



# PAME Work Plan

## 2017-2019

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## PREFACE

PAME focuses on the marine agenda of the Arctic Council and provides a unique forum for collaboration on a wide range of activities directed towards the protection and sustainable use of the Arctic marine environment.

PAME's activities are based on its mandate to address marine policy measures and other measures related to the conservation and sustainable use of the Arctic marine and coastal environment in response to environmental change from both land and sea-based activities, including non-emergency pollution prevention control measures such as coordinated strategic plans as well as developing programs, assessments and guidelines, all of which aim to complement or supplement efforts and existing arrangements for the protection and sustainable development of the Arctic marine environment.

PAME provides a unique forum for collaboration on a wide range of Arctic marine environment issues and consists of representatives from the Arctic states, who are responsible for its work in their respective countries, and representatives of Permanent Participant organizations on behalf of Arctic indigenous peoples. Additionally, the other Arctic subsidiary bodies, accredited observers and other Arctic stakeholders contribute to the ongoing work of PAME.

PAME generally meets twice a year to assess progress and advance its work. PAME is headed by a Chair and Vice-Chair, which rotate among the Arctic States and are supported by a Secretariat based in Iceland. PAME reports to the Senior Arctic Officials (SAOs), and through them, to the Ministers of the Arctic Council who meet every two years. PAME's work plan is approved by the SAOs and the Ministers.

## INTRODUCTION

The PAME Work Plan 2017-2019 was developed according to:

- PAME's mandate;
- priorities identified and recommendations made in reports and arrangements developed by or negotiated in Arctic Council subsidiary bodies that are approved by the SAOs and Arctic Ministers;
- direction provided in Ministerial declarations;
- follow-up on recommendations from Arctic Council projects and the Arctic Marine Strategic Plan (2015-2025), which outlines the overall direction of the Arctic Council for the protection of the Arctic marine environment, in addition to policy follow up to the scientific and other relevant assessments of the Arctic Council.



## PROJECTS AND ACTIVITIES

Additional project proposals may be developed within the scope of this work plan between 2017-2019, subject to confirmed lead/co-lead commitment and financing.

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

### **BACKGROUND:**

There is increasing demand for reliable and pertinent information in the Arctic context, which will increase as the region undergoes more development with increased human activities and climatic changes.

The Arctic Council has proven to be an important provider of scientific-based assessments, taking into account traditional and local knowledge. Informed policy decisions depend on improved understanding of the Arctic marine environment and drivers of change, attained through accurate, accessible and foundational scientific data, such as topographic, hydrographic, oceanographic and meteorological information, and other marine spatial data, as well as traditional and local knowledge.

Project/activity	Description	Lead(s) and partners
<i>Arctic Marine Shipping</i>		
<i>Continue to advance the work by PAME on mitigating risks associated with the use and carriage of Heavy Fuel Oil (HFO) by vessels in the Arctic</i>		
<p>✓ <b>HFO Phase IV(a) - Collect and report information on use of Heavy Fuel Oil (HFO) in the Arctic</b></p>	<p>Collect and report information for the most recent three-year period on the number, types and routes of ships in the Arctic that used HFO as fuel (including quality or grade) or transported it as cargo, including if available the volume of HFO carried as bunker fuel and/or cargo as well as the destination of HFO transported as cargo.</p>	<p>Canada, USA (utilizing the ASTD system if approved)</p>
<p>✓ <b>HFO Phase IV(b) - Collect, report and/or review information about on-shore use by indigenous peoples and local communities of HFO</b></p>	<p>A project in partnership with the Sustainable Development Working Group (SDWG) (subject to SDWG to confirmation) to collect, report and/or review information about on-shore use by indigenous peoples and local communities of HFO as well as the extent to which such peoples and communities rely on ships that burn HFO to deliver supplies and provisions</p>	<p>USA, AIA, CCU WG partner: SDWG</p>
<p>✓ <b>HFO Phase IV(c) - Prepare an information paper summarizing PAME's work on HFO.</b></p>	<p>Prepare an information paper summarizing PAME's work on HFO for possible submission by one or more Arctic States to IMO's Marine Environmental Protection Committee.</p>	<p>Canada, PAME Secretariat</p>
<p>✓ <b>HFO Phase IV(d) - Explore the environmental, economic, technical and practical aspects of the use by ships in the Arctic of alternative fuels.</b></p>	<p>Prepare or commission a report that explores the environmental, economic, technical and practical aspects of the use by ships in the Arctic of alternative fuels, including liquified natural gas.</p>	<p>Norway, WWF</p>
<p><b>Supporting harmonized</b></p>	<p>PAME anticipates finalizing and approving this</p>	<p>Finland,</p>

<p><b>implementation of the Polar Code.</b></p> <p><i>The Polar Code entered into force on 1 January 2017. For the Polar Code to be a success it is important to ensure harmonized implementation. Toward this end, both the IMO and the Arctic Council have major roles. This project will look at how PAME can best report on the Arctic States' implementation of the Polar Code.</i></p>	<p>project proposal at the PAME II-2017 meeting which proposes to include activities such as how best to report on the implementation of the Polar Code. Port State Control regime statistics on ship compliance will be examined. Challenges, if any, in observing the Polar Code implementation will also be evaluated. Close coordination with the IMO will take place throughout the project period. In February 2018 (in Helsinki), Finland will coordinate a related International Conference on Harmonized Implementation of the Polar Code. At the Conference, the “Polar Code Implementation Inspection Campaign” will be launched. It is proposed that this project also be launched at this event.</p>	<p>Russian Federation</p>
<p><b>Collect and summarize information on Arctic State safe and low-impact marine corridor initiatives</b></p>	<p>Collect and summarize information on Arctic State safe and low-impact marine corridor initiatives and programs and contribute to enhanced marine navigation safety with a view to submitting a report by PAME I-2019.</p>	<p>Canada, Iceland, AIA</p>
<p><b>Compendium of Arctic Shipping Accidents</b></p> <p><i>Joint PAME EPPR project to Update the database of shipping accidents in the Arctic contained in the 2009 Arctic Marine Shipping Assessment (AMSA) Report.</i></p>	<p>Develop a compendium of shipping accidents in the Arctic for the period 2005 – 2017 to update the database of shipping accidents in the Arctic contained in the 2009 Arctic Marine Shipping Assessment (AMSA) Report and provide information useful to considering measures that might be pursued to reduce the risk of accidents.</p>	<p>USA, EPPR</p>
<p><b>Engagement with Observer States</b></p> <p><i>Identify options for leveraging Observer State interest and expertise.</i></p>	<p>Develop an approach/framework for more systematically engaging with Observer States on PAME’s shipping-related work, and identify opportunities for Observer States to contribute to and/or support such work.</p>	<p>USA, AIA (Shipping Expert Group) Partners: Republic of Korea, Italy</p>
<p><b>Update of PAME’s shipping priorities and recommendations</b></p>	<p>Develop and adopt updated shipping priorities and recommendations under the three themes of the 2009 Arctic Marine Shipping Assessment (AMSA) Report (Enhancing Arctic Marine Safety; Protecting Arctic People and the Environment; and Building the Arctic Marine Infrastructure).</p>	<p>USA, Canada</p>

<p><b>Operationalization of the Arctic Shipping Traffic Database (ASTD) System</b></p>	<p>This activity will operationalize the ASTD, including the construction by 2018 and subsequent operation, administration and management of a data repository hosted by the Norwegian Coastal Administration as set forth in the Cooperative Framework.</p> <p><i>Refer to Annex I for the ASTD Cooperative Framework</i></p>	<p>Arctic states (PAME HoDs), ASTD Expert Group, PAME Secretariat,</p>
<p><b>Operationalization of Arctic Shipping Best Practices Information Forum</b></p>	<p>Hold an annual meeting of stakeholders and develop a web portal with links to key information related to the IMO's Polar Code to serve as a resource hub of information, guidance and guidelines that aid decision makers involved in Arctic maritime navigation and those affected by maritime operations related to the Polar Code.</p> <p><i>Refer to Annex II for the ToR for the Arctic Shipping Best Practices Forum</i></p>	<p>Shipping Expert Group (SEG) co-chairs (USA/Canada), Finland, PAME Secretariat</p>
<p><b>Develop an Implementation Plan for the ARIAS Strategy and Action Plan</b></p> <p><i>Refer to CAFFs work plan</i></p>	<p>CAFF, in cooperation with PAME, will develop an Implementation Plan for the ARIAS strategy and action plan.</p>	<p>SEG, PAME Secretariat</p>
<p><b>Marine Litter</b></p>		
<p><b>Desktop Study on Marine Litter including Microplastics in the Arctic (Phase I)</b></p>	<p>Conduct a Desktop Study on Marine litter including microplastics in the Arctic to evaluate the scope of knowledge on marine litter in the Arctic, and its effects on the marine environment.</p> <p>Based on its outcomes, explore whether there is a need for a Regional Action Plan on Marine Litter (possible Phase II for the period 2019-2021).</p> <p><i>Refer to Annex III for details on project plan, including timeline and budget.</i></p>	<p>Iceland, Norway, Sweden, and AIA.</p> <p>Collaboration and assistance will be sought, as relevant, from e.g. UNEP/GPA, AMAP and other organizations (e.g. OSPAR), as appropriate.</p>

**Implementation of the Arctic Marine Strategic Plan (AMSP)**

<b><i>AMSP Implementation Status Report 2017-2019</i></b>	To track progress on implementation of the AMSP forty strategic actions and develop an AMSP Implementation Status Report in collaboration with other Arctic Council working groups for the period 2017-2019 for submission to the Arctic Council Ministerial meeting in 2019.	PAME HoDs, PAME Secretariat
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**AMSP Goal 2: Conserve and protect ecosystem function and marine biodiversity to enhance resilience and the provision of ecosystem services.**

**BACKGROUND:**

Arctic marine ecosystems are under increasing pressure from multiple stressors including climate change, ocean acidification, long-range pollution, invasive species 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 amplified 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 (EA) 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.

