



Arctic Environment Ministers Meeting 11-12 October 2018

Guidance from the Finnish Chairmanship:

The environmental focus areas of the Finnish Chairmanship program are: 1) biodiversity conservation, 2) pollution prevention, and 3) climate change.

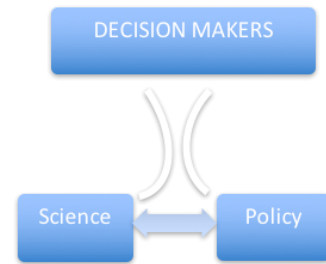
- Please select 1-3 of these focus areas that are of greatest relevance for your Working Group/Expert Group.
- The input should begin with a summary of the main messages you would like to convey (3-5 lines).
- Within the selected focus area(s), please identify the main environmental challenges and issues that require common solutions in the Arctic.
- Pay special attention to the Sustainable Development Goals (17) and Targets (169) when preparing your inputs. Please note the cross-sectoral character of the SDG Goals and Targets, as there might be relevant targets under several SDGs. You will find the SDG Targets via this link:
<https://sustainabledevelopment.un.org/content/documents/11803Official-List-of-Proposed-SDG-Indicators.pdf>
- We encourage you to cooperate and coordinate your inputs with other Arctic Council Working Groups and Expert Group when relevant.
- The inputs should not be longer than 1-2 pages/theme.
- Please add a separate introduction of your Working Group and its main activities (max. 1 page).

Deadline: by the end of February 2018.

PAME contribution (draft)

Background

[PAME](#) serves as the ocean policy working group of the Arctic Council and focuses on policy-related initiatives for the conservation and sustainable use of the Arctic marine environment (Annex I: PAMEs mandate). PAME bases its work on the scientific findings and recommendations from a range of sources, both produced within and outside of the AC. Products often include best practices, guidelines and strategic plans.



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 the Arctic Council [Arctic Marine Strategic Plan](#) (AMSP 2015-2025) was developed by PAME in cooperation with the Arctic Council members, its subsidiary bodies and observers. The AMSP provides a framework to guide its actions to protect Arctic marine and coastal ecosystems and to promote sustainable development. It is inclusive of all marine activities addressing both short-term and long-term challenges and opportunities.

This Strategic Plan is based on widely recognized principles and approaches such as sustainable development, the precautionary approach, the polluter pays principle and ecosystem-based management. Its vision is: ***Healthy, productive, and resilient Arctic marine ecosystems that support human well-being and sustainable development for current and future generations.***

The AMSP addresses both short-term and long-term challenges and opportunities, through its forty Strategic Actions comprised under the following four Strategic Goals:

- 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 safe and sustainable use of the marine environment, taking into account cumulative environmental impacts.
- 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.

PAMEs work related to marine activities on sustainable marine use (shipping and resource exploration and development), conservation measures and pollution stressors is guided by AMSP which is advanced in a systematic manner through a 10-year [AMSP Implementation Plan](#). Challenges and progress is evaluated every two years through a reporting mechanisms in collaboration with other Arctic Council working groups working on marine-related issues.

In addition to aligning with the strategic goals of the Council in the AMSP, PAME's work also aligns with the UN Sustainable Development Goals (UN SDG). SDG 14 in particular is about the conservation and sustainable use and development of oceans and its resources. PAME projects on issues such as marine litter, heavy fuel oil, invasive species and marine protected area networks, for example, support national implementation of SDG 14.1, 14.2, and 14.5 respectively. (See Annex II for the list of marine-related SDG.)

PAME Focus Areas

In the context marine policy related to Arctic marine pressures and challenges that require common solutions in the Arctic, PAME considers a range of marine issues, and promotes the knowledge, policies and approaches needed to:

- 1) Increase Marine Biodiversity Conservation: Advance the application of the ecosystem-based approach to management and MPA networks
- 2) Increase Sustainable Maritime Activities: Help define and promote low-impact operations, including by reducing risk of pollution
- 3) Tackle Stressors on the Arctic Marine Environment: Reduce and prevent marine pollution, and identify and address emerging risks, including those linked to climate change

