Policy recommendations for improved EU and US cooperation in maritime governance

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About CALAMAR

The Cooperation Across the Atlantic for Marine Governance Integration (CALAMAR) project aimed to strengthen networks among key maritime stakeholders in the EU and US, and contribute policy recommendations to improve integration of maritime policies and promote transatlantic cooperation. The project convened a dialogue including more than 40 experts from both sides of the Atlantic. The CALAMAR project began in January 2010 and culminated in a final conference in Lisbon, Portugal on April 11-12, 2011 where the Working Groups' conclusions were presented. Two reports were developed to complement the dialogue by providing background information and assessments that: 1) compare EU and US maritime policy, and 2) identify opportunities and challenges for integrated maritime governance. A third report lays out policy recommendations for improved transatlantic cooperation in maritime governance based on the recommendations selected by the working groups throughout their discussions over the course of the CALAMAR project. All project reports are available on the project website at the following link: http://www.calamar-dialogue.org/.

The following report is the third report, which lays out policy recommendations for improved transatlantic cooperation in maritime governance, and was produced with the assistance of the European Union within the framework of the Pilot Project on Transatlantic Methods for Handling Global Challenges. The contents of this report are the sole responsibility of Ecologic Institute (Germany) and its partners, Meridian Institute (US), Duke University (US), Institute for Sustainable Development and International Relations - IDDRI (France) and University of Delaware (US) and do not necessarily reflect the views of the European Union.

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About Ecologic Institute

The Ecologic Institute is a private not-for-profit think tank for applied environmental research, policy analysis and consultancy with offices in Berlin, Brussels, and Washington DC. An independent, non-partisan body, the Ecologic Institute is dedicated to bringing fresh ideas to environmental policies and sustainable development. The Ecologic Institute's work programme focuses on obtaining practical results. It covers the entire spectrum of environmental issues, including the integration of environmental concerns into other policy fields. Founded in 1995, the Ecologic Institute is a partner in the network of Institutes for European Environmental Policy. The Ecologic Institute acts in the public interest; donations are tax-deductible.

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1 Introduction

The marine environment is of critical importance to both the European Union (EU) and the United States (US). It encompasses an array of sectors vital to economic development and is deeply woven into the identity and history of both regions. At the same time, the world's oceans are currently being impacted by exacerbated climate change and an ever increasing demand for marine resources, a reality that has laid bare the inadequacy of existing systems of maritime governance.[1]

In the face of these mounting pressures, there is a clear need for the EU and US to implement and enhance integrated ocean and coastal management systems. Substantial obstacles exist, yet despite these challenges, recent ocean policy initiatives on both sides of the Atlantic have bolstered the prospects for implementation of more effective and sustainable maritime governance in the EU and US. Given the scope and difficulty of this task, and the strong political will required, both governments stand to gain from a strengthened partnership. In particular, this partnership should focus on: developing joint approaches; exchanging data and best practices; strengthening the link between science and policy; and identifying opportunities for collaboration.

To this end, the EU funded Cooperation Across the Atlantic for Marine Governance Integration (CALAMAR), an 18 month dialogue bringing together experts from the EU and US to strengthen networks among key maritime stakeholders while identifying and developing policy recommendations. This third and final report of the CALAMAR dialogue outlines a range of policy recommendations for strengthening and improving transatlantic[2] cooperation on maritime governance between the EU and US. Given the complexity, scope, and importance of the issues they address, these policy recommendations intend to not only provide insight into potential policy options, but also to serve as a launching point for a sustained transatlantic dialogue.

This report is organized as follows: Chapter 2 provides an overview of the relevant policy frameworks for maritime governance, starting with the respective frameworks in place in both the EU and US, before examining the international level. Shortcomings are examined at all levels. Chapters 3 through 6 outline policy recommendations on the following issue areas: oceans and climate change; the high seas; integrated marine policies and tools; and EU/US transatlantic cooperation. The final chapter provides a conclusion highlighting opportunities to develop an integrated maritime governance framework.

[1] Use of the term *maritime* as applied by the EU, e.g., in the Integrated Maritime Policy, carries a different meaning than in US policy documents. In the US, the term maritime is usually reserved for economic activities like shipping, navigation, or the use of marine resources. In the European Integrated Maritime Policy the term *maritime* refers to a holistic ocean management policy that takes into account all human activities as well as the status of the marine environment. The term *marine,* therefore, only refers to the natural marine environment, as well as the coastal zone that interfaces with the marine environment. In this report, the terms *maritime* and *marine* are used interchangeably, both referrring to the holistic approach.

[2] The term "transatlantic" is used in this report to mean interactions between the EU and US.

2 Current policy framework

In general, the governance and legal frameworks in place internationally in the EU and in the US are markedly different.[3] However, one clear similarity between the two is that the relevant frameworks for the management of ocean related issues have historically been sectoral in nature. This has resulted in fragmented policy characterized by gaps, redundancies, inefficiencies, coordination issues, negative externalities, and failures of prioritization.[4]

The following chapter provides an overview of the key elements of the domestic and international maritime policy frameworks, so as to provide context for the policy recommendations that constitute the rest of this report.

2.1 EU/US domestic policy frameworks

In recent years, the EU and US have both attempted to address the issues caused by a sectoral approach to maritime governance by beginning to implement holistic, integrated and science-based maritime policies. The next two sections highlight key aspects of the policy frameworks being implemented in both regions, as well as some of the potential challenges they will need to overcome during their implementation in order to be effective. Such an examination reveals many commonalities that may prove to be beneficial sites for transatlantic cooperation.

2.1.1 EU policy framework

In the EU, implementation of a more holistic policy is occurring through the Integrated Maritime Policy (IMP) and its related Marine Strategy Framework Directive (MSFD).

The IMP[5] is a broad package of initiatives that encapsulates the EU's vision for its future maritime policy. It aims to achieve a more integrated and holistic approach to governing EU marine waters than currently exists, so as to "enhance Europe's capacity to face the challenges of globalization and competitiveness, climate change, degradation of the marine environment, maritime safety and security, and energy security and sustainability".[6] The IMP has a dual focus on economic development and environmental sustainability, and aims to contribute to the targets set out in the 2010 EU economic

IMP Programme of Work

The 2007 IMP Blue Book highlighted the following potential programme of work:

- A European Maritime Transport Space without barriers
- An EU Marine Research Strategy
- The development of national IMP policies
- An EU maritime surveillance network
- A Roadmap towards maritime spatial planning by Member States
- A Strategy to mitigate the effects of Climate Change on coastal regions
- Reduction of CO2 emissions and pollution by shipping
- Elimination of pirate fishing and destructive high seas bottom trawling
- An EU network of maritime clusters
- A review of EU labour law exemptions for the shipping and fishing sectors

[3] For a more detailed description of the relevant policy frameworks at place in both the EU and US, please see the first CALAMAR report: Cavalieri et al, 2011.

[4] For a general overview of problems stemming from sectoral oriented policy, see: Underdal, 1980, pp. 163-166, UNGA, 2006. For overviews specific to the EU, see: Markus et al, 2011, pp. 61-62; Juda, 2007, p. 261; Douvere, 2008. For overviews specific to the US see: Cicin-Sain & Knecht, 2000; Pew Ocean Commission, 2003.

[5] European Commission. 2007. 575 final. For an up to date description of the IMP, please see the first CALAMAR report: Cavalieri et al, 2011.

[6] European Commission, 2007. 575 final.

reform package, “Europe 2020”.[7]

The scope of the IMP is not exclusively domestic. In October 2009 the Commission adopted its Communication “Developing the international dimension of the Integrated Maritime Policy of the European Union” that defines objectives and means for cooperation in multilateral fora, strengthening its role in regional sea-basin management (e.g., Atlantic, Arctic, Baltic and Mediterranean) as well as through bilateral cooperation with key partners such as Canada, Norway, Japan, the US, Russia, Australia, and New-Zealand.

The MSFD[8] stands as the most substantially developed initiative of the IMP. It was adopted in 2008 and requires Member States to develop and implement strategies to achieve good environmental status in their marine waters by 2020. As the MSFD is a directive, not a regulation, the ultimate target is binding, but the method of achieving this goal is left to the devices of Member States. This process is supported by the European Commission, which facilitates and monitors progress.

As recent and ambitious initiatives, the IMP and MSFD are still in the early stages of implementation, with progress likely to be slow and gradual. An examination of the European Commission’s 2009 Progress Report on the IMP reveals that while significant progress at both the supranational and national level has occurred, many fundamental elements of the IMP require further clarification and strengthening in order to facilitate implementation.[9]

The nascent status of the IMP and MSFD makes a critical assessment premature. However, it is possible to identify some of the challenges in the short term that will need to be overcome for implementation to be successful:

- **Developing and strengthening the array of platforms and tools necessary for coordination among actors at all levels.** For example, the initial assessments required of Member States under the MSFD will necessitate the emergence of a common “epistemic frame”, wherein each Member State uses common and coherent scientific factors to describe the marine environment. It will also be necessary to **develop a common understanding of legal terminology** to ensure consistent interpretation of the legal requirements of the IMP and MSFD. These steps will be necessary to ensure consistency across regions, including on issues such as assessments and protection measures.[10]
- **Incorporating and balancing divergent interests.** In the case of the MSFD, for example, it has been noted that tensions between environmental and economic interests are observable, and that these differences in perspectives will need to be managed during implementation.[11] Member States are required to assess the socio-economic uses and cost of degradation of the marine environment. A focus on stakeholder participation will be key during the transposition process.
- **Establishing authority for integrated management approaches:** As the EU attempts to implement integrated approaches to management, such as Marine

7 European Commission, 2010a.

8 Marine Strategy Framework Directive, Official Journal of the European Union, 2008/56/EC. For a thorough overview of the content of the MSFD, see: Juda, 2010.

9 European Commission, 2009b.

10 Markus et al, 2011, pp. 87-88.

11 Juda, 2010, p. 39.

Spatial Planning (MSP), challenges will emerge in navigating the array of relevant sectoral authorities overseeing maritime activities. Establishing authority for MSP planning and implementation, such as potentially through new legislation, is a crucial but potentially politically challenging step.[12]

These challenges aside, it is clear that the adoption of both the IMP and MSFD represent positive steps for the EU with regard to managing marine and maritime issues in a way that is more environmentally and economically sustainable. It has been noted that the very existence of the IMP, as the EU's overarching maritime policy framework, is changing existing conceptions of territorial waters and establishing the notion of a unified EU ocean space.[13] This shift in mindset has the potential to facilitate and encourage integration of policy making, allowing EU marine and maritime policy to better reflect the realities of the ocean environment and the overlapping and sometimes incongruent interests of maritime activities and stakeholders.