Project/activity	Description	Lead(s) and partners
<b><i>Ecosystem Approach to Management</i></b>		
<p><b>Preparation of Guidelines for EA/EBM Implementation in the Arctic</b></p> <p><i>Continue to integrate the ecosystem approach into assessments and management recommendations through follow-up to the 2013 EBM marine-related recommendations, taking into account previous work on Large Marine Ecosystems (LMEs), and new and ongoing EA activities of cross-cutting nature.</i></p>	<ol style="list-style-type: none"> <li>1) Prepare guidelines addressing EA/EBM implementation in Arctic (marine) ecosystems (per Iqaluit declaration) following the EA Framework elements; adopt LMEs for management, describe Arctic Ecosystems, integrated ecosystem assessments, ecological objectives, and valuation of ecosystem services. EA Framework elements to receive particular attention are ecological objectives and integrated assessments.</li> <li>2) Hold 6<sup>th</sup> EA workshop in late autumn 2017/spring 2018 scoping guidelines for implementing EA in the Arctic, with a focus on Integrated Ecosystem Assessment.</li> <li>3) Hold 2nd International EA Conference 2018 on Integrated Ecosystem Assessment in the Arctic, Marine Protected Areas in</li> </ol>	<p>Norway, USA, Joint EA Expert Group</p> <p>Partners: CAFF, AMAP, SDWG, WWF</p>

	Implementation of EA, and Review tatus of implementation EA and EA framework elements. Continue to promote common understandings and share knowledge and experiences on EA.	
<b>Integrated Ecosystem Assessment of the Central Arctic Ocean</b>	Continue emphasis on development of Integrated Ecosystem Assessment. Continue to report on developments within ICES <sup>1</sup> /PICES <sup>2</sup> /PAME Working Group on Integrated Ecosystem Assessment (WGICA) and other ICES activities, and the meetings of scientific experts on fish stocks in the central Arctic Ocean.	cross-cutting initiative in cooperation with ICES/PICES, CAFF, AMAP
<b>Framework for a Pan-Arctic Network of MPAs</b>		
<p><b>Expansion and Refinement of the PAME MPA-network Toolbox.</b></p> <p><i>Enhance PAME's work on a Pan-Arctic Network of Marine Protected Areas and contributes to some of the near-term actions listed in the Framework for a Pan-Arctic Network of MPAs (near-term actions number 3, 4, 6, 7 and 9). (AMSP strategic action 7.2.10).</i></p>	<p>The project will include workshops and associated desk-studies that will build on previous work of the MPA Expert Group. This information will be integrated into the Arctic MPA-network Toolbox, a practical, hands-on resource for MPA programs and partners in advancing the design and implementation of MPA networks.</p> <p>Building on the first two MPA network workshops in September 2016 and February 2017, the PAME MPA-EG plans to hold two more workshops during the 2017-2019 work cycle to dedicate space for interactions and discussions among technical and country experts (e.g. researchers, government scientists, MPA managers, traditional and local knowledge-holders), Permanent Participants, and others.</p> <p>Finland and Sweden are organizing the third workshop in September 2017, while Canada may be in a position to organize the fourth in 2018.</p> <p><i>Refer to Annex IV for details on project plan.</i></p>	<p>Finland, Sweden, United States, MPA Expert Group</p> <p>Partners: CAFF, WWF, CCU</p>

<sup>1</sup> International Council for the Exploration for the Sea (ICES)

<sup>2</sup> The North Pacific Marine Science Organization (PICES)

**AMSP Goal 3: *Promote safe and sustainable use of the marine environment, taking into account cumulative environmental impacts.***

**BACKGROUND**

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. Safe and sustainable use of living and non-living marine resources should be promoted in a manner that maintains the structure of eco-systems, their functions and productivity, applies EBM and provides economic opportunity. There is substantial potential for economic development in the Arctic that will benefit both local communities as well as the Arctic states.

Pollution in the Arctic marine environment comes primarily from sources outside the region. Impacts from increased economic activities inside the region can, combined with impacts 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 mines, and land-based activities, are current and potential sources of marine pollution within the Arctic.

Project/activity	Description	Lead(s) and partners
<i>Arctic Offshore Resource Exploration and Development</i>		
<p><b>Meaningful Engagement of Indigenous Peoples and Communities in Marine Activities project (MEMA) Part II Report.</b></p> <p><i>Review and analyze the existing guidance and requirements in the region for engagement of indigenous peoples and local communities in marine activities to inform the Arctic Council on whether more or consolidated recommendations need to be made.</i></p>	<p>Expand and reanalyze information and finish the MEMA Part II Report; Explore cooperation with SDWG and the PPs to follow up on the MEMA outcomes and other potential projects, such as the <i>Human Dimensions of Arctic EIAs</i> (refer to the SDWG project on <i>Arctic Environmental Impact Assessment and Public Participation – Good Practice Recommendations</i>).</p> <p><i>Refer to Annex V for details on project plan, including timeline for MEMA Part II.</i></p>	<p>USA, Canada, AIA, Saami Council, ICC – (REDEG)</p> <p>Partner: SDWG</p>

<p><b>Resource Exploration and Development Expert Group (REDEG) Information gathering</b></p> <p><i>The REDEG will focus on information gathering on a number of germane and timely topics for the next two years.</i></p>	<ol style="list-style-type: none"> <li>1) Identify and invite experts to address PAME at biennial meetings on the following topics: Offshore Renewable Energy; Noise in the Marine Environment; Offshore and Coastal Mining; and Offshore Oil and Gas. REDEG may also invite information papers - “Think Pieces” - from PAME members on any of these issues. The first being considered are on marine noise and/or offshore renewable energy.</li> <li>2) Online Survey results for implementation of selected recommendations from the Systems Safety Management and Safety Culture Report with EPPR.</li> </ol>	<p>USA, Canada Partner: EPPR</p>
<p><b>Follow-up on the Framework Plan on Oil Pollution Prevention (FP-OPP).</b></p> <p><i>Refer to EPPRs work plan on this item.</i></p>	<p>EPPR, in cooperation with PAME, will continue to report on the status of implementation of the FP-OPP. The Status Report on implementation identifies follow-up activities that support the objectives in the Framework Plan. The report will include input from other Arctic Council working groups and relevant stakeholders capturing activities that are already taking place.</p>	<p>REDEG and SEG</p>
<p><b>Good Practice Recommendations for Environmental Impact Assessment, EIA, and Public Participation in EIA in the Arctic (Arctic-EIA)</b></p> <p><i>Refer to SDWGs work plan on this item.</i></p>	<p>PAME will contribute to this work based on its project plan and relevance to PAME’s work.</p>	<p>REDEG</p>

***AMSP Goal 4: Enhance the economic, social and cultural well-being of Arctic inhabitants, including Arctic Indigenous Peoples and strengthen their capacity to adapt to changes in the Arctic marine environment.***

**BACKGROUND:**

The health, well-being, and adaptability of Arctic indigenous peoples 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 peoples and local communities. It is likely that those living a traditional lifestyle will be most vulnerable to human health impacts from climate change related issues.

<b>Project/activitiy</b>	<b>Description</b>	<b>Lead(s) and partners</b>
<b>Capacity building, information outreach and collaboration</b>	<ol style="list-style-type: none"> <li>1) Strengthen information outreach and cooperation and collaboration with international/regional organizations and to build the capacity and engagement of indigenous communities and other Arctic inhabitants.</li> <li>2) Liaise and exchange information with relevant organizations and programs (e.g. UNEP Regional Seas Programme), and other regional programs.</li> <li>3) Encourage activities and proposals from Permanent Participants.</li> <li>4) Strive for the development of outreach and communication efforts and plans for PAME’s activities (e.g. through updates on the PAME homepage, brochures, roll-up stands, other communication material)</li> </ol>	PAME Chair/Secretariat