Marine Biodiversity Conservation

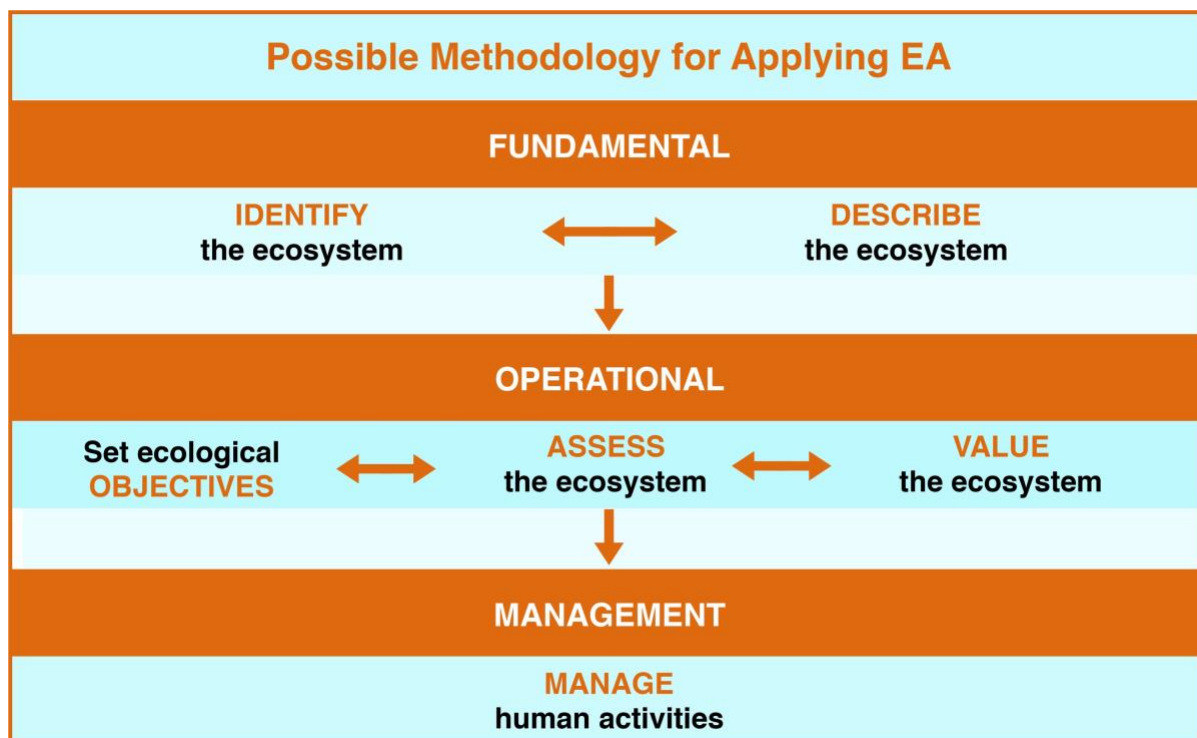
Ecosystem Approach to Management (EA)

The Ecosystem Approach to Management was adopted as an overarching principle and approach by Arctic Council Ministers in 2004 as part of the Arctic Marine Strategic Plan (AMSP 2004). PAME established an Ecosystem Approach Expert Group in 2007 that was broadened as a Joint PAME/AMAP/CAFF/SDWG Ecosystem Approach Expert Group (EA-EG) in 2011.

PAME continues to follow national and international developments regarding EA and to integrate the principles of EA into assessments and management recommendations. Through this, PAME contributes to the follow-ups to the 2013 Kiruna recommendations, building on previous work on Large Marine Ecosystems. Work on EA activities is done by the joint EA EG with participation from other Arctic Council WGs working on marine-related issues and, consider the full array of interactions within an ecosystem, including human generated pollution.

PAME convened jointly with AMAP and CAFF an international conference in 2016 on the “Status of implementation of the ecosystem approach to management in the Arctic” and produced a report on the conference. PAME is collaborating with the International Council for the Exploration of the Sea (ICES)/PAME working group on Integrated Ecosystem Assessment for the Central Arctic Ocean (WGICA).

The EA-EG has developed a framework for implementation of the EA (or EBM) to management of Arctic marine and coastal environments which consists of the following six related elements as depicted below:



Marine Protected Areas Network (MPAs)

The Framework for a Pan-Arctic Network of Marine Protected Areas was approved by Arctic Council Ministers in 2015. This Framework identifies both short and long-term actions.

Marine Protected Areas provides the necessary knowledge in the face of change e.g. what ecosystems are most resilient, most vulnerable, and most unique that we should consider protecting to avoid damage from pollution.