2.1.2 US policy framework

Like the EU, the US faces the challenge of an existing system of coastal and ocean management that has evolved on a largely sectoral basis. At the federal level alone, oceans and coasts are managed under more than 140 different federal laws implemented by a wide range of federal agencies.[14]

In response to this deficiency, the US established the National Policy for the Stewardship of the Ocean, Our Coasts, and the Great Lakes (National Ocean Policy) through an Executive Order signed by President Obama in July 2010. [15] This new National Ocean Policy is based on the efforts of the White House Interagency Ocean Policy Task Force, which outlined its vision for a national ocean policy in the *Final Recommendations of the Interagency Ocean Policy Task Force*.[16]

Under the new National Ocean Policy, many coastal states are already making progress on integrated ocean and coastal management reforms and coastal and marine spatial planning efforts. States are also working to better coordinate across state lines on a regional basis. The Interagency Ocean Policy Task Force *Final Recommendations* propose nine regional planning areas composed of coastal and Great Lakes states that will partner to develop coastal and marine spatial plans for their specific regions and interact with the National Ocean Council to ensure consistency in the implementation of the national ocean policy. Although the core goals of the National Ocean Policy are focused on domestic ocean and

Key aims of the US National Ocean Policy:

- Ensure the protection, management and conservation of the US ocean and coastal ecosystems and resources.
- Respond to climate change and ocean acidification through adaptive management.
- Coordinate with national security and foreign policy interests.
- Develop coastal and marine spatial plans to create a more integrated, comprehensive, ecosystem-based approach to planning and managing sustainable use of the oceans and coasts.

12 Ehler and Douvere, 2009, pp. 27-28.

13 See, for example, Koivurova, 2009, pp. 179-180.

14 For a detailed overview of the structure of US maritime policy, see the first CALAMAR report: Cavalieri et al 2011.

15 For more on the National Ocean Policy, see the first CALAMAR report : Cavalieri et al 2011.

16 The White House Council on Environmental Quality. 2010a.

coastal management, the Executive Order states that a key aim in promoting the policy is "cooperating and exercising leadership at the international level" and makes clear connections to the between good ocean management and international security.

Even more than the EU's IMP and MSFD, the National Ocean Policy is in the early stages of implementation. At this point, the National Ocean Council has been formed, Strategic Action Plans for nine national priority objectives are being developed – with drafts expected in the summer of 2011 – and planning is underway for a National Coastal and Marine Spatial Planning Workshop that will take place in June 2011 to educate Federal, State, tribal, local, and regional government representatives about coastal and marine spatial planning and begin forming the Regional Planning Bodies. As the National Ocean Policy is still new, a critical assessment of the prospects for this policy is difficult. However, it is possible to identify potential challenges that the US will need to overcome in order to ensure successful implementation. In many ways, these challenges mirror those faced by the EU in their implementation of the IMP and MSFD, especially in developing coastal and marine spatial planning (particularly with regards to the establishment of authority), in monitoring the various efforts, and in building institutional capacity to implement cross-cutting policies. Additionally, the current political climate in the US poses certain challenges, as national debate is currently focused on the extent of public spending. Reductions in funding to the relevant government agencies responsible for implementation of the National Ocean Policy would, of course, be a significant challenge. A further complication for implementation of the National Ocean Policy lies in the uncertainty regarding the outcomes of the 2012 elections, and whether or not there will be policy continuity should the balance of political power in the legislative and executive branch change.

2.2 International policy framework

The policy framework for international maritime governance consists of internationally-accepted principles and targets that provide overall direction to planning and development in ocean governance at the national, regional and international levels. The policy framework exists across a number of parallel, complementary and overlapping fora and regimes, including numerous global and regional agreements and negotiations on a range of issues, in marine areas within and beyond national jurisdiction (see sidebar).[17]

Key elements of the international maritime policy framework:

- Treaties (eg: UN Convention on the Law of the Sea)
- Customs and general Principles of international law
- Judicial decisions (eg: the International Tribunal for the Law of the Sea)
- Writings of non-governmental organizations (eg: the International Union for the Conservation of Nature)
- Codification of international laws (eg: by the International Law Commission, the UN General Assembly and UN Environmental Programme)
- Soft law (eg: the Code of Conduct for Responsible Fisheries)

Of these, the key forum for maritime issues is the United Nations (UN) and its organs and specialized agencies, which have created a number of conventions dealing with ocean affairs – the 1982 UN Convention on the Law of the Sea (UNCLOS) having a primary role in this regard. UNCLOS is the global legal framework designed to promote the peaceful, rational use of the world's oceans.[18] It has been ratified by

[17] Birnie and Boyle, 2002.

[18] Treves, 2008, as cited in Scheiber, 2009.

160 states, as well as the EU. The US has not ratified UNCLOS, but generally recognizes most of the provisions of UNCLOS as customary international law. Other significant UN fora related to maritime issues and governance include the International Maritime Organization (IMO), the Food and Agricultural Organization (FAO), and the Convention on Biological Diversity (CBD).

Because international law has developed sectorally, the 1992 UN Conference on Environment and Development (UNCED) and the 2002 World Summit on Sustainable Development (WSSD) put forward new principles to address new environmental perspectives. These include the need for the precautionary approach and integrated and ecosystem-based management (Chapter 17 of Agenda 21), as well as new goals and targets on oceans, coasts, and small island developing States in the 2002 Johannesburg Plan of Implementation.[19]

International maritime policy is also formulated across a number of smaller, regional fora, including, most notably, Regional Fisheries Management Organizations (RFMOs). There are 18 RFMOs globally, which are intended to conserve the fish stocks of a particular region of the high seas, and consist of countries with specific interests in that stock and region. Analysis has indicated that the efficacy of RFMOs in ensuring the sustainable management of the fish stocks has, to present, been limited.[20] A substantial gap exists between the stated aims and policies of these organizations and the actual results achieved at the ground level, in part stemming from the large space and lack of monitoring on the high seas.

Outside of the UN, other notable international fora include the Organisation for Economic Co-Operation and Development (OECD) and the World Trade Organization (WTO). In the case of the WTO, a decision was made at the Doha Ministerial Conference that stronger rules are needed on fisheries subsidies, as these subsidies have clear repercussions on trade and the environment.[21] This indicates that the WTO may play an important role in the international legal regime surrounding fisheries management. Though negotiations are ongoing, there are clear legal challenges for WTO in this regard, particularly in ensuring that it's decisions and regulations interact in a harmonious manner with the existing legal regime (as it exists in fora such as UNCLOS and RFMOs).[22]

2.3 Shortcomings of the current international framework

Despite the array of organizations decisions, actors, and processes in play, an examination of the current framework for maritime governance reveals notable shortcomings in terms of the sustainable regulation of the impact of human activities upon the marine environment. In general, the governance systems in place for international waters lag behind those in place for the domestic waters of either the EU or US.[23] This reflects the fact that management of international waters is often more challenging than in domestic waters, due to the legal and

[19] Birnie and Boyle. 2002.

[20] Cullis-Suzuki and Pauly, 2010

[21] WTO. Negotiations on fisheries subsidies.

[22] Young, 2009.

[23] Rochette, 2009.

enforcement complexities. Additionally, the sectoral manner in which policy has historically been developed has undercut the effectiveness of high seas management.[24]

The need for improvement in global environmental governance is clearly visible in ocean management. An analysis of governance effectiveness indicates that the failure to halt or reverse global environmental degradation relates to inherent inadequacies of the global governance system.[25] For example, responsibilities for ocean management are spread throughout the UN system and seldom receive sufficient attention in broader environmental negotiations. While oceans are essential to the earth's climate, ocean issues and impacts on coastal communities are neglected in the global climate regime. Even in cases where international agreements exist related to the sustainable management of ocean environments, there are significant limitations. The UN Convention on Biological Diversity, for example, is limited in its jurisdictional scope. It does not regulate processes and activities occurring in areas beyond national jurisdiction, only obliging states to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or areas beyond national jurisdiction. [26] Given the number of processes and issues that occur on the high seas in areas beyond national jurisdiction, this is clearly problematic.

Furthermore, essential connections between the management of ocean ecosystems and freshwater ecosystems at the UN level are weak. Although UNCLOS serves as the legal framework for the oceans, there are gaps in its coverage and application. In particular, the lack of specific legal instruments to ensure conservation of the ecosystems and natural resources of the marine environment have been identified as a key failing.[27] Discussions during the second Preparatory Committee meeting for Rio+20 held on March 7-8, 2011 emphasized the need for assessment as to why existing agreements were failing to protect ocean resources.[28]

Consequently, the experts involved in the CALAMAR dialogue reiterate the significant need and transatlantic opportunity to modernize the management of marine areas beyond national jurisdiction (ABJN). The September 2010 decision by the OSPAR Commission, comprised of 15 European countries and the European Commission, to delineate six marine protected areas (MPAs) along the Mid-Atlantic Ridge could serve as a model for management of the ABJN. Areas of particular need include:

- **Developing measures to better identify and manage vulnerable or biologically significant areas.** For example, there is currently no North Atlantic-wide, systematic and coordinated process for identifying and adopting cross-sectoral management measures for these regions.
- **Ensuring that impact assessments are undertaken for the expanding number of activities on the high seas**. Unless addressed, this problem will become increasingly problematic as scientific advances facilitate a range of new commercial and scientific activities on the high seas, many of which result in negative impacts to the long-term sustainability of the region.

[24] See for example: UNGA, 2006; Davies et al, 2007; Beddington et al, 2007; Cullis-Suzuki and Pauly, 2010;

[25] UNGA, 2010.

[26] Convention on Biological Diversity, Art. 4.

[27] Hart, 2008, pp. 3-7

[28] UNGA, 2011.

It is important to note that some of the shortcomings of the international maritime policy framework lie in the inherent difficulty of getting UN Member States to implement UNGA resolutions and other forms of international law. In areas where international agreements have been reached, the implementation of these rules is often uneven. This is the case of UNGA resolutions 61/105 and 64/72 for high seas bottom fisheries, wherein no bottom fisheries assessments have been conducted to date in the North Atlantic.

