulative effects and the need for adaptation to climate change.
[Initiate an assessment of the cumulative impacts of marine activities at current and projected levels based on the 18 Arctic LME boundaries]

7.3.2 Improve the understanding of risks and risk reducing measures related to Arctic shipping and petroleum activities, including identify gaps and sharing of best practices related to oil spill prevention, preparedness and response to emergencies in the Arctic.

7.3.3 Support the research and development of oil spill mitigation measures and response technologies in ice-covered waters.

7.3.4 Develop measures, as appropriate, to prevent environmental harm and reduce risk related to maritime shipping and offshore oil- and gas activities in the Arctic, including addressing safety and environmental concerns with respect to types of vessels that may not be subject to the Polar Code.

7.3.5 Continuously improve safety and environmental protection performance of offshore oil and gas operations. This could be done through a combination of regulatory controls , guidance and incentives/disincentives, and operator/regulator dialog.

7.3.6 Support and enhance international efforts and cooperation to continue to identify, assess and reduce existing and emerging harmful contaminants.

7.3.7 Ensure effective regulation and enforcement of harvesting of marine living resources that respect principles and practices for sustainable development.

7.3.8 Manage Arctic living marine resources in accordance with Ecosystem Based Management and international law to ensure long term sustainability of stocks and ecosystems.[combine with 7.3.7 above]

7.3.9 Strengthen the development of a common Arctic protocol for ecotoxicological assessment and screening of chemicals used in resource extraction activities in the Arctic.

7.3.10 Support ongoing work to examine and recommend actions to reduce black carbon emissions from activities in Arctic waters. Encourage research that advances technical definitions, measurement standards, and mitigation options with respect to the impact on the Arctic from black carbon.

7.3.11 Develop plans for the sustainable use of Arctic marine resources and services to cover resources and services which are of significance to local, regional, and global economies and may make use of methods such as safeguarding designated marine areas based on their value as hotspots for biodiversity.

7.3.12 Exchange of experiences with national management of activities with a potential to affect marine ecosystems, with a view to developing best practices.

7.4 Well-being of Arctic Communities

Goal 4: Enhance the well-being of Arctic communities and strengthen capacity to adapt to changes in the marine Arctic.

The changes taking place in the Arctic are resulting in both challenges and opportunities in the Arctic region and it is important to meet these challenges and make use of the opportunities to secure the well-being of present and future generations there.

The health, well-being, and adaptability of Arctic Indigenous and local communities are closely linked to the health of the marine ecosystems upon which they rely for food, commerce and cultural needs. Changes to marine ecosystems resulting from global climate change, the introduction of contaminants from outside the region, and other stressors can affect both the access to traditional foods and the quality of that food for Indigenous and local communities. The SDWG Arctic Human Health Initiative (AHHI) stated that it is likely that the most vulnerable to experiencing impacts on human health from climate change related issues will be those living close to the land in remote communities.

Promoting human development and sustaining traditional lifestyles are high priorities of the Arctic Council. The well-being of Arctic Indigenous and local communities rests on the capacity to monitor, assess and understand the possible trajectories and consequences of marine ecosystem change, and to develop and implement adaptation strategies.[5] Addressing the changes and adapting to them requires consideration of cumulative impacts and interactions between socio-economic systems and ecosystems.

[5] Arctic Council (2013). Arctic Resilience Interim Report 2013. Stockholm Environment Institute and Stockholm Resilience Centre, Stockholm.

Strategic actions:

7.4.1 Strengthening efforts on information and outreach to Indigenous and local communities in the Arctic regarding the effects of climate change and approaches to adaptation.

7.4.2 Enhance education, outreach and communication to Indigenous and local communities in the Arctic to strengthen their resilience and adaptation.