**Annex I: Arctic Ship Traffic Data (ASTD) Cooperative Agreement**

# Annex I: Arctic Ship Traffic Data (ASTD) Cooperative Agreement

*As approved by SAOs in NYC on 6 April 2017*

## AN ARCTIC COUNCIL FRAMEWORK FOR COOPERATIVE ACTION ON ARCTIC SHIP TRAFFIC DATA SHARING

1. PARTICIPANTS: Any Arctic State is eligible to be a Participant in this Arctic Council Framework for Cooperative Action on Arctic Ship Traffic Data Sharing (“ASTD Framework”).
2. REFERENCES: The Protection of the Arctic Marine Environment Working Group’s [Work Plan 2015-2017](#), the [Arctic Marine Shipping Assessment Report \(2009\)](#), the [Arctic Ocean Review Final Report \(2013\)](#), and the [Arctic Marine Strategic Plan 2015-2025](#).
3. PURPOSE: The purpose of this ASTD Framework is to describe and define the general conditions for the intended sharing of Arctic Shipping Data among the Participants.
  - 3.1. BACKGROUND: The Arctic Ship Traffic Data (ASTD) Project is an initiative of the Arctic Council’s Working Group on the Protection of the Arctic Marine Environment (PAME) and is based in part on the Arctic Marine Shipping Assessment Report (AMSA 2009) and its 2005 shipping database. The purpose of the ASTD Project is to collect information about shipping activity in the Arctic (“Data”) from the Participants to use for traffic trend analyses and related purposes under the realm of the Arctic Council. Project objectives are to develop a long-term, sustainable collection of Arctic shipping activity information consisting of a Data repository that includes ship traffic and related information provided by the Participants and a web application/tool to extract information from the repository, allowing for periodic trend analyses.
  - 3.2. DATA TO BE SHARED: Each Participant intends to provide the Data which it deems to be relevant to this ASTD Framework to the Data repository specified in section 3.1 and to make this Data available to all the other Participants using the technical data exchange network (“the Network”) that is created under this ASTD Framework. It is anticipated that the Data will typically include, but not be limited to, Automatic Identification System (“AIS”) vessel tracking information from SOLAS vessels and other vessels carrying AIS transponders, port arrival/departure information and other pertinent ship traffic data as decided by the Participants. The Data may be provided in real time, from historical data registries, or from aggregated statistical data sources as decided by the Participants, but not presented in real time. The Participants intend to share the Data on a regular basis.
  - 3.3. OWNERSHIP OF DATA: The Participants intend to share the data

described in section 3.2 with each other without limitation so long as used within the scope of the ASTD Project. Nothing in this ASTD Framework is intended to affect any right, title or ownership interest in and to the Data that each Participant may have under its domestic law, nor is it intended to prevent a Participant from sharing the Data it provides under this ASTD Framework with any other entity under whatever terms and conditions it may deem appropriate. Each Participant intends to ensure that any Data it provides under this ASTD Framework does not infringe upon any patent, trademark, copyright or other intellectual property ownership rights and interests.

- 3.4. USE OF SHARED DATA: Any Data that the Participants make available under this ASTD Framework is intended to be used for purposes of Arctic Council work and for the benefit of the Arctic States including: (i) protection of the marine environment; (ii) safety of navigation, maritime safety and security; (iii) vessel traffic services; (iv) port state control; (v) marine planning; (vi) search and rescue; (vii) accident investigation; (viii) pilotage; and (ix) customs surveillance. The Participants do not intend there to be any commercial use of the data under this ASTD Framework
- 3.5. ACCESS TO SHARED DATA: The Participants intend that Data is to be accessed and shared only as provided in Attachment One and pursuant to a signed Form for a Standard Arrangement on Access to and Use of ASTD Data (refer to Attachment One). To the extent that any Participant is required by law to make the Data available for any purpose not described in this ASTD Framework and Attachment One, that Participant intends to notify the PAME International Secretariat and all other Participants prior to any such disclosure and to provide reasonable opportunity for other Participants to indicate whether their Data should be withheld from disclosure. Whenever a notification occurs, the Participants intend for the PAME International Secretariat to arrange for the withholding of such Data. Any such disclosure is to take place only in accordance with a signed "data sharing arrangement," in form comparable to the one attached hereto as Attachment Two.

#### 4. ROLES OF THE PARTICIPANTS AND THE PAME INTERNATIONAL SECRETARIAT:

##### 4.1 Each Participant intends to:

- 4.1.1 Obtain whatever authorizations and approvals are necessary to participate in this ASTD Framework and in the Network.
- 4.1.2 Restrict its use and distribution of the Data it receives from the Network in accordance with any and all distribution and restriction policies that may be required by the Participant that provides the source data.

- 4.1.3 Pay its annual pro rata share, distributed evenly among the Participants, of the costs necessary to create, manage, administer and operate the Network. In the event that entities other than Participants make contributions to the costs of constructing, managing, administering and operating the network, each Participant's annual pro rata share will be proportionately reduced by deducting the total amount contributed by these entities in a given calendar year from the total amount that the Participants collectively would otherwise have been asked to contribute that year, and calculating a reduced pro rata share. The PAME International Secretariat will make this calculation. Each Participant's reduced annual pro rata share will be paid in the calendar year following the year in which the contributions from entities other than Participants were received.
  - 4.1.4 Timely remit those funds necessary to construct, manage, administer and operate the Network, as described in Attachment Three, hereto, to the PAME International Secretariat.
  - 4.1.5 Take all actions necessary to ensure the accuracy and integrity of the Data it submits under this ASTD Framework.
  - 4.1.6 Honor all guidelines and reasonable restrictions imposed by the Network Manager with respect to use of the Network. The Network Manager is the Norwegian Coastal Administration.
  - 4.1.7 Abide by all of the provisions of this ASTD Framework for as long as it is a Participant.
- 4.2 The Participants intend the PAME International Secretariat to:
- 4.2.1 provide administrative support for and oversight of this ASTD Framework and the associated technical data exchange that occurs under this ASTD Framework;
  - 4.2.2 administer access to the Network in collaboration with the Network Manager as described in Attachment One; and
  - 4.2.3 receive financial contributions made under section 4.1.4 and transfer those contributions to the Network Manager to cover the costs of constructing, managing, administering and operating the Network.
5. POINTS OF CONTACT:
- 5.1. Each Participant intends to designate one or more "Contact Persons" for purposes of this ASTD Framework and the Network. A list of Contact Persons is shown in Attachment Four, hereto.
  - 5.2. The Participants intend the PAME International Secretariat to maintain an accurate and up-to-date list of names and contact details for Contact Persons.

- 5.3. Any change intended to be made by a Participant to its designated Contact Person(s) is to be submitted to the PAME International Secretariat at the following e-mail: [pame@pame.is](mailto:pame@pame.is). The Participants request that the PAME International Secretariat timely notify all Participants of any changes to the list of Contact Persons.
6. OTHER PROVISIONS:
  - 6.1. PRIVACY: The Participants intend to treat any Data submitted to the Network that contains Personally Identifiable Information or otherwise raises any privacy concerns in accordance with their respective national privacy laws.
  - 6.2. REVIEW: The Participants intend to review this ASTD Framework at each PAME Working Group annual fall meeting (PAME-II), or at any other occasion as decided by consensus of the Participants.
  - 6.3. ENTIRE ASTD FRAMEWORK: The Participants intend that this ASTD Framework embodies their entire understanding regarding the ASTD Framework's subject matter.
  - 6.4. INTERNATIONAL LAW: This ASTD Framework represents political commitments of the Arctic States. The Participants do not intend this ASTD Framework to be binding under international law.
7. REVISION/UPDATING: The Participants intend that any modifications or revisions to this ASTD Framework are to be done only by mutual written understanding of the Participants.
8. Nothing in this ASTD Framework precludes the Participants from deciding at a later date to modify or revise it to allow Permanent Participants and Arctic Council Observers to participate in and contribute to this data sharing project at a more in-depth level than the access options described in Attachment Two.
9. PARTICIPATION: Any Arctic State may become a Participant by notifying the PAME International Secretariat in writing and providing a Point of Contact as described in paragraph 3.5.
10. DISCONTINUATION: Any Participant may discontinue its participation in the ASTD Framework by providing at least 30 days prior written notice to all of the other Participants. Discontinuation by a Participant does not affect the ongoing operation of the ASTD Framework. Participants intend for discontinuation of the ASTD Framework to occur only when the Participants mutually decide in writing to do so.

## ASTD FRAMEWORK - ATTACHMENT ONE

### Sample Form for a Standard Arrangement on Access to and use of ASTD Data

*(Refer to paragraph 3.5 of the ASTD Framework)*

#### I. BACKGROUND:

This document outlines the exchange of ship traffic Data in the Arctic through the Arctic Council Ship Traffic Database (ASTD). The ASTD builds on the Havbase platform which is operated by the Norwegian Coastal Administration (NCA) and is compatible with other systems such as the Arctic Spatial Data Infrastructure (Arctic-SDI) platform and the Arctic biodiversity data service. The Data from the ASTD (herewithin referred to as the “System”) will be shared by and among the Arctic States and other entities as set forth in this Attachment and the *Arctic Council ASTD Framework for Cooperative Action on Arctic Ship Traffic Data Sharing (ASTD Framework)*.

The Data will be accessed through the Havbase system which will be adapted and “tailor made” to meet the requirements and needs of the ASTD. Data will be stored on secure and dedicated servers as part of the Network described in the ASTD Framework, for which the NCA is the Network Manager. The ASTD expert group members in coordination with the PAME Shipping Expert Group Co-Chairs and with the concurrence of the PAME Heads of Delegations will decide which users will gain access, and the type of access granted. The PAME International Secretariat will act as administrator for user access.

#### II. USER ACCESS LEVELS:

There are four access levels to the System as defined in the table below. The Arctic States intend that the PAME International Secretariat will act as the administrator in close collaboration with the Norwegian Coastal Administrations’ Havbase team.

USERS AND ACCESS LEVELS
<b>LEVEL 1:</b> Arctic States that are current on their annual <i>pro rata</i> share financial contributions.
LEVEL 1 access means access to all data in the database for analysis under the auspices of the Arctic Council. The data will include: <ul style="list-style-type: none"><li>✓ UTC timestamp of position report</li><li>✓ Vessel identity; Maritime Mobility Service Identity (MMSI) number and International Maritime Organization (IMO) ship identification number</li><li>✓ Latitude and longitude</li><li>✓ Speed over ground</li><li>✓ Course over ground</li><li>✓ Detailed Ship type for each ship sailing, 49 ship types included</li><li>✓ Emission data for each ship</li><li>✓ Tonnage,</li><li>✓ Size</li><li>✓ Engine data,</li><li>✓ Tank volumes, and</li></ul>

✓ Anticipated main fuel types

LEVEL 1 data may be accessed only by means of a request to the PAME International Secretariat.