In addition, international maritime policy is often implemented in a fragmented, sectorally focused manner, which fails to reflect the interconnectedness and complexity of maritime affairs and the marine environment. Outside of the gaps and inefficiencies that this produces, overlapping issues are often addressed across multiple fora, which further complicates effective ocean management. A key example is the current debate over the need to reduce emissions from international shipping, where the EU was opposed by the US, Canada, Japan, and Norway in recent efforts to add shipping and aviation emissions in UNFCCC agreements. The EU has now turned its attention to the IMO, where officials responsible for both transport and climate action recently urged the international community to agree on international shipping emissions reductions in 2011.[29]

From a transatlantic perspective, there are surprisingly few formal venues for bilateral discussions on maritime policy between the US and EU, with collaboration focused largely in the fisheries sector.[30] Consequently, the benefits that could be reached through formal dialogue, knowledge transfer and the sharing of best practices between the EU and US are absent, except through ad-hoc cooperation. In particular, there is a lack of coordination and cooperation between the EU and US, particularly related to scientific assessments, development of green technology, maritime surveillance and enforcement and coordination in international fora. Compounding this issue are differences in how research is funded and carried out on either side of the Atlantic, which poses challenges for cooperative research.

The following sections highlight key policy recommendations identified through the four CALAMAR Working Groups as they relate to oceans and climate change; the high seas; integrated marine policies and tools; and enhancing transatlantic cooperation on maritime issues. The concluding remarks present opportunities for next steps toward better integrated ocean governance. Appendix B lists all of the recommendations developed by the working groups. Please refer to the working group papers for further context for the recommendations.

3 Policy recommendations related to oceans and climate change

Scientific consensus indicates that climate change is occurring and that human activities play a substantial role in exacerbating the problem. In the absence of urgent and sustained action, climate change will likely have a substantial negative effect on the world's economic, biophysical and human systems in the decades ahead. This is underscored by the major role that oceans play in global climate systems, as well as the particular vulnerabilities to climate change impacts faced by residents of coastal regions.[31]

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[29] See: http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/126&format=HTML&aged=0&language=EN

[30] See the first CALAMAR report: Cavalieri et al, 2011.

[31] For more on coastal vulnerability see: Harley et al, 2006; Nicholls et al, 2007.

While it is true that climate change is a global challenge requiring the collective action of the international community, the EU and US are uniquely positioned to play a major role in addressing the issue. To this end, there are a number of cooperative actions that the EU and US can take to improve transatlantic cooperation. In the following sections, policy recommendations are described in three main areas as identified by the CALAMAR Oceans and Climate Change Working Group: 1) transatlantic information exchange and collaborative activities, 2) mitigation strategies and initiatives and 3) adaptation strategies.

3.1 Transatlantic information exchange and collaborative activities

The challenges posed by climate change will require enhanced understanding of impacts and vulnerabilities, as well as the development of risk assessments and adaptation strategies. Improved dialogue, as well as enhanced procurement and sharing of information between the EU and US will help develop and strengthen the tools and approaches needed to better address the impacts of climate change. Potential actions in this regard include enhancing communication with a focus on sharing information.

As a first step, **the EU and US should create a continuing Transatlantic Policy Dialogue on Climate Adaptation in Coastal Areas and in Oceans/Seas**. Both the EU and US are currently planning climate change adaptation policies including risk and vulnerability assessments, as well as specific adaptation measures,[32] which would be enhanced by improved collaboration between both regions.

A Transatlantic Platform on Coastal Oceans and Climate Change could serve as a forum for sharing information. Coastal and ocean climate change decision-making relies upon the efficient and effective organization, analysis and distribution of climate change information. Both the EU and US have taken steps to establish information portals, but increased transatlantic cooperation will bolster the ability of decision makers to devise effective and creative adaptation policies.

The EU and US should also support accelerated implementation of the Global Ocean Observing System (GOOS), by designating and supporting responsible national and regional agencies, including national and regional research organizations. Specifically, the EU and US could focus on the accelerated implementation of the Global Climate Observing System (GCOS), while strengthening the relevant functions of the WMO's Global Observing System (GOS) and Global Atmosphere Watch (GAW), the IOC-led Global Ocean Observing System (GOOS), the FAO-led Global Terrestrial Observing System (GTOS) and the global hydrological networks and all relevant satellite systems.

3.2 Mitigation strategies and initiatives

A concerted effort in both the EU and US is needed to increase mitigation strategies and initiatives. **The EU and US should enhance research, development and adoption of ocean-based renewable energy, as well as efficient review and permitting schemes.** Expertise on ocean-based renewable energy research should be leveraged, while policies could be established to encourage cooperation amongst an array of stakeholders on the issue. Such activities should take into consideration the best information available for

[32] For more information on climate change adaptation planning in the EU, see: European Commission, 2009a; For the US, see: The White House Council on Environmental Quality, 2010b.

determining environmental impacts and identifying priority areas and information gaps, while designing conflict resolution devices for siting and development.

Though the EU and US are both using public funds to support research into ocean-based renewable energy, the data and results from this research is not always made public, which undercuts potential progress. **The EU and US should require that all publically funded environmental and technical data related to offshore renewable energy research be placed within the public domain.**

Additionally, the contribution of maritime industries to global greenhouse gas emissions is both substantial and increasing.[33] **Given the dense transatlantic traffic, the EU and US should implement effective emission mitigation measures.** Many ports in the EU and US are already taking steps in this regard, but transatlantic cooperation should accelerate and improve this process. **To this end, the EU and US should expand dialogue at the governmental level and among port and maritime interest groups in order to develop and promote technical and market-based measures to reduce ship and port emissions.** These measures should take the form of networks of port cities facilitating the exchange of best practices, or in increased supply chain efficiencies.

3.3 Adaptation strategies

The increasing impacts of climate change upon coastal communities threaten to exceed the existing adaptation capacities of coastal communities and ocean management systems. To this end, the EU and US will benefit from increased cooperation, coordination and collaboration on the development of flexible adaptation strategies. The development of these strategies will need to engage a broad array of stakeholders to ensure that they are practical, innovative and resilient. These strategies will rely heavily upon the availability of adequate scientific data, and will need to be based upon integrated, ecosystem-based management approaches.

Given the economic damages that are likely to result from climate change in coastal zones, the EU and US both stand to gain from the exchange of predictive tools and methodologies used by the insurance sector in assessing and quantifying climate change risks. Along these lines, **the EU and US should develop flexible adaptation plans and funding mechanisms (including ecosystem-based approaches), which identify methods for ensuring the viability of private property and casualty insurance markets for coastal communities.** These plans should also integrate climate change considerations into due diligence for investment and lending.

In order to develop practical and creative coastal adaptation policies based upon the best possible information, **the EU and US should engage experts in collaboration with maritime trade associations and other maritime clusters, as well as port, municipal and regional authorities on both sides of the Atlantic.**

Maintaining the resilience of natural coastal habitats is critical to protecting these ecologically and physically significant ecosystems. A joint EU-US approach to examining this issue and identifying a range of effective management tools presents a key opportunity for transatlantic cooperation.

[33] For example, a 2010 report by the European Commission's Joint Research Council estimated that CO2 emissions from marine shipping represent up to 5% of global emissions. See: European Commission, 2010b, p. 3.

3.4 Summary

There is a strong need for the EU and US to improve research in the science of oceans and climate change, as well as in the effective design, implementation, and execution of mitigation and adaptation strategies. This is particularly true for the coastal regions of the EU and US. Though uncertainties remain about the precise local and regional impacts of climate change, they must not decrease the urgency and commitment devoted to addressing the issue. Scientific consensus indicates that the economic, ecologic, and human consequences of insufficient action will be severe. As such, planning for climate change in ocean and coastal areas represents a logical risk-management strategy.

The policy suggestions outlined in Chapter 3 are targeted at a broad range of actors, but will especially require the involvement of government agencies on both sides of the Atlantic, including the National Oceanic and Atmospheric Administration (NOAA) and the European Commission. These policy bodies will require committed involvement of actors across all sectors, including the business, non-governmental, and scientific communities.

4 Policy recommendations related to the high seas

The vast majority of the North Atlantic Ocean[34] is classified as "area beyond national jurisdiction" (ABNJ), areas also referred to as "high seas." These marine regions provide distinct opportunities for cooperation between the EU and the US, particularly with regard to conservation and sustainable use of resources. Management and governance of ABNJ in the North Atlantic lags far behind the management and governance systems in place for domestic waters of the US and the EU Member States. Yet the challenging elements of managing ABNJ can also be viewed as an opportunity, where lack of ownership and jurisdiction facilities agreements between states that would be otherwise impossible in a national context. As such, there are a number of steps that can be taken in the near-term to develop a sound framework for long-term transatlantic cooperation on ABNJ issues. Drawing on the conclusions of the CALAMAR High Seas Working Group, policy recommendations are described in three main areas: 1) impact assessments, 2) identifying, managing, and protecting significant and vulnerable marine areas and 3) high seas governance.

4.1 Impact Assessments

Impact assessments in ABNJ are required by a variety of international instruments.[35] Indeed, the International Tribunal for the Law of the Sea recently affirmed that the obligation to conduct prior impact assessments can be regarded as a general requirement of customary international law. Nevertheless, implementation of these requirements is uneven, and there are many human activities that take place in ABNJ for which prior assessments are not yet required under international law, including geoengineering schemes,[36] offshore energy

[34] Defined as the Atlantic Ocean north of the equator.

[35] These include UNCLOS, the UN Fish Stocks Agreement, and UN Resolutions 61/105 and 64/72, which are relevant to bottom fisheries.

[36] An example is carbon capture and storage. Although the London Convention recently adopted an assessment framework for research related to ocean fertilization (after prohibiting commercial activities), other geoengineering schemes will likely be proposed as climate mitigation opportunities raise more and more interest.

projects, floating marine aquaculture facilities, *Sargassum* harvest, bio-prospecting, and most fisheries.

Two potential policy options to address this gap focus on developing international agreements. First, **the EU and US should work within the UN to establish an international agreement that would require any activities taking place in ABNJ, which may have a significant adverse impact on biodiversity or the marine environment, to first undergo a prior assessment.** The Convention on Biological Diversity's 10th meeting of the Conference of the Parties (CBD COP 10) has called on the CBD Secretariat to support the development of technical and scientific guidance regarding the implementation of environmental impact assessments for planned activities in ABNJ[37].