PAME and CAFF developed the 2017 Arctic Protected Areas - Indicator report. It provides an overview of the status and trends of protected areas in the Arctic. Currently, in 2016, 20.2% of the Arctic's terrestrial area and 4.7% of the Arctic's marine areas are protected. Protected area coverage of the Arctic's terrestrial ecosystems exceeds Aichi Biodiversity Target 11 which aims for at least 17% of terrestrial and inland water to be protected by 2020. The protected area coverage of marine areas currently falls short of the Aichi Target goal for 10% of coastal and marine areas to be protected by 2020.

MPA Network Toolbox Report 2017-2019: aims to develop guidance to assist Arctic states in advancing their MPA networks by providing theory and tools that can be used to assess and protect the diversity of genes, species, populations, habitats, features, and ecosystems; their interactions and processes; and the ability to adapt to change. This guidance is intended to inform decision-makers, practitioners, Indigenous peoples, and stakeholders involved in developing MPA networks and ecosystem-based management in the marine Arctic. The main focus is on “other measures” as additional tools for designing Arctic MPA networks and summarizes key findings and next steps, as well as case studies.

This project builds 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.

Sustainable Maritime Activities

Shipping

Natural resource development, governance challenges, climate change and marine infrastructure issues are influencing current and future marine uses of the Arctic.

Arctic shipping is the focus of many pollution projects within PAME which are rooted in the [Arctic Marine Shipping Assessment Report \(AMSA 2009\)](#). The context of these projects is circumpolar with the aim to help the Arctic Council member states working together to advance the state of knowledge and implementation on issues stemming from the AMSA Report and other international organizations such as the International Maritime Organization.

Heavy Fuel Oil Project Phases I-IV (2010-2017)

Heavy fuel oil continues to be one of the most productive area of PAMEs work within the context of shipping and has produced the following five reports during the period 2010-2016:

[Phase I, Phase II, and Phase II\(b\) reports collectively](#) described a full year of maritime traffic (2012) in the Arctic based on satellite data, projected future traffic, identified vessels operating on HFO or

transporting HFO by vessel type, modelled fuel consumption and resulting air emissions, set forth a hazard identification and high-level risk analysis of probability of an incident leading to an oil spill, and assessed various risk control options.

[Phase III\(a\) Report](#): Released in 2016, identified and summarized spills and releases of HFO and other fuel by ships in the Arctic and near-Arctic over the last 35 years.

[Phase III\(b\) Report](#): Also released in 2016, looked at Possible Hazards for Engines and Fuel Systems Using HFO in Cold Climates. It assessed whether ships that use HFO as fuel in the Arctic are overrepresented with respect to engine or fuel system failure relative to ships that burn other fuels.

PAME Continues to advance its work on mitigating risks associated with the use and carriage of Heavy Fuel Oil (HFO) by vessels in the Arctic with four ongoing projects during the period 2017-2019:

- ✓ [HFO Phase IV \(a\) project](#): Uses the Arctic Shipping Traffic Database to collect and report information on use of Heavy Fuel Oil (HFO) in the Arctic. -- *what is the actual number of ships and volume of HFO being used?*
- ✓ [HFO Phase IV\(b\) project](#): Collects, reports and reviews information about on-shore use by indigenous peoples and local communities of HFO. *We are teaming up with SDWG and some of the permanent participants to better understand if and how HFO is being used on land and thus necessitating carriage by ships.*
- ✓ [HFO Phase IV\(c\) project](#): Seeks to summarize PAME's robust suite of work on HFO so we can inform the public, IMO, and others about our work and findings.
- ✓ [HFO Phase IV\(d\) project](#): Exploring the environmental, economic, technical and practical aspects of the use of alternative fuels (so non-HFO fuels) by ships in the Arctic

The Arctic Shipping Best Practices Information Forum (Shipping Forum)

The International Maritime Organization recently adopted International Code for Ships Operating in Polar Waters (Polar Code). The Polar Code was developed to supplement existing IMO instruments in order to increase the safety of ships' operation in the harsh environment of the waters surrounding the two poles, consequently reduce the probability of accidents and impacts on the marine environment.

PAME's *Arctic Shipping Best Practices Information Forum* is in response to the Polar Code, aiming to raise awareness of its provisions amongst all those involved in or potentially affected by Arctic marine operations and to facilitate the exchange of information and best practices between the Forum participants on specific shipping topics. PAME has established a publicly accessible web portal that will link to and make information available in one place to facilitate the compilation, exchange and public sharing of information critical to the compliance and implementation of the Polar Code.