To allow each Participant to withhold Data it has provided under this ASTD Framework as described in section 3.5, the PAME International Secretariat will notify all Participants of each LEVEL 1 request before distributing any data. If a Participant does not object to the inclusion of its Data in what has been requested within 28 calendar days after notification by the PAME International Secretariat, the PAME International Secretariat will download and transmit the requested data once the requester signs a Data Sharing Arrangement (Attachment Two).

If within 28 calendar days after notification by the PAME International Secretariat of a LEVEL 1 request a Participant objects to the inclusion of its Data in what has been requested, its Data will not be included in the requested data, which will be downloaded and transmitted by the PAME International Secretariat as described above.

**LEVEL 2:** Arctic States that are current on their annual *pro rata* share financial contributions.

LEVEL 2 provides access to the same data as is available under LEVEL 1 *except* that vessel identity data (MMSI, IMO ship identification number and ship name) is not included.

The distinction between LEVEL 1 and LEVEL 2 Access is that under LEVEL 2 Access, the Arctic State receives a username and password from the PAME International Secretariat to access the database directly.

To allow each Participant to withhold Data it has provided under this ASTD Framework as described in section 3.5, the PAME International Secretariat will notify all Participants of each LEVEL 2 request before providing the requestor with a username and password. If a Participant does not object to the inclusion of its Data in a LEVEL 2 request within 28 days after notification by the PAME International Secretariat, the PAME International Secretariat will provide the requestor with a username and password to access the database once the requester signs a Data Sharing Arrangement (Attachment Two).

If within 28 days after notification by the PAME International Secretariat of a LEVEL 2 request a Participant objects to the inclusion of its Data in what has been requested, its Data will not be included in what the requestor will be able to access after signing a Data Sharing Arrangement (Attachment Two) and receiving a username and password from the PAME International Secretariat.

**LEVEL 3:** Arctic States that are not current on their full annual *pro rata* share financial contributions; Permanent Participants; Arctic Council Subsidiary Bodies; Arctic Council Observers that have made a financial contribution of an amount decided by PAME member governments to the administration, maintenance and operation of the Network.

LEVEL 3 access means access to the same data as is available under LEVEL 2 *except* that ship type information is aggregated into 13 ship types instead of 49 ship types.

The PAME International Secretariat will notify all Participants of each LEVEL 3 request. LEVEL 3 access may be granted only if there is consensus to do so among all Participants. If

no Participants objects to the LEVEL 3 request within 28 calendar days after notification by the PAME International Secretariat, the requestor will receive a username and password after it has signed a data sharing arrangement (Attachment Two)

A Participant may request LEVEL 3 access on behalf of an accredited academic institution or other recognized research entity under the terms and conditions described in the ASTD Framework and this section, the signing of a data sharing arrangement (Attachment Two), and the payment of a financial contribution by the academic institution or research entity in an amount to be decided by PAME.

**LEVEL 4:** General public, open viewing online.

Level 4 access means access that is available to the general public online. No data can be downloaded with Level 4 access; only limited high-level aggregated information is available for viewing.

**ASTD FRAMEWORK - ATTACHMENT TWO**  
**SAMPLE OF A DATA SHARING ARRANGEMENT**

<u>Requester</u>	<u>Data Provider</u>
Agency Name:	Agency Name:
Data User:	Custodian:
Title:	Title:
Address:	Address:
Phone:	Phone:
E-mail:	E-mail:

**I. PURPOSE**

In this section, both signatories are to state in non-technical language the purpose(s) for which they are entering into the data sharing arrangement, i.e., how the Data will be used, what research or studies will be performed, or what the desired outcomes are perceived to be as a result of obtaining the Data. The Data may only be used for research and/or analytical purposes as stipulated in paragraph 3.4 of the ASTD Framework. As provided in paragraph 3.4 of the ASTD Framework, Participants do not intend there to be any commercial of the Data.

Any and all Data shared under this Arrangement is subject to all applicable requirements regarding privacy and confidentiality that are described herein.

**II. PERIOD OF ARRANGEMENT**

The period of arrangement extends from \_\_\_\_\_ to \_\_\_\_\_

**III. JUSTIFICATION FOR ACCESS**

In this section, the requestor provides justification under the terms and conditions of the ASTD Framework for access to the Data

**IV. DESCRIPTION OF DATA**

In this section, the signatories provide specific detailed information concerning the Data to be accessed or shared.

**V. METHOD OF DATA ACCESS OR TRANSFER**

In this section, a description of the method of Data access or transfer is provided.

**VI. LOCATION OF MATCHED DATA AND CUSTODIAL RESPONSIBILITY**

The signatories understand that one Agency/body will be designated as “Custodian” of the file(s) and will be responsible for the observance of all conditions for use and for establishment and maintenance of security protocols as specified in this arrangement to prevent unauthorized use. Where and how the Data will be stored and maintained will also be specified in this section.

Each signatory represents and warrants further that, except as specified in an attachment or except as authorized in writing, that such Data is not to be disclosed, released, revealed,

showed, sold, rented, leased, loaned, or otherwise have access granted to the Data covered by this arrangement to any person. Access to the Data covered by this arrangement is to be limited to the minimum number of individuals necessary to achieve the purpose(s) stated in this section and to those individuals on a need-to-know basis only.

However, any aggregated data products that are used for assessments, analysis and other relevant reports may be shared and should be accessible to Arctic States and the PAME International Secretariat for other usages.

Any use of Data from the Arctic Ship Traffic Database is to be referenced accordingly.

## **VII. CONFIDENTIALITY**

The requestor commits to establishing appropriate administrative, technical, and physical safeguards to protect the confidentiality of the Data and to prevent unauthorized use of or access to it.

## **VIII. DISPOSITION OF LEVEL 1 DATA**

The requestor and its agents are to destroy all confidential information associated with actual records as soon as the purpose(s) of the project have been accomplished and notify the PAME International Secretariat and its dedicated contact person. When the project is complete, the requester is to:

1. Destroy all hard copies containing confidential data;
2. Archive and store electronic data containing confidential information off line in a secure place, and delete all on line confidential data; and
3. Erase or maintain in a secured area all other data.

## **IX. RESOURCES**

The types and number of personnel involved in the Data sharing project, the level of effort required, as well as any other non-personnel resources and material, which are required, are to be listed here.

## **X. NONCOMPLIANCE**

Any noncompliance with this arrangement may result in immediate termination of this arrangement, immediate suspension of access to Data, and the automatic denial of any future requests to access Data. If access to Data is suspended, no refund or reimbursement will be made of any previous financial contribution.

## **XI. SIGNATURES**

In witness whereof, the PAME Chair is designated to execute this arrangement effective with this signing for the period set forth in Article II.

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(Name)

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(Title)

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(Date)

**ASTD FRAMEWORK - ATTACHMENT THREE  
NETWORK COSTS**

**ESTIMATED PRO-RATA SHARES**

Currently estimated annual Network costs (denoted in U.S. dollars), including the voluntary annual *pro rata* share for each Participant’s financial contribution, and are set forth in the table below.

	Timeframe				
	Year 1	Year 2	Year 3	Year 4	Year X
Development costs:	134.000				
Annual running costs:		28.000	28.000	28.000	28.000
<b>Total estimated annual costs:</b>	<b>134.000</b>	<b>28.000</b>	<b>28.000</b>	<b>28.000</b>	<b>28.000</b>
<b><i>Estimated annual costs per Participant:</i></b>	<b><i>19.000</i></b>	<b><i>4.000</i></b>	<b><i>4.000</i></b>	<b><i>4.000</i></b>	<b><i>4.000</i></b>
<b><i>Total costs after 4 years of operation:</i></b>				<b><i>246.000</i></b>	
<p><i>*Norway’s yearly contribution is deducted accordingly as requested by Norwegian Coastal Administration, to simplify the cost sharing of the system. Norway has operated and developed Havbase for several years and will continue to maintain and improve the system which will benefit this project with continual and additional costs for Norway. However, Norway will pay its equal share of the costs as a member State of the Arctic Council but as a measure to simplify the paying procedure.</i></p>					

**Annual Running Costs:**

Running costs include administration, data storage, maintenance, operation, change and update of hardware and other related aspects. It will also cover license fees and upgrades to key software components when technology is outdated. Current estimated total annual running costs are \$28.000 USD.