Second, **the EU and US should work with the UN, the North West Atlantic Fisheries Organization (NAFO), and the North East Atlantic Fisheries Commission (NEAFC) to ensure full implementation of UN resolutions 61/105 and 64/72, which require prior assessment of all high seas bottom fisheries in the North Atlantic.** To date, no North Atlantic bottom fisheries have been assessed as required by the resolutions.

4.2 Identifying, managing and protecting significant and vulnerable marine areas

Marine areas deserving special treatment under international law are referred to as Ecologically and Biologically Significant Areas (EBSAs) and Vulnerable Marine Ecosystems (VMEs). Identifying EBSAs and VMEs is an important first step in ecosystem based management and may, in some cases, could eventually contribute to a larger high seas process of marine spatial planning (MSP). As of yet, there is no MSP on the high seas, and there is no North Atlantic-wide, systematic and coordinated process for identifying and adopting cross-sectoral management measures for EBSAs and VMEs. Such a process could ensure they are evaluated and designated based on larger, basin-scale patterns of biodiversity, ecosystems, and other biogeographic characteristics.[38] **Therefore the EU and the US should collaborate to accelerate the progress in identifying EBSAs and VMEs using the criteria established by the CBD and the UN Food and Agricultural Organization (FAO).**

Important progress in protecting marine areas has been undertaken by the OSPAR Commission, which has established six marine protected areas (MPAs) in ABNJ. OSPAR has stated from the outset that adequate consultation with relevant competent authorities – such as the North-East Atlantic Fisheries Commission (NEAFC), the International Seabed Authority (ISA) and the International Maritime Organization (IMO) – must occur prior to the establishment, and during management, of MPAs in the ABNJ of the North-East Atlantic. Thus, in addition to the international organizations above, **the EU and the US should encourage their appropriate internal authorities to cooperate regarding the management and conservation of the OSPAR marine protected areas and further EBSAs in ABNJ.**

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[37] 2009 Expert Workshop on Scientific and Technical Aspects Relevant to Environmental Impact Assessment in Marine Areas beyond National Jurisdiction (http://www.cbd.int/doc/meetings/mar/eweiama-01/official/eweiama-01-02-en.doc) and paragraph 50 of COP10 decision X/29 on coastal and marine biodiversity.

[38] UN resolutions 61/105 and 64/72 require States to identify areas where vulnerable marine ecosystems" (VMEs) are known or likely to occur and manage bottom fishing to prevent significant adverse effects on VMEs, or not authorize them to proceed. While some progress has been made toward implementing these resolutions by NAFO and NEAFC in the North Atlantic, much remains to be done.

There are further opportunities to collaborate in the North Atlantic outside of OSPAR.[39] Therefore, the **EU and US should cooperate to increase understanding of the activities and potential threats to the Sargasso Sea and other ecologically important areas in the North Atlantic,** using it as a chance to gain practical experience in establishing High Seas Marine Protected Areas.

4.3 High Seas governance

Currently, governance of the high seas is based primarily on UNCLOS provisions. UNCLOS is informed by a number of entities and processes having a mandate with regard to maritime-related issues, such as the IMO (transportation) and FAO (fisheries). Therefore, implementation is currently sectorally and regionally fragmented. Some activities are ignored and remain unregulated if they do not fall squarely under the jurisdiction of one of the sectoral entities. Furthermore, no real framework exists for cooperation among organizations with different mandates. The need for coordinated management of the high seas is becoming increasingly clear, as ever more scientific knowledge of open ocean and deep sea habitats shows the fragility, vulnerability, and degradation of many of these ecosystems.

Accordingly, several policy options have been recommended in order to strengthen high seas governance. **First, the EU and US should promote integrated management tools, including marine spatial planning on the high seas, since it is already an important tool for managing ocean areas within Exclusive Economic Zones (EEZs).** An information system would need to be developed to compute environmental and socioeconomic indicators. Support would be needed to establish a planning process for MSP in the North Atlantic, providing a foundation to seek support for high seas marine spatial plans within the UN.

Improving regulations for international shipping is another important step toward bettering high seas governance. An initial step is for **the EU and US to work with relevant bodies to extend the applicability of relevant international requirements on ship safety, labor, and environmental protection to all vessels authorized on the high seas, especially fishing vessels.** Fishing vessels are currently exempt from many important regulatory requirements. It is further recommended to adopt measures regarding vessels that fly flags of "non-compliance". Flag states should take more responsibility for those vessels flying their flag outside of national jurisdiction, and such vessels should also be subjected to port inspection schemes.[40]

The EU and US should establish a joint science and policy initiative to provide a forum for regular discussion on areas of potential cooperation, including a joint declaration of principles. A North Atlantic partnership could be seen as a test for initiatives that could be applied in other geographic areas. One joint agreement to consider could address enhancing maritime domain awareness (MDA)[41], covering all maritime activities in the North Atlantic. Transatlantic cooperation would improve MDA, thus improving both national and international

[39] For example, the Sargasso Sea Alliance, a new initiative by the UK and Bermuda governments to increase cooperation for the conservation of the Sargasso Sea ecosystem is a good example of a site specific area-based management effort that may provide insight into opportunities to create comprehensive protection measures in ABNJ.

[40] Ships registered to flag States listed on the Paris Memorandum of Understanding 'blacklist' and the US Coast Guard 'Target List' are already subject to such measures.

[41] MDA can be defined as "effective understanding of anything associated with the global maritime domain that could impact…security, safety, economy, or environment". US Department of Homeland Security, 2005, p. ii.

security. Furthermore, implementing effective surveillance and monitoring schemes of maritime activities in the high seas, particularly within MPAs, is of the utmost importance for resource and food security. Integration of maritime surveillance with national and international security agencies will decrease redundancy while increasing efficiency and sharing of costs.

At a broad level, the EU and US should promote the adoption of a UNGA declaration or UNCLOS implementation agreement that provides a unified articulation of the modern principles of ocean governance currently expressed across a number of relevant frameworks and instruments (such as the Rio+20 Process, Agenda 21 and its Joint Plan of Implementation agreed at WSSD, CBD, UNFSA, or the London Convention and Protocol).

Finally, the EU and US should consider joint actions to enhance surveillance and monitoring in ABNJ. This could take the form of an agreement on maritime domain awareness (MDA) that covers all maritime activities on the North Atlantic, including fisheries. The EU and US should also implement innovative and effective surveillance and monitoring schemes, especially in MPAs.

4.4 Summary

Most of the recommendations discussed in Chapter 4 target EU and US government institutions directly, such as the Department of State, NOAA or DG Relex and DG Mare. The key issues identified here could be addressed at upcoming international meetings, such as UN working groups, the IUCN World Conservation Congress, Rio+20, or international security meetings. Further target audiences for these recommendations include regional bodies such as OSPAR and international organizations including the FAO, IMO, and UNGA processes.

A major challenge for the implementation of these recommendations is the lack of resources (e.g., finances, time and attention) currently allocated to ABNJ issues. Implementation will require appropriate funding. It will also be challenging to move from broad recommendations to actionable goals and milestones upon which the EU and US agree. Adequate political will to achieve these goals will help overcome the funding challenges.

Although the focus of the CALAMAR dialogue is on opportunities for cooperation between the EU and US, it is important to broaden this debate beyond the North Atlantic and to include and cooperate with other states surrounding the Atlantic and the world's oceans.

5 Policy recommendations related to integrated marine policies and tools

As established in Chapter 2, the fragmentation of existing coastal and marine policies has produced poor management that fails to effectively regulate the array of activities occurring in coastal and marine areas, particularly as regards their impact upon marine ecosystems. In recent years, however, several countries have begun developing integrated planning and management approaches that aim to address this deficiency.

By focusing on and addressing the impacts of the entire suite of activities occurring in a specific place, these integrated, common sense approaches to management, such as Marine

Spatial Planning (MSP)[42], can help promote sustainable ocean use. In doing so, they promote the long term resiliency of marine ecosystems, which is necessary for sustainably developing an array of economic activities, ranging from fisheries to offshore energy development to tourism.

In the following sections, policy recommendations for achieving and improving the implementation of MSP are described, as identified by the CALAMAR Integrated Marine Policies and Tools Working Group. They are organized around the following major elements of a MSP process: 1) Initial conditions, 2) Planning, 3) Implementation and 4) Monitoring and evaluation.

5.1 Initial conditions

The relative strength of biological, social and political drivers, the nature of existing authorities, existing incentives or efficiencies, and available financial resources together will affect the pace at which MSP proceeds in different regions. Consequently, MSP must be implemented with these initial conditions in mind.

Drivers for change

In light of the array of objectives for ocean use, understanding the cumulative pressures from human activity in the ocean is critical. These pressures will have specific spatial requirements and impacts upon the suite of benefits humans draw from the ocean, with particular implications for the creation of MSP. **The EU and US should therefore implement MSP in a manner cognizant of the spatial opportunities and constraints for key drivers of MSP, including offshore renewable energy, national security activities, biodiversity conservation efforts, and future impacts of climate change.**

Establishing authority

The issue of establishing authority is another initial factor that needs to be considered, with successful MSP requiring both government leadership and support from communities and stakeholders. Government support can take the form of legislation, but also directives from a high level executive authority. **As the problems MSP seeks to address are urgent, MSP should be initiated as soon as possible, using whatever authority currently exists or is politically feasible.** That being said**, a legislative mandate for MSP is ideal in order to integrate authorities, establish and achieve common objectives, and improve efficiency.** This reflects the likelihood that the further from legislation the authority is situated, the more results will be driven toward a lowest common denominator outcome. In the absence of legislative support, which can take a significant amount of time to achieve, a successful MSP effort can be supported in the shorter term through **executive action. However, in this case, in order for MSP to be successful it is important to evaluate the existing legal authority, obtain key stakeholder support, ensure cooperation among competent authorities and institutions, and adjust existing regulations to align with MSP.**

[42] Throughout this chapter, the terms “marine spatial planning (MSP),” “coastal and marine spatial planning (CMSP),” and “maritime spatial planning (MSP)” will be used interchangeably to describe these new integrated planning and management approaches. The first two are common terms used in the US and the latter is used primarily in the EU.

Additionally, as ocean activities and processes often do not reflect political boundaries, t**ransboundary cooperation in MSP should be practiced when human activities have transboundary effects on marine ecosystems.** These effects should be managed at interstate or regional levels (e.g., regional seas) where win-win situations can be achieved for multiple states.