The Arctic Shipping Traffic Database (ASTD)

The ASTD will collect detailed shipping data from the Arctic. This database will allow the Arctic Council to be at the forefront of monitoring trends and assessing any changes related to Arctic shipping, for use in assessments, trend analyses, and the development of recommendations that enhance Arctic marine safety and support protection of Arctic people and the environment. The data will feed into many projects, not only shipping projects but for example work on the Large Marine Ecosystems, Marine Protected Areas, Invasive species and others.

Resource Exploration and Development

Within Resource Exploration and Development, PAME previously developed the [Arctic Offshore Oil and Gas Guidelines](#) which define a set of recommended practices for consideration by those responsible for regulation of offshore oil and gas activities to encourage high standards and hopefully prevent oil from entering the marine environment during exploitation.

In 2017, PAME broadened its focus to the following topics: Offshore Renewable Energy, Noise in the Marine Environment, Offshore and Coastal Mining and Offshore Oil and Gas.

Arctic Offshore Resource Exploration and Development (REDEG) Projects in the PAME 2017-2019 Work Plan:

- Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities project (MEMA) Part II Report
- Resource Exploration and Development Expert Group (REDEG) Information gathering
- Follow-up on the Framework Plan on Oil Pollution Prevention (FP-OPP) (Joint project with EPPR)
- Good Practice Recommendations for Environmental Impact Assessment, EIA, and Public Participation in EIA in the Arctic (Arctic-EIA) (Joint project with SDWG)

The MEMA Project (relates to AMSP and sustainable use)

Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities (MEMA) is a cross-cutting oil & gas and shipping project which will compile and analyze existing documents and summarize their main aspects, principles, and processes for engagement of indigenous peoples and local communities.

The project will cover all Arctic marine and coastal activities, including shipping, offshore oil and gas activities, coastal infrastructure development, and research and management activities. The information to be compiled will come from Arctic Council documents and reports, national legal regimes and guidance of Arctic states, guidelines and declarations from communities and indigenous organizations, international instruments, and guidance from industry, NGO's and other stakeholders.

Stressors on the Arctic Marine Environment

Marine litter/plastics

Marine litter is one of the most pervasive pollution problems affecting the marine environment globally. The United Nations Environment Programme (UNEP) defines marine litter 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. The universal challenge of addressing and managing marine litter is a useful illustration of the global and transboundary nature of many marine environmental problems.

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 Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA), and as such provides a framework for addressing the main pollution source categories and responding to the global concerns. Marine litter is one of eight contaminants sources of concern in the Arctic-RPA and land-based sources are estimated to be responsible for approximately 80 percent of marine litter, though there are regional fluctuations.

PAME has developed a project plan, which is included in the PAME 2017-2019 Work Plan for the project; *Desktop Study on Marine Litter including Microplastics in the Arctic*. Based on its outcomes, PAME will explore the possibility of developing an outline for a framework on an Arctic regional action plan on marine litter.

Arctic Invasive Species

Globally, invasive non-native species are considered the second most important threat to biodiversity after habitat loss. These are species introduced by human activity that flourish and spread in their new environment and threaten native species and ecosystem functions.

In 2010 almost all of the world's governments adopted the Convention on Biological Diversity Strategic Plan for Biodiversity, which included 20 headline 'targets' referred to as the *Aichi Targets*. One of these targets (#9) is specifically related to Invasive Species: "*Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated and measures are in place to manage pathways to prevent their introduction and establishment*" Convention on Biological Diversity."

The Arctic Invasive Alien Species (ARIAS) Strategy and Action Plan, produced by CAFF and PAME was delivered to the May 2017 Arctic Council Ministerial. It sets forth the priority actions that the Arctic Council and its partners are encouraged to take to protect the Arctic region from a significant threat: the adverse impacts of invasive alien species. These priority actions span terrestrial, aquatic, and marine ecosystems. The actions take environmental, cultural, and economic perspectives into consideration, including drivers, impacts, and response measures. The priority actions are divided into three categories:

- ✓ Inspire urgent and effective action in order to: raise awareness of the unique opportunity that the Arctic Council and its partners have to inspire the urgent and effective action necessary to protect the Arctic from invasive alien species.
- ✓ Improve the knowledge base for well-informed decision making in order to: improve the capacity of the Arctic Council and its partners to make well-informed decisions on the needs, priorities, and options for preventing, eradicating, and controlling invasive alien species in the Arctic by improving the knowledge base.
- ✓ Undertake prevention and early detection/rapid response initiatives in order to: protect Arctic ecosystems and human well-being by instituting prevention and early detection/rapid response programs for invasive alien species as a matter of priority.