## ASTD FRAMEWORK - ATTACHMENT FOUR

### DESIGNATED CONTACT PERSONS

Country	ASTD Designated Contact Persons	ASTD Designated Technical Experts
<b>USA</b>	Peter Oppenheimer Chief, International Section Office of General Counsel National Oceanic and Atmospheric Administration <a href="mailto:Peter.Oppenheimer@noaa.gov">Peter.Oppenheimer@noaa.gov</a> Tel: +1 202-482-0032	Brian Page US Coast Guard – Office of Communication and Sensors Capabilities (CG-7611) <a href="mailto:Robert.B.Page@uscg.mil">Robert.B.Page@uscg.mil</a>
<b>Norway</b>	Anja Elisenberg Senior Adviser Ministry of Climate and Environment <a href="mailto:ae@kld.dep.no">ae@kld.dep.no</a> Tel: +47 22245806	Jon Arve Royset Senior Advisor Norwegian Coastal Administration <a href="mailto:jon.arve.royset@kystverket.no">jon.arve.royset@kystverket.no</a> Tel: +47 37019760 Mobile: +47 90137505
<b>Kingdom of Denmark</b>	Pernille Palmelund Sørensen (SFS) Head of Section Danish Maritime Authority Maritime Regulation and Legal Affairs <a href="mailto:PS@dma.dk">PS@dma.dk</a> Tel: +45 72 19 63 12 Mobile: +45 91 37 63 12	Mads Bentzen Billesö Danish Maritime Authority <a href="mailto:MCB@dma.dk">MCB@dma.dk</a> Tel: +45 9137 6329
<b>Canada</b>	Drummond Fraser Transport Canada <a href="mailto:drummond.fraser@tc.gc.ca">drummond.fraser@tc.gc.ca</a>	Patrice Côté Transport Canada <a href="mailto:Patrice.Cote@tc.gc.ca">Patrice.Cote@tc.gc.ca</a>
<b>Finland</b>	Anita Makinen Finnish Transport Safety Agency <a href="mailto:anita.makinen@trafi.fi">anita.makinen@trafi.fi</a>	Kaisu Heikonen Finnish Transport Agency <a href="mailto:kaisu.heikonen@fta.fi">kaisu.heikonen@fta.fi</a>
<b>Iceland</b>	Helga Jónsdóttir Ministry for the Environment and Natural Resources <a href="mailto:helga.jonsdottir@uar.is">helga.jonsdottir@uar.is</a>	Greipur Gísli Sigurðsson Icelandic Road and Coastal Administration (IRCA) <a href="mailto:ggs@vegagerdin.is">ggs@vegagerdin.is</a>
<b>Sweden</b>	Jessica Nilsson Swedish Agency for Marine and Water Management <a href="mailto:jessica.nilsson@havochvatten.se">jessica.nilsson@havochvatten.se</a>	Johan Winell Swedish Maritime Administration <a href="mailto:johan.winell@sjofartsverket.se">johan.winell@sjofartsverket.se</a>



**Annex II: Arctic Marine Best Practice Information Forum (the FORUM)  
Terms of Reference**

## Annex II: Arctic Marine Best Practice Information Forum (the FORUM) Terms of Reference

### Preamble

1. The Arctic region is unique. A home to indigenous communities for many generations, the Arctic is environmentally and ecologically sensitive, experiences extreme weather and climatic events, and is rich in both flora and fauna and in living and non-living natural resources. With advances in technology and changing environmental conditions, there is a growing focus on the development of these resources (e.g., oil and gas, mineral deposits, fish stocks) and the expansion of maritime activity. The Arctic is also a region of timeless and diverse indigenous practices and customs which must be included in any critical assessment of contemplated maritime activity.
2. As the Arctic changes, maritime activity must be carried out in an environmentally sustainable manner to prevent or mitigate any negative social and ecological consequences.
3. In order to increase the safety of ships' operation and mitigate the impact on the people and environment in the remote, vulnerable and potentially harsh polar waters, the International Maritime Organization (IMO) in 2015 adopted the *International Code for Ships Operating in Polar Waters* (the Polar Code) which sets out international safety and pollution prevention requirements for ships operating in Arctic and Antarctic waters.
4. IMO Contracting Parties developed the Polar Code to supplement existing IMO instruments with the objective of increasing the safety of ships as well as reducing possible negative impacts of international shipping activities on the peoples and environment in the Polar Regions.
5. The Polar Code imposes additional requirements on ships and their operations beyond the existing ones set forth in the *International Convention for the Safety of Life at Sea (SOLAS), 1974*, the *International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto as amended by the 1997 Protocol (MARPOL)*, the *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978*, and other relevant IMO instruments.
6. The Polar Code acknowledges that operations in Polar Regions impose navigational demands on ships beyond those normally encountered in other latitudes. For example, in many Arctic areas, nautical charts may lack adequate specificity or may not be sufficiently up-to-date for safe navigation of the intended operations. Despite annual fluctuations in sea ice cover, sea ice hazards are also pervasive. Coverage of the region by communications satellites is limited.
7. Complementing the role of the IMO as the international organization globally responsible for addressing safe, secure, and environmentally sound maritime navigation, the Arctic Council's Working Group on the Protection of the Arctic Marine Environment (PAME) has a mandate to address policy and non-emergency pollution prevention and control measures related to the protection of the Arctic marine environment from sea-based activities.

8. PAME is fully cognizant of the relationship between safety measures and protection of the marine environment and recognizes that safety measures taken to reduce the probability of a maritime accident are likely to lower the risk of damage to the environment.

### **PAME Objectives for the Polar Code**

9. The Polar Code entered into force on 1 January 2017. As a set of fundamental obligations concerning international shipping activity in the Arctic, its terms must be fully understood, consistently implemented, and faithfully adhered to.

10. To promote effective implementation of and compliance with the Polar Code, PAME recognizes the need to raise awareness of its provisions amongst all those involved in or potentially affected by Arctic marine operations, including ship owners and operators, Flag, Port and Coastal States, classification societies, marine insurers, financial institutions funding Arctic activity, and indigenous and local communities.

11. In particular, a forum open to those decision makers and stakeholders engaged with Arctic marine operations as identified in paragraph 18 will support broad understanding of the inputs for best navigational practices and operational limitations as listed, but not limited to those enumerated in paragraph 14.

12. To obtain a Polar Ship Certificate under the Polar Code, a ship operating in Polar Waters is required to carry on board a Polar Waters Operational Manual (PWOM) that provides the owner, operator, master and crew with sufficient information regarding the ship's operational capabilities and limitations in order to support their decision making process.

13. Issuance of a Polar Ship Certificate (PSC) requires the preparation of an Operational Assessment. This Operational Assessment involves taking into consideration the anticipated range of operating and environmental conditions and various hazards that may lead to elevated levels of risk. The outcome of the Operational Assessment informs the PWOM that must be carried on board the ship.

14. Voyage planning and Operational Assessments require knowledge and consideration of environmental and other conditions as they relate to the operation of the ship and the ship's limitations. Essential components of the Operational Assessment are voyage planning (as described in IMO *Guidelines for Voyage Planning*, Resolution A.893(21) adopted on 25 November 1999) and any defined ship operational limitations require numerous important inputs, which include but are not limited to the following:

- a) Hydrography;
- b) Meteorology;
- c) Ice data;
- d) Crew training;
- e) Search and rescue logistics;
- f) Communication;
- g) Industry guidelines;
- h) Traditional and local knowledge;

- i) Ecological knowledge;
- j) Operational understanding; and
- k) Ship equipment, systems and structure.

### **The Forum**

15. PAME has decided to establish a Forum to increase awareness of the Polar Code. The Forum will facilitate the compilation, exchange and public sharing of associated information and best practices, including with respect to the inputs identified in paragraph 14. This compilation, exchange and public sharing of information will assist all those involved in the decision-making processes in relation to Arctic marine operations under the Polar Code.

16. To achieve this objective, PAME will establish and maintain a publicly accessible web portal that will link to and make this information available in one place.

### **Forum Organization and Membership**

17. Arctic States<sup>3</sup> intend the Forum to meet annually under PAME's auspices, with the oversight and guidance of the Co-Chairs of PAME's Shipping Expert Group, and with a representative of the Arctic State that holds the Chairmanship of the Arctic Council at the time the Forum meets serving as Chair of the Forum. This may be a virtual meeting facilitated by, where practicable, teleconference or videoconference.

18. Arctic States intend Forum membership to be open to Arctic States, Permanent Participants and Arctic Council Observers as well as any widely-recognized professional organization dedicated to improving safe and environmentally sound marine operations in the Arctic as demonstrated by expertise and experience in Arctic shipping and/or related issues (*e.g.*, hydrography, meteorology, nautical charting, ice data, high-latitude communications, ecological information, search and rescue, marine insurance, naval architecture, pilotage, traditional and local marine knowledge).

19. Arctic States intend that any decisions taken by the Forum under paragraphs 15 and 16 are to be by consensus of its Members. Any disagreements may be referred by the Shipping Expert Group Co-Chairs to PAME for resolution at its next scheduled meeting.

20. The PAME Secretariat, in consultation with the Shipping Expert Group Co-Chairs, will invite participants by letter to each annual meeting.

21. The Forum intends to review and update the web portal content at each Forum meeting.

22. Forum Members also intend to communicate intersessionally to identify web portal updates and address other Forum matters as necessary.

23. Forum Members intend that they may, by consensus, invite one or more experts to attend a Forum meeting and, if appropriate, to submit information to and/or make a presentation at such meeting.