Efficiency

Although the implementation of MSP entails upfront costs and investments, the approach ultimately lowers costs and increases regulatory and analytical efficiency in a number of ways. These include enhanced government coordination, reduced transaction costs and an improved investment climate stemming from enhanced certainty. To this end, **the EU and US should develop MSP with an explicit commitment to create regulatory efficiencies, while ensuring critical environmental reviews.**

Financing mechanisms

The initial implementation of MSP entails upfront costs, including the need to compile data in a useful format and establishing processes for stakeholder participation. Consequently, establishing funding mechanisms to accommodate these costs will be crucial for the successful implementation of MSP. **The EU and US should therefore explore public-private partnerships as mechanisms to support initial costs and consider resource rents (in which ocean users help support the costs of management) as mechanisms to fund costs of planning, implementing, monitoring and evaluating, and adapting MSP.**

5.2 Planning

Recent years have seen significant MSP progress undertaken in a number of different countries and marine areas. This has resulted in differing approaches to MSP across regions. While flexibility to reflect regional contexts is important to successful MSP implementation, there are a number of essential planning steps which should be part of any MSP process. The following section outlines policy recommendations with regards to these key planning steps.

Stakeholder Participation in MSP

The EU and US agree that stakeholder participation is fundamental to carrying out the MSP process successfully, though substantive differences exist in how each region approaches the practice. **The EU and US should encourage stakeholder participation throughout the MSP process—from goal and objective setting through planning and implementation, monitoring and evaluation, and adaptation.** Ultimately this will require proponents to go as far as possible within their respective political systems to foster engagement with potentially affected stakeholders, as well as society at large.

Pre-planning

Regardless of context, several key pre-planning decisions should be made before real planning begins. This is crucial to the MSP process. It should occur immediately at the start of the process and continue throughout. As such, when implementing MSP **the implementing authorities should establish a detailed pre-planning approach to guide the MSP process.** Pre-planning should include:

- Organization of a MSP team,

- Identification of necessary resources to support the planning effort,
- Development of a work plan (including schedule),
- Specification of the boundaries and time-frame for planning,
- Identification of a set of principles,
- Agreement on a set of general goals,
- Specification of a set of clear and measurable objectives, and
- A strategy for periodic evaluation and updating.

Data Management

MSP requires substantial data on ecosystems, human activities and other oceanographic features. Insufficient data at the beginning of a MSP process is not a reason to delay the process. Data collection over the course of the MSP process will yield new insights and enable adaptive management. **Rather than delaying the initiation of the process until all necessary data are compiled, marine spatial plans, and the processes that underlie them, should be constructed on the basis of the best available science at the time of plan development and be designed to be adaptive.**

Future-orientation

Planning is a future-oriented activity, yet most MSP processes in the US and EU have not yet demonstrated an ability to consider the future adequately. A key challenge for any MSP process will be its ability to accommodate as yet unimagined ocean uses. Developing alternative spatial sea use scenarios for the future is a crucial step in the MSP process, as it facilitates choosing the desired direction in which the marine area will develop during the second and subsequent cycles of MSP (Ehler and Douvere 2009). **MSP should not only be concerned with existing conditions and maintaining the status quo, but should reveal possible and preferred future scenarios for how the marine area might look in 10, 15, and 20 years.**

The alternatives considered when establishing MSP measures must be broad enough to reflect reasonable uncertainty. Additionally, MSP should be a continuous, adaptive process that includes ongoing monitoring, assessment, compliance, information collection, evaluation, and updating activities (Ehler and Douvere 2009).

The Marine Spatial Management Plan

The marine spatial management plan identifies specific measures that will produce a preferred future through explicit decisions about the location and timing of human activities. A successful marine spatial management plan will consist of a number of features.

Firstly, it should present an integrated vision of the spatial aspects of sectoral policies in the areas of economic development, marine transport, environmental protection, energy, fisheries, and tourism, among others. The marine spatial management plan should also be closely integrated with public investment programs, should highlight the spatial dimension of integrated management, and should show where existing marine policies fit together and where they do not (Ehler and Douvere 2009).

To the extent practicable, all relevant sectors need to be accounted for in the marine spatial management plan, with special effort devoted to including fisheries because of their economic and environmental relevance. The overall MSP process should be as simple, user-friendly, inclusive, and transparent as possible in order to achieve the necessary buy-in from all sectors.

5.3 Implementation

The roles and responsibilities of the various parties in a marine spatial plan must be clearly defined, realistic and achievable, and parties must be accountable from the beginning. This must be enunciated at the start of the planning process and fully developed during early drafting stages. Doing so will enable rapid and effective plan development and will ensure there are no misunderstandings about roles, responsibilities, and authorities once a draft plan is ready for broad public review.

There are a number of examples of MSP efforts conducted under legal mandates in multi-agency teams.[43] A key element of success in these plans was the establishment of clear roles and responsibilities across agencies, with interagency teams providing leadership from the start. However, longer term accountability for plan implementation remains to be seen. One method of creating necessary accountability is to **establish a marine spatial planning governance body responsible for implementation that can be held accountable or hold others accountable. This** body should be made up in part of members of the initial interagency planning team responsible for and accountable to implementation of the plan, and should be **established by an inter-ministerial working group or marine spatial planning team.**

This should be implemented in the initial implementation steps of a marine spatial plan and should be ongoing throughout the implementation and monitoring and evaluation phases, in careful coordination and partnership with implementing authorities.

5.4 Monitoring and Evaluation

A properly designed monitoring program is essential for determining progress toward a desired future ecosystem state through MSP, with successful monitoring requiring a clear determination of what should be monitored and why. State-of-the-system monitoring involves documenting spatial and temporal variability in ecosystem components and thus ideally relies on consistent long-term data from a network of sites. Performance monitoring of the MSP process itself aims to detect any changes in ecosystem status that are caused by specific management actions. This monitoring requires indicators of:

- Clearly specified and measurable objectives
- Clearly specified indicators and targets
- Clearly specified linkages between objectives and management measures
- Compliance with regulations
- Ecosystem pressures (the object of management action)
- Status of the ecosystem and human contributions and vulnerabilities affected by these pressures

Indicators

The indicators to be monitored should be identified in part based on a finite budget, so that trade-offs between information value and expenses are explicitly included in the decision. **The MSP governance body should identify a core set of ecosystem indicators, and guided by a logical rationale for the management actions (e.g., integrated ecosystem**

[43] For case studies on two such examples, marine spatial plans in Germany, and the Massachusetts Ocean Management Plan in the US, please see the full report of the CALAMAR Working Group on Integrated maritime policies and tools.

assessment, Strategic environmental assessment), should take ownership of monitoring and reporting. The core set of indicators to be monitored, as well as the parties responsible for monitoring, and reporting frequency should be identified by the MSP governance body and agreed to by responsible parties at the outset of MSP implementation.

A MSP monitoring program should be able to not only track the condition of the natural and social system indicators, but also provide timely assessments or early warnings of pressures to the system.

Evaluation and reporting requirements

Evaluation of monitoring information in order to improve the next round of MSP is an often-neglected step. Unless a truly iterative MSP process is put in place, there is no demand for assessment of indicator status, performance, or compliance information, and thus no learning is built in to the process.

The MSP governance body should be responsible for taking decisions that are contingent on information from monitoring and evaluation programs. The desired outputs of evaluation analyses, assessment frequency, and specific questions evaluations need to address should be identified by the MSP governance body and agreed to by responsible parties at the outset of MSP implementation. **Dedicated scientific staff, including both natural and social scientists, with regular monitoring and evaluation reporting requirements, need to be involved in the MSP process.** This should be implemented at the outset of a MSP process, in coordination with the scientific institutions or individuals responsible for MSP evaluations and assessments.

Transparency

Transparency of the effectiveness of MSP is often opaque, with public accountability of the agencies and entities responsible for MSP difficult to track as a result. **As such, the MSP governance body should develop and commit to regular reporting on monitoring and evaluation in a manner understandable to decision making authorities, politicians, and the public.** This should be implemented at the outset of a MSP process, in coordination with the implementing agencies or individuals responsible for monitoring, assessing data, and reporting indicator status for the MSP.

High profile, clear, and consistent reporting (e.g., such as in a report card or dashboard format) should help to educate the public, keep them apprised of MSP progress, and facilitate their involvement in MSP implementation and development.

5.5 Transatlantic dialogue

As the implementation of MSP in the EU and US progresses, there will be an increasing need to share information on best practices, lessons learned and other experience relevant to policymaking. Consequently, **the EU and US should establish a regular transatlantic dialogue to advance EU and US mutual interests in ocean governance and marine spatial planning.**

5.6 Conclusion

As the significant and widespread impact of the suite of human activities upon the planet's marine ecosystems become increasingly evident, so does the need for new, holistic and

ecosystem-based approaches to managing maritime affairs. The EU and the US are developing integrated management approaches to cope with the many challenges that are posed in sustaining the resilience and productivity of our oceans and coasts. This is no easy or simple task though. As such, the best way to improve MSP is to share experiences; thus, establishing a transatlantic dialogue is a key step towards effective integrated ocean management that will advance the shared interests on both sides of the Atlantic. The dialogue begun by CALAMAR is evidence of this, as it has provided a key opportunity to share experiences, knowledge, best practices and successes, which are reflected in the policy recommendations outlined in this Chapter.

6 Policy recommendations related to EU/US transatlantic cooperation

The significant potential for increased cooperation between the EU and the US is inhibited by a lack of coordination. Since the EU Integrated Maritime Policy (IMP) and the US National Ocean Policy (NOP) express similar interests in managing activities in the Atlantic, concerted efforts to enhance communication between the EU and the US could prove beneficial for both parties.

The following have been identified by the CALAMAR EU/US Transatlantic Cooperation Working Group as four key areas that could produce direct results in improving Atlantic Ocean management and conservation: 1) harnessing scientific capacity for coordinated policy action and integrated assessment, 2) developing environmentally sustainable maritime technologies and practices in shipping, fishing and energy, 3) improving the monitoring, control and surveillance of ocean activities and 4) increasing the international influence of the EU and US by cooperating on international maritime policy.

6.1 Harness scientific capacity for coordinated policy action and integrated assessment

In order to capitalize on the extensive research capacity of the EU and US, there must be a concerted effort to facilitate scientific collaboration and translate science into policy. **As such, the EU and US should coordinate funding and focus in transatlantic maritime research.** Particular attention should be paid to the development of joint mechanisms and activities as well as creating the conditions for maritime clusters to be developed where appropriate.