The ARIAS Strategy and Action Plan addresses both short-term and long-term challenges and opportunities. Achieving its goals is dependent upon cooperation. The Arctic Council working groups will coordinate and cooperate closely, and the Arctic Council will need to look to government agencies and industries for support and participation. Its implementation may also necessitate that the Arctic States cooperate to promote the goals in relevant international and regional fora.

Recognizing the importance of the Arctic Council on cooperation and integration of activities between working groups, CAFF and PAME are work together to ensure effective use of resources and avoid duplication of efforts through the development of ARIAS Implementation.

Further information can be found in the dedicated CAFF [ARIAS website](#) and dedicated PAME [ARIAS website](#).

Annex I: PAME and its main activities

(max. 1 page).

PAME's 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 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 bases its work on the scientific findings and recommendations from a range of sources, both produced within and outside of the AC. Products often include best practices, guidelines and strategic plans.

PAME cooperates actively with the other Arctic Council WGs in an effort to contribute to improved efficiency and effectiveness of the Arctic Council. Further, PAME works substantively with Arctic inhabitants, including indigenous peoples, to provide a unique forum for collaboration on a wide range of activities directed towards protection of the Arctic marine environment.

PAME has developed a number of strategic documents to coordinate Arctic Council marine-related efforts, helping to set priorities, i.e.:

- ✓ [Arctic Ocean Review \(AOR 2013\)](#): which is an extensive review of the environmental, economic and social changes that resulted in 24 recommendations.
- ✓ [The Arctic Marine Strategic Plan \(AMSP 2015-2025\)](#): resulted in 40 strategic actions to help guide the Arctic Council effort on the marine agenda including improved knowledge, conserving ecosystems, promoting environmental protection and sustainable use, and addressing the well-being of Arctic inhabitants.

More specific guidance documents, often focused on particular activities/sector i.e.:

- ✓ [Arctic Offshore Oil and Gas Guidelines \(2009\)](#)
- ✓ [Arctic Marine Shipping Assessment \(2009\)](#)
- ✓ [Heavy Fuel Use in the Arctic – Phase I report](#)
- ✓ [Large Marine Ecosystem - Revision of the Arctic map](#)
- ✓ [The Arctic Marine Tourism Project \(AMTP\) Best Practice Guidelines](#)
- ✓ [The Framework for a Pan-Arctic Network of Marine Protected Areas \(MPAs\).](#)
- ✓ [Meaningful Engagement of Indigenous Peoples and Communities in Marine Activities \(MEMA\) Part I Report.](#)
- ✓ [Status of Implementation of the Ecosystem Approach to Management in the Arctic](#)
- ✓ [PAME MPA-network toolbox: Area-based conservation measures and ecological connectivity](#)
- ✓ [Indicator Report on Arctic Protected Areas \(CAFF/PAME\)](#)
- ✓ [Arctic Invasive Alien Species Strategy and Action Plan \(ARIAS\) \(CAFF/PAME\)](#)
- ✓ [Final report on the Regional Reception Facilities plan and draft submission for IMO](#)
- ✓ [Cooperative Agreement among the Arctic States Regarding Arctic Ship Traffic Data Sharing](#)

Annex II: United Nations Sustainable Development Goals, relevant Targets, and PAME's support of national implementation

Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate change and its impacts
- 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development**
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

Targets under Goal 14 (Life Below Water)

- 14.1. By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
 - ✓ Refer to PAME's [Desktop Study on Marine Litter including Microplastics](#) in the Arctic and the [Arctic-RPA 2009](#)
- 14.2. By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
 - ✓ Refer to PAME's work on [MPA](#), [HFO](#), [Arctic invasive species](#) and [Arctic pollution](#).
- 14.3. Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
- 14.4. By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to

levels that can produce maximum sustainable yield as determined by their biological characteristics

- 14.5. By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information
 - ✓ Refer to PAME's work on [MPA](#) networks.
- 14.6. By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation
- 14.7. By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
- 14.a. Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries
- 14.b. Provide access for small-scale artisanal fishers to marine resources and markets
- 14.c. Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want
 - ✓ Refer to the Framework documents that guide PAMEs work: Arctic Ocean Review ([AOR 2013](#)), the Arctic Marine Strategic Plan ([AMSP 2015-2025](#)) and the [Arctic Marine Shipping Assessment Report \(AMSA 2009\)](#).

Additional oceans-related SDG targets

15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species

- ✓ Refer to the joint PAMEs and CAFFs work in implementing the Arctic Invasive Alien Species Strategy and Action Plan ([ARIAS 2017](#))