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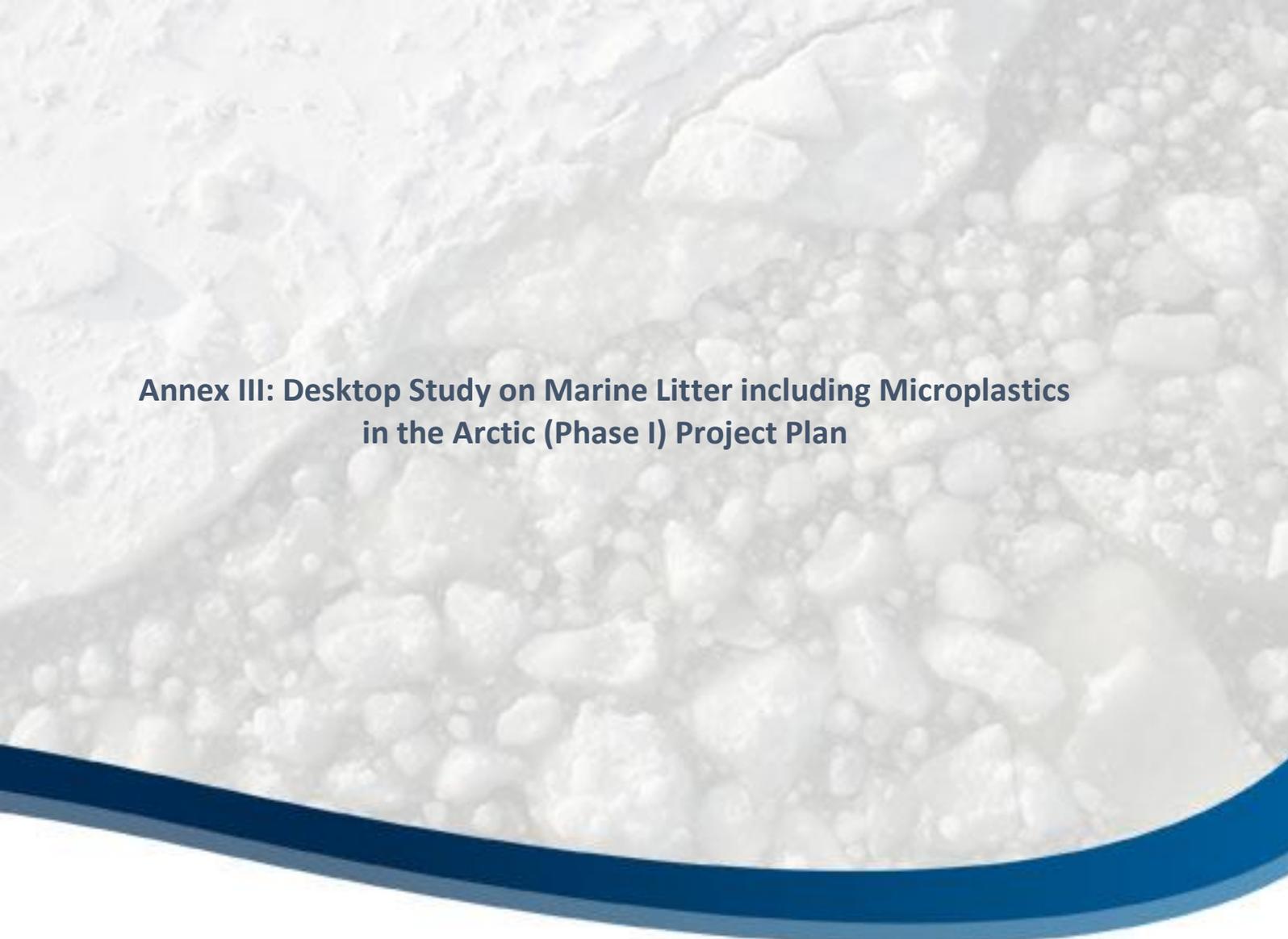
<sup>3</sup> The Arctic States are Canada, the Kingdom of Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden, and the United States of America.

24. When appropriate, Forum Members intend to take notice of and post to the web portal relevant information related to maritime operations in the Antarctic.

25. Forum Members may decide by consensus upon rules of procedure to guide Forum meetings and eligibility criteria for information proposed to be posted to the web portal. Such rules of procedure may be updated from time-to-time (refer to paragraph 17).

26. Each Forum Member is to provide a single point of contact to the PAME Secretariat. The PAME Secretariat is to maintain a current list of Forum Member points of contact. Such points of contact are to be posted on the web portal.

27. These Terms of Reference are not binding under international law. Activities by Forum Members under these Terms of Reference are undertaken voluntarily and are subject to the availability of funds. The Forum has no authority over Members.



**Annex III: Desktop Study on Marine Litter including Microplastics  
in the Arctic (Phase I) Project Plan**

## Annex III: Desktop Study on Marine Litter including Microplastics in the Arctic (Project Plan)

### Project Title:

Desktop Study on Marine Litter including Microplastics in the Arctic

### 2017-2019:

- ✓ Conduct a Desktop Study on Marine litter and Microplastics in the Arctic, and based on its outcomes, and
- ✓ Explore the possibility of developing an outline for a framework on an Arctic regional action plan on marine litter.

### Background

A representative from the [Global Programme of Action for the Protection of the Marine Environment from Land-based Activities \(GPA\)](#) of the United Nations Environment Programme (UNEP) was invited by the PAME Working Group of the Arctic Council to present to its meeting in Maine, USA (September 2016) on the issue and possible linkages to PAME's work. The purpose was to inform PAME of UNEP's work and make recommendations on possible marine litter actions. UNEP presented the following nine recommendations with the aim to explore the possibility of developing a new PAME project on this subject for inclusion into the 2017-2019 Work Plan:

- ✓ Conduct an **assessment** of the marine litter issue in the Arctic region;
- ✓ Develop a **regional action plan** on marine litter;
- ✓ Develop joint **projects with UNEP** addressing marine litter in the Arctic;
- ✓ Contribute information and/or case studies to the next **MOOC**;
- ✓ Join the **Global Partnership on Marine Litter**;
- ✓ Nominate experts to the **Advisory Group** for the Assessment;
- ✓ Join the **Global Campaign on Marine Litter**;
- ✓ Engage in the monitoring of **marine litter indicators** under **Sustainable Development Goal 14.1.**;
- ✓ Organize **joint events** on marine litter in the arctic marine environment;

### Rationale

Marine litter is one of the most pervasive pollution problems affecting the marine environment globally. UNEP defines it as 'any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment'. Marine litter consists of items that have been made or used by people and deliberately discarded into the sea or rivers or on beaches; brought indirectly to the sea with rivers, sewage, storm water or winds; or accidentally lost, including material lost at sea in bad weather.<sup>4</sup>

The universal challenge of addressing and managing marine litter is a useful illustration of the global and transboundary nature of many marine environmental problems.

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<sup>4</sup> [http://www.unep.org/pdf/unep\\_marine\\_litter-a\\_global\\_challenge.pdf](http://www.unep.org/pdf/unep_marine_litter-a_global_challenge.pdf)

Arctic Council Ministers adopted the [\*Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities \(Arctic RPA\)\*](#) in 1998 and updated it in 2009. The Arctic-RPA is a dynamic programme of action that uses a step-wise approach for its implementation and recognizes the continually evolving situation in the Arctic environment and the need for an integrated approach. It is the regional extension of the GPA, and as such provides a framework for addressing the main pollution source categories and respond to the global concerns. Marine Litter is one of eight contaminant categories of the GPA and the Arctic RPA.

### **Project Aims**

- ✓ To evaluate the scope of marine litter in the Arctic, and its effects on the marine environment;
- ✓ Enhance knowledge and awareness of marine litter in the Arctic;
- ✓ Enhance cooperation by the eight Arctic Council member governments to reduce negative impacts of marine litter to the Arctic marine environment; and
- ✓ Contribute to the prevention and/or reduction of marine litter pollution in the Arctic and its impact on marine organisms, habitats, public health and safety, and reduce the socioeconomic costs it causes.

### **Main Activities**

It is proposed that this project be developed in a stepwise approach to include the following two phases:

#### **Phase I (2017-2019): Scoping and Outreach Phase:**

- ✓ Conduct a desktop study on marine litter in the Arctic region with the aim to provide the current status on this issue.
- ✓ Develop communication products for outreach.
- ✓ Based on the outcome of the desktop study, explore the possibility of developing an outline for a framework of an Arctic regional action plan on marine litter.
- ✓ Explore collaboration with UNEP/GPA on marine litter such as possibly:
  - Joining the Global Partnership on Marine Litter <http://unep.org/gpa/gpml/>;
  - Nominating experts to the Advisory Group for the Assessment; and
  - Joining the Global Campaign on Marine Litter.

#### **Phase II (2019-2021): Implementation Phase**

The initiation of this phase is subject to outcomes of Phase I and agreement on the activities for inclusion in Phase II.

#### **Timeline and Major Milestones (Phase I):**

In this project has a scoping and outreach phase, project leads propose convening workshops (proposed September 2017 and June 2018).

#### **Phase I 2017-2019:**

- ✓ Develop a desktop study on the status of marine litter issues in the Arctic;

- ✓ Develop communication products; and
- ✓ Explore the need to develop a framework/outline for an Arctic regional action plan on marine litter, based on the desktop study.

**Main Tasks:**

- Feb – Sep 2017: Marine litter literature research -- compile existing and new reports of relevance (titles/references) and extract content in close collaboration with UNEP/GPA Global Partnership on Marine Litter
- September 2017: Presentation by project lead(s) and discussions/inputs at PAME II-2017
- September 2017: Arctic marine litter: Scoping workshop back-to-back with PAME II-2017 (TBC)
- Sep – Dec 2017: Prepare summary report from the scoping workshop capturing the key points raised  
Revise the draft desktop study on marine litter.
- February 2018: Presentation by co-leads and discussions/inputs at PAME I-2018
- March 2018: Presentation at the SAO meeting and guidance sought, as appropriate
- Mar-Jun 2018: Work on a revised version of the desktop study on marine litter and update/incorporate comments/inputs, as relevant.  
Prepare for an outreach workshop
- June 2018: Arctic marine litter: Outreach workshop
- Jun-Aug 2018: Continue work on the desktop study, and based on this work and guidance from previous workshops and consultations with Arctic Council members and others, explore whether a framework/outline for an Arctic regional action plan on marine litter is the most effective way to address the issue in the Arctic.
- September 2018: Presentation by co-leads and discussions/inputs at PAME II-2018 and guidance sought
- October 2018: Presentation at the SAO meeting and guidance sought, as appropriate
- Oct/Dec 2018: Revisions and consultations as appropriate and prepare a final draft of the desktop study on marine litter issues in the Arctic
- February 2019: PAME I-2019 meeting approval for submission of desktop study for review/approval by Senior Arctic Officials
- March 2019: Approval of desktop study by Senior Arctic Officials
- Mar/Apr 2019: Final layout and preparation of desktop study for Ministerial
- April 2019: Arctic Council Ministerial

### Overall Estimated Budget: Phase-I (2017-2019):

Consistent with the overall Arctic Council approach, the development of this project will be financed through voluntary contributions and in-kind support from member governments. The proposed stepwise approach, with PAME approval required for each phase, will facilitate financial planning and budgets. Financial contributions will be sought from other sources as well, such as the Nordic Council of Ministers.