The EU's Eighth Framework Programme for Research, a fully developed European Marine Observation and Data Network (EMODnet), the US Comparative Analysis of Marine Ecosystem Organisation (CAMEO) Program and the US National Oceanographic Partnership Program should coordinate funding and thematic focus for transatlantic cooperation in science and policy research. The EU's Directorate-General for Research is also in the process of developing an EU Strategy for Marine and Maritime Research under the IMP, which may provide interesting learning points for future transatlantic scientific initiatives.

To date, analysis of the ocean environment, as well as human impacts on that environment, has mostly been carried out in a sectoral fashion. **As such, the EU and US should collaboratively conduct a fully integrated assessment of coastal and ocean areas for the North Atlantic.** This could form the basis for a more effective integrated policy, including MSP for coastal and marine activities, and the development of sustainable economic growth

in the Atlantic. Significantly, it would also allow for collaborative policies to be developed between the EU and US. Indeed, carrying out an integrated assessment would be in line with US National Ocean Policy, as well as EU Member State obligations under the Marine Strategy Framework Directive and upcoming EU IMP Strategy for the Atlantic region.

The International Council for the Exploration of the Sea (ICES) is well positioned to take on the work of integrated assessment if the EU and US can make funding available. In fact, such an integrated assessment could build on work already in progress under the ICES framework. The assessment should also draw on the work of a broad array of US and EU institutions.[44] As an integrated assessment encompasses a broad range of disciplines, it is unlikely that it will be compatible with existing research funding mechanisms. Collaborative science funding from the EU and US should therefore be used to develop a stand-alone program.

An integrated assessment could benefit from the development of high resolution mapping of the ocean floor, particularly in highly productive or sensitive areas. Though the EU and the US are both engaged in developing high resolution maps in selected areas, this work is not yet coordinated within a coherent program covering the North Atlantic. **Therefore, the EU and US should coordinate seabed mapping efforts.** Existing work can form the basis for a broader collaborative effort to map the North Atlantic as comprehensively as possible.[45] The marine knowledge gathered through the EMODnet could also be useful in this context.

There is also a need to enhance communication and transparency to increase awareness of maritime policy activities taking place, specifically regarding integrated assessment work being carried out under the IMP, EU Common Fisheries Policy, EU Environmental Policy and EU shipping policy, as well as by the NOC in the US. **Consequently, the EU and US should develop communication and transparency between their respective institutions and agencies involved in maritime governance.** In particular, efforts should be made toward promoting transparency on the budgetary spends for ocean and maritime affairs by the public administrations on both sides of the Atlantic. A website with a centralized information data-base under the control of the focal institutions (European Commission, Directorate General for Maritime Affairs and Fisheries (DG MARE) and NOC) could be established for this purpose. The EU Maritime Forum could serve as a basis for developing such a website.

Process and timeline for these recommendations

Consultation for the next EU Framework Research Programme (after 2013) is underway and coordination with US counterparts should take place immediately to ensure that transatlantic research interests are represented in the next funding period. The scientific work for an integrated assessment can begin as soon as a mandate for such work is given by the EU and NOC, in principle, if sufficient financial and human resources can be made available. A logical time step is a five year assessment that is updated at this same interval. With regards to seabed mapping, work is already underway, meaning that coordination can proceed almost immediately (resources permitting).

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[44] These could include: the integrated marine ecosystem assessment being carried out at NOAA Fisheries' Northeast Science Center (Woods Hole) for the Northwest Atlantic; the actions of EU Member States in the context of the implementation of the MSFD; the developments taking place within the EU EMODnet network; and the extensive scientific analyses of the OSPAR Commission.

[45] This includes: DG MARE's Atlas of the Seas, the US Center for Coastal & Ocean Mapping, the Center for Coastal and Ocean Mapping (CCOM)/ Joint Hydrographic Center (JHC) and the Global Earth Observation System of Systems (GEOSS).

6.2 Environmentally sustainable maritime technology and practices for greener outcomes in shipping, fishing and energy

The development and application of technology that uses less energy and resources, produces less pollution, and has generally less negative impacts on ecosystems, is an important area of research and development for both the EU and US. This stems in part from environmental concerns, but also from economic concerns and a growing market in "green technology." Progress is already being made on offshore renewable energy development and the shipping and fishing industries are taking important steps to lower their carbon footprint. However, these efforts are not being coordinated, and public/private cooperation is needed to foster the application of green technology across maritime enterprise. To facilitate this growth, the EU and the US could work together to create economies of scale by having coordinated development programs for green maritime technology, with complementary rules, regulations and incentive plans. In particular, enhancing research in marine bio-technology and renewable marine energy will benefit both EU and US industrial and environmental interests.

There is an immediate need for dialogue on employing sustainable maritime technologies to create win-win situations in terms of environmental, socio-economic and technological benefits. **As such, the EU and US should exchange best practices in environmentally sustainable approaches to governance in shipping, fisheries, energy development, sea-bed exploration and exploitation, and combating pollution and marine debris.**

The following are areas where the sharing of best practice is particularly recommended:

Shipping: The EU and the US stand to gain in the shipping sector if they implement policy in a more coordinated and strategic approach. There are some interesting examples of win-win initiatives taking place within the shipping industry on GHG emissions, including:

- The Environmental Shipping Index (ESI), which provides a new international standard for emission levels and rewards vessels which perform better than the legal norm.
- The World Port Climate Initiative[46], a collective of 55 prominent ports working under the International Association of Ports and Harbors (IAPH) to actively reduce air pollution.

More ports should consider implementing these initiatives, and they should be promoted to create a global mechanism that encourages green shipping.

The shipping, shipbuilding, and marine equipment sectors are already investing heavily in potentially cost-saving technical measures. Efficiency enhancements, such as drag reduction techniques and drive propulsion systems, are some examples of developments in this rapidly growing industry which could benefit from EU-US exchange and cooperation.

Fisheries: Best practices could be shared in line with the 2012 reform of the EU Common Fisheries Policy. These would include, among others, management measures that favor low-energy and selective gear types, the use of rights-based management, setting siting standards for offshore aquaculture, and using Vessel Monitoring Systems to monitor fishing boats rather than sea patrols. Best practice and common approaches should be shared prior to International Fisheries Organizations meetings, in order to enhance EU/US leadership.

[46] The WPCI is organised under the C40 World Ports Climate Declaration which was adopted in 2008 with support from the Clinton Climate Initiative. They aim to establish a framework for CO2 footprint inventory and management, as well as a system of Environmental Ship Indexing.

Energy development: As discussed in the Chapter 3, there are also promising developments in renewable energy research in both the EU and the US.[47] Considering that similar research is occurring on both sides of the Atlantic and that the EU is already involved in developing marine renewable energies that connect to the main energy grid, research cooperation would be ideal given the high costs and degree of specialization necessary to develop new maritime technologies. As offshore oil-exploration will continue to take place in the near future, improvements to safety, standards, mitigation plans and contingency mechanisms are crucial and should form the basis of extensive cooperation.

Sea-bed exploration and exploitation: The EU and the US share many interests in terms of the sustainable management, use and extraction of marine resources. Enhanced cooperation would benefit emerging and highly technical areas, such as deep sea-bed exploration and exploitation. There are marked opportunities for these activities, but they are both costly and technologically demanding. As such, the EU/US should cooperate and share best-practises and expertise, so as to improve efficiency and cost-effectiveness, as well as foster agreement on sustainable and environmentally sound approaches. Joint guidelines could be developed to set benchmarks for future EU/US agreements on other maritime issues as well as establishing themselves as leaders in this emerging industry.

Pollution and marine debris: Contamination and marine debris are major areas of concern in both the EU and the US. It is of vital importance that best practices should be exchanged. For marine pollution, this could involve risk assessment and management approaches to reduce contamination through i.a., persistent organic pollutants or illegal dumping. Regarding marine debris, this could involve the tracking and retrieval of marine debris, especially plastics, lost containers and fishing gear). Additionally, policy frameworks such as the MSFD should be mobilized to tackle this issue.

Process and timeline for these recommendations

A useful starting point would be a maritime green technology conference between the US and EU within the next one to two years to generate suggestions and recommendations for key focus areas. The annual International Marine Debris conference organized by NOAA and UNEP also provides a platform for regular transatlantic cooperation and information exchange.

6.3 Monitoring, control and surveillance

Monitoring, control and surveillance (MCS) is increasingly being viewed as a tool to combat illegal, unregulated and unreported (IUU) fishing, an area of growing concern considering the evidence suggesting that IUU fishing has strong links to organized crime.[48] There is motivation for the EU, the US, and their relevant maritime control agencies to collaborate and share data with appropriate authorities such as the International Criminal Police Organization (INTERPOL).

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[47] In the EU, the Marina Platform is an ongoing project set to conclude in 2014 that aims to develop cost-efficient technologies that will jump start growth in Europe's emerging marine renewable energy industry. For more information see http://www.marina-platform.info. Similarly, in October 2010 the US Department of Energy awarded $5 million to eight joint research projects that will focus on key information gaps concerning the potential environmental effects of renewable ocean energy.

[48] See Putt and Anderson, 2007. The UN General Assembly Resolutions A/RES/63/112 and A/RES/64/72 adopted in 2008 and 2009 respectively both note "the concerns about possible connections between international organized crime and illegal fishing in certain regions of the world".

Both the EU and the US contribute to the International Monitoring, Control and Surveillance Network (IMCS Network), which involves the exchange of information to battle global IUU fishing. A framework exists for mutual assistance between the EU and the US on IUU, however cooperation must be strengthened in order to make the framework fully operational. Both the EU and the US are investing in new technologies which make the surveillance of previously inaccessible areas possible. Coordination will reduce costs and duplicated effort, while increasing overall Marine Domain Awareness (MDA) in the north Atlantic and beyond.

One area of key interest is improving programs that monitor imports to detect IUU products. In this regard, much could be gained from creating a joint approach between the EU, US, and other major import markets for fish, such as Japan. Currently the US-American and European systems for detecting IUU imports are quite different. Although the systems do not need to align completely, there are data and lessons to be shared from both sides.

The efforts to combat IUU fishing stand to benefit immensely from a regular information exchange between EU and US authorities to contribute to a greater global effort. **As such**, **the EU and US should leverage the developing technical expertise in both regions by improving information sharing, especially for combating IUU fishing.** Particular issues that should be jointly addressed include illegal trafficking of people and goods at sea, "flag of convenience" vessels and information on compliance and identity infringers. This data sharing could establish regular cooperation through a handbook, which identifies the different areas of responsibility for each party.