7.4.3 Improve meaningful engagement of local communities in offshore oil and gas project planning, environmental assessment, operations, monitoring, regulatory decision-making, and economic opportunities, including the consideration and use of Traditional and Local Knowledge (TLK) to avoid or mitigate negative environmental, subsistence and cultural impacts, and maintain or increase well-being and socioeconomic opportunities.

7.4.4 Assess vulnerabilities and adaptation options of Arctic coastal communities to changes in climate and the marine environment, as well as challenges and opportunities related to these changes and new patterns of activity.

7.4.5 Facilitate coastal community exchanges between Arctic States to improve sharing of knowledge and experiences and to strengthen the dialog with relevant business and industry in the Arctic in order to foster sustainable use of the Arctic marine environment.

7.4.6 Strengthen the Arctic Council's communication to the public in Arctic as well as non-Arctic countries putting emphasis on the importance of the ongoing changes in the Arctic and their likely impact also on non-Arctic areas.

8. Implementation

This Strategic Plan addresses both the short-term and long-term challenges and opportunities. The implementation of specific strategic actions should be determined to a large degree by the assessment of the risks and benefits, the collective political ability to act, the financial implications and the capacity (knowledge, facilities and effort) available to address the required objectives at any given time.

Achieving the goals of this Strategic Plan cannot be accomplished in isolation. Therefore, depending on the nature of the strategic actions, their implementation may be undertaken through the coordination and cooperation between the Arctic Council working groups or the governments of the Arctic countries. Implementation can also be enhanced through the involvement of observer countries, civil society, indigenous peoples, and the private sector.

Regional cooperation offers an economy of scale, particularly for research, monitoring, assessment and technical cooperation. It can also enhance policy and program coordination. The implementation of this Strategic Plan may require that the governments of the Arctic countries cooperate to promote the goals of the plan in international fora relating to climate change, pollution, economic activities and others.

Arctic Council Working Group Mandates

Arctic Monitoring and Assessment Program (AMAP): to measure the levels and assess the effects of anthropogenic pollutants in all compartments of the Arctic environment, including humans; to document trends in pollution; to document sources and pathways of pollutants; to examine the impact of pollution on Arctic flora and fauna, especially those used as food by indigenous people and

the general population; to report on the state of the Arctic environment to Ministers and relevant fora; and, to give advice to Ministers on priority actions needed to improve the environmental conditions in the Arctic.

Conservation of Arctic Fauna and Flora (CAFF): to address conservation of Arctic biodiversity and communicate scientific findings to the indigenous peoples and other local residents, and to the governments of the Arctic, helping to promote practices which ensure sustainability of the Arctic's living resources

Emergency, Prevention, Preparedness and Response (EPPR): to address the prevention of, preparedness for and response to environmental emergencies in the Arctic that result from human activities.

Protection of the Arctic Marine Environment (PAME): to address policy and non-emergency pollution prevention and control measures related to the protection of the Arctic marine environment from both land- and sea-based activities.

Sustainable Development Working Group (SDWG): to address the protection and enhancement of the economies, cultures and health of the inhabitants of the Arctic, in an environmentally sustainable manner.

Arctic Council Action Plan to Eliminate Pollution of the Arctic (ACAP): to prevent adverse effects from, reduce and ultimately eliminate pollution of the Arctic environment.

Arctic Council working groups may incorporate the Strategic Actions into their biannual workplans, as appropriate. To gauge and guide the implementation of the AMSP reports on progress of the implementation of the AMSP will be reported regularly to the Senior Arctic Officials as part of the regular reporting processes of all the AC working groups. Subject to direction from SAOs and Arctic Council Ministers, PAME, in collaboration with all Arctic Council subsidiary bodies, will also lead a review of the Strategic Plan by 2025, or another date specified by the Council, to determine its adequacy in light of the results of ongoing assessments and new and emerging findings.

Under the direction of SAOs, PAME will, in consultation with other Arctic Council working groups and permanent participants, develop a communication plan to support understanding and involvement in the implementation of this Strategic Plan.