Item	Budget (USD/in-kind)
Project management, coordination, consultation and outreach	50.000
External expert(s)	15.000
Scoping workshop	15.000
Consultation workshop	35.000
Editing, final layout and printing	10.000
<b>Estimated Total:</b>	<b>125.000</b>

### Project Team Structure/Lead Countries

- ✓ Leads: Iceland, Norway, Sweden, and AIA.
- ✓ Each Arctic Council member government and Permanent Participants' organization to appoint a project team member.
- ✓ Collaboration and assistance will be sought, as relevant, from e.g. UNEP/GPA, AMAP and other organizations (e.g. OSPAR), as appropriate.
- ✓ The PAME Secretariat will provide administrative and project assistance.
- ✓ Other Arctic Council working groups will be consulted accordingly.

## **Annex 1: Global Context: Background on UNEP-related Marine Litter Programs, and Other Initiatives**

### **GPA**

UNEP hosts the GPA, which serves as a global intergovernmental mechanism directly addressing the connectivity of marine pollution among terrestrial, freshwater, coastal and marine ecosystems. It aims to be a source of conceptual and practical guidance to be drawn upon by national and/or regional authorities for devising and implementing sustained action to prevent, reduce, control and/or eliminate marine degradation from land-based activities.

Under the GPA, the issue of land-based sources of marine litter has been highlighted as one of the nine source categories. Litter threatens marine life through entanglement, suffocation and ingestion, and is widely recognized to degrade visual amenities. Sources of litter include numerous human activities, including poorly managed or illegal waste dumps. According to the [United Nations Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection \(GESAMP\)](#), estimated 60 - 80% of the world's marine pollution comes from land-based sources and activities.

### **The Global Partnership on Marine Litter**

Marine litter has been an area of focus of for UNEP coordinated efforts through the [UNEP Global Initiative on Marine Litter](#), involving the [Regional Seas Conventions and Action Plans \(RSCAPs\)](#) and the GPA and more recently through the [Global Partnership on Marine Litter](#).

Following the recommendations contained in the Manila Declaration<sup>5</sup>, the Global Partnership on Marine Litter (GPML) was launched in June 2012 at Rio + 20 in Brazil. The GPML seeks to protect human health and the global environment by the reduction and management of marine litter as its main goal, through several specific objectives.

The GPML is a voluntary open-ended partnership for international agencies, Governments, businesses, academia, local authorities, nongovernmental organizations and individuals for coordination mechanism in which all partners agree to work together to further reduce and better manage marine litter.

Its current focal areas are:

- ✓ Goal A: Reduced levels and impacts of land-based litter and solid waste introduced into the aquatic environment;
- ✓ Goal B: Reduced levels and impact of sea-based sources of marine debris including solid waste, lost cargo, ALDFG, and abandoned vessels introduced into the aquatic environment;
- ✓ Goal C: Reduced levels and impacts of (accumulated) marine debris on shorelines, aquatic habitats, and biodiversity.

### **UNEA Resolution**

In June 2014, governments attending the first UN Environment Assembly noted with concern the impacts of plastics and microplastics on the marine environment, fisheries, tourism and development calling for strengthened action, in particular by addressing such materials at the source. A resolution was adopted calling for the strengthening of

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<sup>5</sup> <http://www.unep.org/gpa/documents/meetings/IGRIII/IGRIIIDraftManilaDeclaration.pdf>

information exchange mechanisms, requesting UNEP to present scientific assessments on microplastics for consideration by the next session of the Assembly.<sup>6</sup>

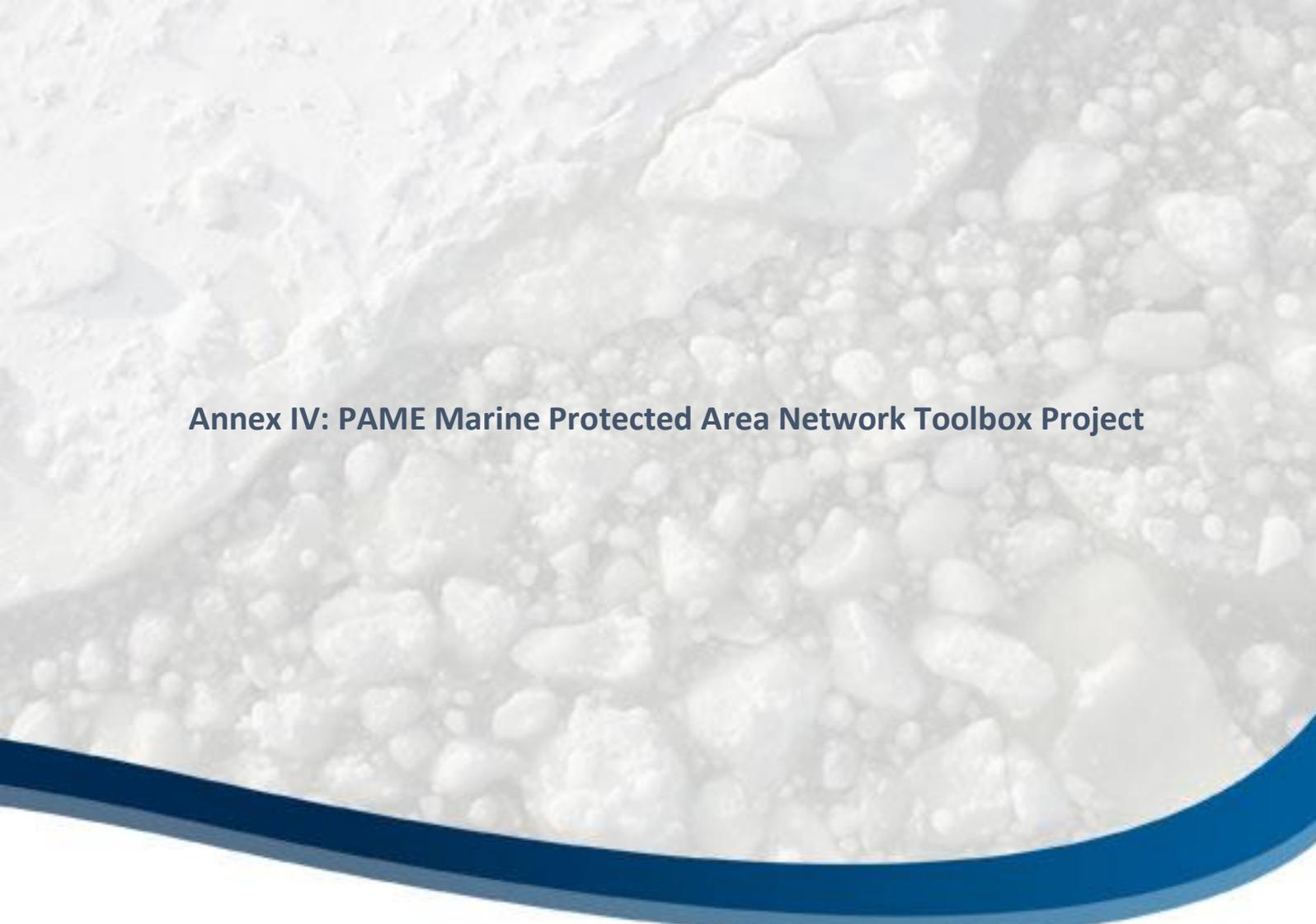
**In addition to UNEP Programs and Initiative, other existing MEAs and Initiatives relevant to Marine Litter exist, including:<sup>7</sup>**

- ✓ IMO- MARPOL 73/78 Annex V (garbage from ships)--London Convention and Protocol on Dumping;
- ✓ FAO Code of Conduct for Responsible Fisheries
- ✓ Basel Convention, CBD, CMS, IWC
- ✓ UNCLOS – ICP 17 – Marine debris plastics and microplastics
- ✓ G7 Action Plan on ML, OECD, EU, Ocean Conservancy, etc.

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<sup>6</sup> 'Global Partnership on Marine Litter' <<http://www.unep.org/gpa/gpml/issue.asp>>.

<sup>7</sup> UNEP, "Marine Plastic Litter and Microplastics" Presentation to PAME Working Group Meeting Portland, Maine, USA 20 September 2016' (2016).



**Annex IV: PAME Marine Protected Area Network Toolbox Project**

## Annex IV: PAME Marine Protected Area Network Toolbox Project

*Applying the toolbox of marine protected area (MPA) networks and other area-based conservation measures to support MPA network development and promote the resilience of Arctic marine ecosystems, their services, and cultural values to a changing environment.*

### Project objective

PAME's *Framework for a Pan-Arctic Network of Marine Protected Areas* document recognizes that individual Arctic countries pursue MPA development based on their own authorities and priorities, and that MPA networks can be comprised of both MPAs and "other area-based conservation measures" that contribute to network objectives. This project aims to build on previous PAME work by expanding and refining the MPA Toolbox, developed during the 2015-2017 work cycle, to support Arctic countries as they develop and manage their MPA networks.

The initial "Toolbox" identified and described different types of MPAs and "other area-based conservation measures" and how they can be used to address different types of pressures and threats to conserve categories of Arctic marine biodiversity. The project also developed an understanding of ecological connectivity for different Arctic marine taxa.