Additionally, the EU and the US should cooperate further to improve maritime monitoring, control and surveillance standards within the IMO.[49] The key area identified where standards need improvement is in Particularly Sensitive Sea Areas (PSSA), in addition to guidelines for offshore ports and energy facilities among other installations. Also, the current exemption of fishing vessels under 24m in length from IMO reporting limits effective surveillance and control, and may pose added threats to maritime security. This will increase the effectiveness of monitoring, control and surveillance while utilizing new technology to lower costs and maximize efficiency.

Process and timeline for these recommendations

A joint action plan is suggested. This should be agreed upon by the EU and US and be implemented over the next three years.

6.4 International Influence

The US and EU are generally aligned on issues of maritime governance, but further co-operation could enhance their influence over outcomes at international and multilateral fora, such as Regional Fisheries Management Organization (RFMO) meetings, the IMO, Convention on International Trade in Endangered Species (CITES), International Whaling Commission (IWC) and more. **As such, the EU and US should increase coordination within international fora.** One action both parties could take would be to support the creation of an ocean and seas focused group in the OECD. Scientific species protection plans could also be used as a starting point for identifying further agreements and joint management approaches. The North Atlantic should be a model for maritime governance,

[49] The EU is not a member of the IMO, however it can be represented via the governments of the Member States.

with the US and EU cooperating with other North Atlantic states. This model should form the basis for positions in international settings.

The EU and US are strong players at multinational environmental, fishing, shipping and maritime management fora, and their influence could be leveraged through greater bilateral coordination on key issues before engaging with other parties at multilateral or international fora. This should take place by strengthening existing efforts, such as the US-EU High Level Fisheries Consultation, as well as on information exchange on MCS, energy development or tackling marine debris.

The support that the EU and US provide to less-developed countries also provides opportunties. Given the heavy amounts of EU and US investment in development aid, it is essential these funds be used to support environmentally responsible approaches to maritime management, particularly with regards to coastal climate change adaptation. **To this end, the EU and US should work to build capacity within development agencies.** Information-sharing will help to avoid duplication of effort as well as ensuring that new technologies are made available for maritime development programs. In some cases, there is scope for collaboration, particularly where one party has a comparative advantage.

Work is also needed to ensure that all EU and US agencies providing international development assistance are aware of the potential impacts of funding in coastal areas. Cooperation is needed for capacity building regarding, for example, MCS. However, the EU and US must also lead by example and improve MCS of their own fishing fleets to avoid over-exploitation of the stocks of less-developed countries.

Process and timeline for these recommendations

A three-year Action Plan is proposed, including potential joint workshops between EU/US organizations, development agencies and other relevant stakeholders.

6.5 Conclusion

The EU and the US both possess strong capacities to perform scientific research, and share many similar interests in maritime governance. Their significant potential for cooperation on scientific research and maritime governance is currently hampered by a lack of coordination. Many of the suggestions above can begin to materialize immediately, once the appropriate communication channels have been established and the funding and political will have been procured. To this end, the EU Integrated Maritime Policy and, in particular, the development of a future EU Integrated Maritime Policy Strategy for the Atlantic, provide a key basis for cooperation, as are straightforward strategies to increase communication, transparency and understanding between the EU and US.

Increased cooperation in Atlantic maritime governance between the EU and the US will not only improve the exchange of knowledge and best practices, but will likely also generate economic gains and technological advancement. The resulting comparative advantage, in combination with enhanced communication, will grant both parties greater leverage at international fora, providing the opportunity to take the lead in issues related to integrated management of the Atlantic Ocean.

Major challenges include obtaining financial support for scientific and policy-based dialogue, as well as further R&D programs such as a comprehensive integrated assessment of the north Atlantic. Although the policy landscape is ripe for integrated maritime governance

approaches, strong political will is needed to ensure that these approaches are coordinated all the way across the Atlantic.

7 Next steps

Despite the significant challenges facing the EU, US, and other countries around the world in working to develop an integrated maritime governance framework, there are clear opportunities for next steps in enhancing collaboration and develop cross-sectoral and integrated approaches through bilateral, multilateral, and international fora. Through the CALAMAR dialogue, the EU has established the foundation for a regular transatlantic dialogue on this emerging issue to address the surprising lack of coordination between the EU and US on development and implementation of cross-cutting approaches. Furthermore, while domestic legislation is evolving toward a more integrated approach, there is still a gap in coordination at the international scale, particularly in the management of the high seas.

The results of the CALAMAR dialogue aim to provide a starting point for further discussion, which will be vital in fostering improved maritime governance for the EU and US as well as other key global actors, such as China and Brazil. Both the Rio+20 United Nations Conference on Sustainable Development in Rio de Janeiro (June 2012) and the Expo 2012 in South Korea (May-August 2012) offer opportunities to increase visibility and possibly launch a permanent dialogue based on the following cross-cutting recommendations identified in the CALAMAR dialogue:

- Advancing and exchanging ocean science information
- Encouraging dialogues and exchange of information about strategies for adapting to climate change, marine spatial planning, developing environmentally sustainable technology
- Protecting critical ecosystems and taking steps to combat IUU fishing
- Strengthening EU/US cooperation and coordination within existing international fora

Beyond promotion and achievement of the policy recommendations identified in this report, the dialogue commenced by CALAMAR could be sustained through a number of methods, including through private/public events, such as the forthcoming conference series ‘Sustainable Oceans: Reconciling Economic Use and Protection’.[50]

The participating experts of CALAMAR tackled a broad range of issues with the goal of addressing economic, environmental and social aspects of complex problems surrounding the impacts of climate change, management and protection of the high seas, strengthened development of marine policies and tools – especially marine spatial planning – and lastly, opportunities to strengthen the bilateral cooperation between the EU and US. Policy recommendations outlined in this report reflect the results of each working group as voiced in their summary reports. This collaboration aims to provide sound options and recommendations that will help further the work of the public and private sectors, civil society

[50] The series is hosted by the Dräger Foundation, in cooperation with the Earth Institute of Columbia University, the European Commission Directorate-General for Maritime Affairs and Fisheries. The first conference is planned for 29 June to 1 July, 2011. In part, the conference aims to facilitate the creation of a European Oceans Commission to foster cooperation with the US Joint National Ocean Commission. For more information, see: http://www.draeger-stiftung.de/en/foundation-programs/conferences-2011/sustainable-oceans.html

and other relevant actors in the transatlantic and international efforts to develop more sustainable approaches to use and manage the world's marine resources.

8 References

Beddington, J.R., Agnew, D.J., & Clark, C.W. 2007. Current Problems in the Management of Marine Fisheries. Science. Vol 316. Pp. 1713-1716.

Birnie, P. and Boyle, A. 2002. *International Law and the Environment*. New York, NY: Oxford University Press.

Cantral, L., Lee, E., Bruns, M., Irigoyen, I., Howard, K., Piotrowski, R., Stuke, F. von Sperber, E., Cavalieri, S., Billé, R., Bourel, M., Rochette, J., Wemaëre, M., Orbach, M.,Cicin-Sain, B., Balgos, M., Hamon, G., 2011. Opportunities and Challenges in the EU and US for Marine Governance Integration. Available at: http://www.calamar-dialogue.org/documents [Accessed on March 10, 2011]

Cavalieri, S., McGlynn, E., Piotrowski, R., RiedReid, A., Cantral, L., Lee, E., Irigoyen, I., Howard, K., Billé, R., Bourel, M., Rochette, J., Wemaëre, M., Orbach, M., Cicin-Sain, B., Balgos, M., Hamon, G., 2011. A Comparison: EU and US Ocean Policy. Available at: http://www.calamar-dialogue.org/documents [Assessed on February 10, 2011]

Cicin-Sain, B. & Knecht, R. 2000. The future of U.S. ocean policy: choices for the new century. Washington, DC: Island Press.

Cullis-Suzuki, S. & Pauly. D. 2010. Failing the high seas: A global evaluation of regional fisheries management organizations. Marine Policy, 34, pp. 1036-1042.

Davies, A.J., Roberts, J.M., & Hall-Spencer, J. 2007. Preserving deep-sea natural heritage: Emerging issues in offshore conservation and management. Biological Conservation, Volume 138, Issues 3-4, pp. 299-312.

Douvere, D. 2008. The importance of marine spatial planning in advancing ecosystem-based sea use management. Marine Policy. Vol 32, 5, pp. 762-771.

Ehler, C. and F. Douvere. 2006. Visions for a Sea Change. Paris, France: UNESCO, Intergovernmental Oceanographic Commission.

Ehler, C. and Douvere, F. 2009. Marine Spatial Planning: a step-by-step approach toward ecosystem-based management. Paris, France: UNESCO Intergovernmental Oceanographic Commission.

European Commission. 2007. “Communication from The Commission To The European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions: An Integrated Maritime Policy for the European Union” 575 final.

European Commission. 2009a. White Paper: Adapting to climate change: Towards a European framework for action. 147 Final.

European Commission. 2009b. Report From The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions - Progress Report On The Eu's Integrated Maritime Policy. 540 final.

European Commission. 2010a. Communication from the Commission. Europe 2020. A Strategy for Smart, Sustainable and Inclusive Growth. 2020 final.

European Commission. 2010b. Regulating Air Emissions from Ships: The State of the Art on Methodologies, Technologies and Policy Opt. Joint Research Council Reference Report. Luxembourg: Publications Office of the European Union.

Harley, C. D. G., Randall Hughes, A., Hultgren, K. M., Miner, B. G., Sorte, C. J. B., Thornber, C. S., Rodriguez, L. F., Tomanek, L. and Williams, S. L. 2006. The impacts of climate change in coastal marine systems. Ecology Letters, 9: 228–241.

Hart, Sharelle. 2008. Elements of a Possible Implementation Agreement to UNCLOS for the Conservation and Sustainable Use of Marine Biodiversity in Areas beyond National Jurisdiction. IUCN, Gland, Switzerland. x + 21

Juda Lawrence. 2007. The European Union and ocean use management: the marine strategy and the maritime policy. Ocean Development & International Law, 38, No 3, pp. 259-282.

Juda, Lawrence. 2010. The European Union and the Marine Strategy Framework Directive: Continuing the Development of European Ocean Use Management. Ocean Development & International Law, 41, pp. 34–54.