This project will build on this previous work by exploring how the measures identified in the toolbox can be applied in order to:

- 1) Address identified conservation needs in designing representative and ecologically-connected MPA networks and support pan-Arctic network coherence;
- 2) Effectively conserve different types of marine species, habitats, features, and ecosystems;
- 3) Enhance resilience of Arctic marine ecosystems and the social and economic benefits they provide in the face of changing conditions, such as ocean warming, ocean acidification, and loss of sea ice;
- 4) Address present and future specific threats;
- 5) Address conservation and management needs to enhance ecological connectivity; and
- 6) Contribute to an integrated ecosystem approach to management.

### Rationale

PAME's *Framework for a Pan-Arctic Network of Marine Protected Areas* sets out the vision for an "ecologically connected, representative and effectively-managed network of protected and specially managed areas". Further technical work and coordination at the pan-Arctic level is needed to advance this vision.

The 2017-2019 PAME work plan includes projects to enhance PAME's work on a pan-Arctic MPA network and contributes to some of the near-term actions listed in the *Framework*:

- #3: Describe how this Framework will be implemented, including options for ensuring meaningful, comprehensive and sustained stakeholder participation;

- # 4: Develop a consistent approach for achieving MPA network design;
- # 6: Identify types of important marine areas for protection at the pan-Arctic scale based on common criteria, goals, or objectives developed by the MPA-EG, as well as identify areas/species in need of joint conservation measures;
- # 7: Identify practical measures to address change in the Arctic through adaptive management of MPA networks, including developing options for management measures designed to address changing conditions; and
- # 9: Identify the range of benefits that MPAs and MPA networks have for sustaining livelihoods and ecosystem services to Arctic indigenous peoples and other local residents, especially in light of supporting social- ecological resilience and the capacity to adapt to rapid Arctic change.

As outlined in the Framework, the implementation of a pan-Arctic MPA network should proceed as part of an ecosystem approach to management and aim “to achieve the long-term conservation of nature with associated ecosystem services and cultural values”. To address these issues, Arctic states will need to consider, among other things:

- How can MPA networks help enhance resilience of coastal and ocean ecosystems as they face a changing climate?
- What considerations related to a changing environment need to be integrated into MPA network design and implementation?
- How can Arctic MPA managers benefit from each other’s experiences?
- How can traditional and local knowledge and use advance the development and effectiveness of a pan-Arctic MPA network?
- How do we, together, best communicate our main messages to other experts, the public, and decision makers, that are interested in Arctic marine conservation

The project will seek to answer these questions by conducting workshops and associated desk-studies that will build on previous work of the MPA Expert Group. This information will be integrated into the Arctic MPA Toolbox, a practical, hands-on resource for MPA programs and partners in advancing the design and implementation of MPA networks.

## **Project Components and Products**

### Expert Workshops

Building on the first two MPA network workshops in September 2016 and February 2017, the PAME MPA-EG plans to hold two workshops during the 2017-2019 work cycle to dedicate space for interactions and discussions among technical and country experts (e.g. researchers, government scientists, MPA managers, traditional and local knowledge-holders, etc.), Permanent Participants, and others. Finland and Sweden will organize the third workshop, while Canada may be in a position to organize the fourth.

- a. The 3<sup>rd</sup> workshop, 21-22 September 2017 in Helsinki, organised by Finland and Sweden, will address how MPA networks can enhance the resilience of Arctic ecosystems to a changing environment.

- b. Pending available funding, the 4<sup>th</sup> workshop would be held in 2018 and convene MPA managers, Indigenous peoples, community representatives, and other MPA partners to share experiences in planning and developing Arctic MPA networks, including the contribution that protected areas and other measures may make to sustainable livelihoods and communities.

### Final reports

Reports from all workshops will contribute to enhancing and refining the “2017 Toolbox Report”, summarising known approaches and suggesting next steps for incorporating traditional and local knowledge, scientific information on connectivity, and lessons learned from participant experiences using MPAs and other area-based measures into the design and implementation of a pan-Arctic MPA network to build resilience to a changing environment.

The 3<sup>rd</sup> workshop seeks to identify available science, new research, and questions concerning the role of MPAs and MPA networks in addressing the potential effects of a changing environment, including the effects of ocean acidification, and other stressors in the Arctic. The workshop may discuss e.g. the current knowledge and possible methods to increase the region’s resilience to a changing environment. The 4<sup>th</sup> workshop seeks to share observations and lessons from participants on e.g. challenges and opportunities in implementing MPA networks; opportunities for collaboration at the local, subregional, and pan-Arctic scale to support resilient marine ecosystems and communities; and ways in which Arctic Council Working Groups and initiatives can further support these efforts.

## Milestones

Milestone	Description	Completion by
Report from 3 <sup>rd</sup> workshop	The workshop report may include e.g. a brief summary of discussion, recommendations, an overview of concepts for enhancing and refining the Toolbox.	February 2018
Report from 4 <sup>th</sup> Workshop	The workshop report may include e.g. a brief summary of discussion, recommendations, an overview of concepts for enhancing and refining the Toolbox.	December 2018
Updated Toolbox	The Expert Group will expand and refine the 2017 Toolbox based on discussions at the two workshops and other relevant work in the field.	February 2019
Information Dissemination	Circulation of workshop reports and updated Toolbox.	March 2018 (1 <sup>st</sup> report), January 2019 (2 <sup>nd</sup> report), May 2019 (updated Toolbox)

## Lead Countries

Canada, Finland, Sweden, and USA

## Partners

### Arctic Council Working Groups and Initiatives

CAFF and other Working Groups will serve as partners in carrying out this project, building upon important products and processes, such as the Arctic Biodiversity Assessment, the Arctic Ocean Acidification report, the Circumpolar Biodiversity Monitoring Programme, the Arctic Migratory Bird Initiative, etc.

### Observers and External Partners

The Circumpolar Conservation Union and WWF will provide experts with experience in MPA network design to contribute to workshop planning, execution, and report writing. Additional observers (e.g. IUCN) and external experts (e.g. OSPAR, academics) with experience in MPA network design and understanding of area based conservation measures could be invited to contribute to the project, as appropriate. Contributions on ecosystem-based management are essential and could be facilitated by PAME's Ecosystem Approach Expert Group.



**Annex V: Meaningful Engagement of Indigenous Peoples and  
Communities in Marine Activities (MEMA) Project Work Plan – PART II**

## **Annex V: Meaningful Engagement of Indigenous Peoples and Communities in Marine Activities (MEMA) Project Work Plan – PART II**

**Project Co-leads:** USA, Canada, AIA, ICC, Saami Council.

Significant work has been completed on the MEMA project to date. A database has been compiled with hundreds of documents pertaining to engagement of Indigenous peoples and communities and is currently being updated. An preliminary analysis has been conducted on these documents to ascertain the current practices and guidance for engagement. A narrative summary of the obligations for engagement and common practices has been written. And two workshops have been held in support of the project (in Anchorage in October 2015; and in Maine in September 2016 with a workshop report).

**Part II (2017-2019):** The Project Team is proposing to extend the project into 2017-2019 timeframe to complete the following work:

- 1) Collect further input from Indigenous people and organizations – particularly from Scandinavian and Russian Arctic;
- 2) Host coordinated outreach with indigenous peoples to capture additional recommendations / protocols, including from oral tradition;
- 3) Incorporate additional documents from countries / sectors;
- 4) Expand the analysis to include the additional information; and
- 5) Prepare the Part II report.

**Part II Project Plan:** Specific tasks will include:

- 1) Collect further input from Indigenous people and organizations – particularly from Scandinavian and Russian Arctic:
  - a. identify possible sources of information / new contacts
- 2) Host coordinated outreach with indigenous peoples to capture additional recommendations / protocols:
  - a. identify possible opportunities (including to co-locate with other gatherings) for focused Permanent Participant-led sessions to acquire additional information including from oral tradition
- 3) Incorporate additional documents from countries / sectors:
  - a. identify and follow-up on new country sources / additional sector materials
  - b. add additional information into database
- 4) Expand the analysis to include the additional information:
  - a. identify analyst
  - b. conduct reanalysis / or extend the analysis
- 5) Prepare the Part II project report:
  - a. Identify an Editor
  - b. prepare the project Report using contributions from various authors

- 6) Outreach and Education
  - a. Town meeting/Listening Sessions
  - b. Radio/TV
  - c. Films
  - d. Webinars
  - e. Directed Interviews
- 7) Identify possible Partners / Seek funding:
  - a. SDWG (SECEG) for possible follow-up Actions
  - b. Funding sources:
    - i. Nordic Council of Ministers
    - ii. National Science Foundation
    - iii. others??

**Timeline:**

TIMING	TASK / ACTIVITY
<b><u>2017</u></b>	
January – February	Provide Update to PAME meeting / and get WG support for Part II Project Work Plan
February 10	Finalize MEMA Part I report to SAOs / Ministers
May 11	Part I Report to Ministerial
April – July	Identify possible sources of information / new contacts from Scandinavian and Russian Arctic & collect information
April – September <i>These dates from here through 2018 are tentative and contingent on funding.</i>	Permanent Participant-led outreach sessions
September	Analysis
September – November	Drafting / Editing of full MEMA Report
December	Review by MEMA Project Team
<b><u>2018</u></b>	
January – February	Distribute to PAME Members for national review and comment
February	PAME 2018-I meeting – for discussion
March	Final Revisions & Editing
September	Present to PAME 2018-II meeting – for approval



# PAME

Protection of the Arctic Marine Environment

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