Koivurova, Timo. 2009. A Note on the European Union's Integrated Maritime Policy. Ocean Development & International Law, 40, pp. 171–183.

Marine Strategy Framework Directive. "Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for Community action in the field of marine environmental policy (Marine Strategy Framework Directive)" OJ L164/19.

Markus, T., Schlacke, S., & Maier, N., 2011. Legal Implementation of Integrated Ocean Policies: The EU's Marine Strategy Framework Directive. The International Journal of Marine and Coastal Law, 26, pp. 59–90.

Nicholls, R.J., Wong, P.P., Burkett, V.R., Codignotto, J.O., Hay, J.E., McLean, R.F., Ragoonaden, S. and Woodroffe, C.D. 2007. Coastal systems and low-lying areas. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J., and Hanson, C.E.. (Eds.) Cambridge University Press, Cambridge, UK, pp. 315-356.

Pew Oceans Commission. 2003. America's Living Oceans: Charting a Course for Sea Change. Available at: http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/env_pew_oceans_final_report.pdf [Accessed on 10 March 2011]

Putt, J. and Anderson, K. 2007. A national study of crime in the Australian fishing industry. Research & public policy series no. 76. Canberra: Australian Institute of Criminology.

Rochette, J. (Ed.). 2009. Towards a new governance of high seas biodiversity. Revue Océanis, Institut océanographique de Paris, N°35/1-2, 292p.

Scheiber, H. N. 2009. The History of U.S. Non-Ratification of UNCLOS. Berkeley J. Int'l. L. Publicist.

The White House Council on Environmental Quality. 2010a. final Recommendations of the Interagency Ocean Policy Task Force. July 19, 2010. Available at: www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf [Accessed on 04 April 2011]

The White House Council on Environmental Quality. 2010b. Progress Report of the Interagency Climate Change Adaptation Task Force: Recommended Actions in Support of a National Climate Change Adaptation Strategy. Available at: http://www.whitehouse.gov/sites/default/files/microsites/ceq/Interagency-Climate-Change-Adaptation-Progress-Report.pdf [Accessed on March 8, 2010].

Tladi, D. 2011. Ocean governance: a fragmented regulatory framework. In P. Jacquet, R. K. Pachauri, L. Tubiana (Ed) 2011. Oceans: the new frontier. Delhi: TERI Press. 237 p.

Underdal, Arild. 1980. Integrated Marine policy: What? Why? How?. Marine Policy, 4, no 3, pp. 159-169.

UNGA. 2006. Oceans and the law of the sea: Report of the Secretary-General. Available at: http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N06/265/87/PDF/N0626587.pdf?OpenElement [Accessed on March 9, 2010].

UNGA. 2010. Progress to date and remaining gaps in the implementation of the outcomes of the major summits in the area of sustainable development, as well as an analysis of the themes of the Conference. Report of the Secretary-General. Preparatory Committee for the United Nations Conference on Sustainable Development. First session. 17-19 May 2010. Available at: http://www.as-newmedia.com/uncsd/files/PrepCom_One_Doc_on_GECSDPE_and_IFSD.pdf [Accessed April 20, 2011].

UN General Assembly. 2011. 2012 United Nations Conference Called 'Historic Opportunity' To Define 'Green Economy' As Preparatory Committee Begins Second Session. 7 March 2011. Preparatory Committee For UN Conference On Sustainable Development. Available at: http://www.un.org/News/Press/docs/2011/envdev1200.doc.htm [Accessed April 20, 2011].

US Department of Homeland Security. 2005. National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security. Available at: http://www.dhs.gov/xlibrary/assets/HSPD_MDAPlan.pdf) [Accessed March 10, 2011]

WTO. Negotiations on fisheries subsidies. Available at: http://www.wto.org/english/tratop_e/rulesneg_e/fish_e/fish_e.htm [Accessed September 24, 2010]

Young, Margaret A. 2009. Fragmentation or interaction: the WTO, fisheries subsidies, and international law. World Trade Review, 8: 4, pp. 477–515.

9 Appendix A: CALAMAR Working Group members

The members of the four CALAMAR project working groups are listed below.

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10 Appendix B: CALAMAR Working Group Policy Recommendations

A complete list of the recommendations developed by the four CALAMAR project working groups appears below.

CALAMAR Oceans and Climate Change Working Group Recommendations

- ✓ Organize a Transatlantic Policy Dialogue on Climate Adaptation in Coastal Areas and in Oceans/Seas to bring together the experiences of the two regions, focusing on emerging best practices and fostering new collaboration among US and European local, regional, and national leaders on both sides of the Atlantic by the end of 2012.
- ✓ Develop a Transatlantic Platform to support sharing of information and broad dissemination of best practices, scenario building, ecosystem services, and adaptation responses and resiliency by the end of 2012.
- ✓ Commit to: (a) designating and supporting national and regional agencies, including national and regional research organizations with responsibilities for implementing an ocean observing system; (b) establishing effective partnerships between their ocean research and operational communities towards implementation; and (c) engaging in timely, free and unrestricted data exchange.
- ✓ Support government, business and nongovernmental organizations in enhancing development of ocean-based renewable energy and efficient review and permitting schemes, identifying scientific and information gaps, and advancing research and development of new technologies for extraction of renewable energy from the ocean.
- ✓ Require all environmental and technical data related to offshore renewable energy research supported by public funds be placed in the public domain.
- ✓ Expand US and EU dialogue at the governmental level and among port and maritime interests groups to develop and promote technical and market-based measures to reduce ship and port emissions that can be implemented by the ship owners and ports in the US and EU on their fleets, and do not require IMO consensus and conventions or regulation.
- ✓ Develop flexible adaptation plans and funding mechanisms, including ecosystem-based approaches, identifying actions necessary to maintain viable private property and casualty insurance markets for coastal communities, and integrate climate change into due diligence for investment and lending.
- ✓ Engage surveyors, engineers, geoscientists, and coastal planners to facilitate the development of practical and creative solutions to the dilemmas posed by changing coastlines and marine ecosystems.
- ✓ Utilize planning tools in the EU and the US to accelerate the development of coastal and marine spatial plans that would effectively increase the resilience of the most ecologically critical and productive ecosystems and would also highlight the management priorities that most need to be addressed.

CALAMAR High Seas Working Group Recommendations

- ✓ Work within the UN to secure agreement to ensure that any activity, which may have a significant adverse impact on the marine environment or biodiversity in ABNJ is subject to prior assessment by the relevant authorities of the State whose nationals propose to conduct the activity, and

- ✓ Work within the UN, North West Atlantic Fisheries Organization (NAFO) and North East Atlantic Fisheries Commission (NEAFC) to fully implement the requirements for prior assessment in UN resolutions 61/105 and 64/72 for all high seas bottom fisheries in the North Atlantic.
- ✓ The EU and US should work together to accelerate progress in identifying possible Ecologically or Biologically Significant Areas (EBSAs) and Vulnerable Marine Ecosystems (VMEs) using the criteria established by the Convention on Biological Diversity (CBD) and UN Food and Agricultural Organization (FAO) through regional collaboration, including joint workshops for the North Atlantic.
- ✓ The EU and the US should promote cooperation internally within competent authorities regarding the conservation and management of the OSPAR marine protected areas in areas beyond national jurisdiction.
- ✓ Promote cooperation between the EU and the US and within competent authorities regarding the conservation and management of EBSAs beyond national jurisdiction in the North Atlantic.
- ✓ Seek opportunities to gain practical experience in establishing High Seas Marine Protected Areas (MPAs) in the North Atlantic through regional area-based management initiatives such as the Sargasso Sea Alliance seeking to enhance conservation of the Sargasso Sea.
- ✓ Improve implementation of UN Resolutions 61/105 and 64/72, which require States to manage bottom fishing to prevent significant adverse impacts on Vulnerable Marine Ecosystems (VMEs), or not authorize such fisheries to proceed.
- ✓ Support efforts to establish a comprehensive planning process for MSP on the high seas in the North Atlantic, using OSPAR and developing a similar process for the NW Atlantic.
- ✓ Support efforts at the UN in this direction to support a global process of establishing MSP on the high seas.
- ✓ Extend the applicability of relevant international requirements/standards on ship safety, labor, and environmental protection to all classes of vessels authorized to operate on the high seas, in particular fishing vessels;
- ✓ Improve flag state responsibility on the high seas with respect to obligations under the United Nations Convention on the Law of the Sea (UNCLOS) and other relevant international agreements, including flag State obligations with respect to the conservation and management of fisheries.
- ✓ Establish an EU/US collaborative science and policy initiative to discuss areas of potential cooperation on a regular basis, including a joint declaration of principles, bringing together the relevant authorities with a view towards integrated oceans management for the North Atlantic basin.
- ✓ Consider joint EU-US agreements to enhance maritime domain awareness (MDA)[51] for the North Atlantic that cover all maritime activities, including fisheries;
- ✓ Implement innovative and effective surveillance and monitoring schemes in the high seas, especially within marine protected areas (MPAs), for maritime activities, including fisheries.

[51] The term Maritime Domain Awareness refers to the effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment of a nation. Conservation enforcement should be seen in the broader context of other Monitoring Control and Surveillance (MCS) related funding and activities.

CALAMAR Integrated Marine Policies and Tools Working Group Recommendations

- ✓ Implement MSP to address and understand collectively the spatial opportunities and constraints for various drivers of human activities including siting offshore renewable energy technologies, national security activities, and biodiversity conservation efforts, as well as to better plan for future impacts of climate change.
- ✓ The problems MSP seeks to address are urgent, therefore MSP should be initiated with whatever authority currently exists or is politically feasible.
- ✓ If initiated through executive action, evaluation of the existing legal authority, participation of key stakeholders, cooperation among competent authorities and relevant institutions, and adjustment of existing regulations to conform to MSP all are important for a successful MSP effort.
- ✓ A legislative mandate for MSP is ideal in order to integrate authorities, establish and achieve common objectives, and improve overall efficiency.
- ✓ Transboundary cooperation in MSP should be practiced when human activities have transboundary effects on marine ecosystems.
- ✓ Develop MSP with an explicit commitment to create efficiencies in the regulatory process, while ensuring critical environmental reviews.
- ✓ Explore public-private partnerships as mechanisms to support initial costs and consider resource rents as mechanisms to fund costs of planning, implementing, monitoring and evaluating, and adapting marine spatial plans.
- ✓ Stakeholder participation should be encouraged throughout the MSP process—from goal and objective setting through planning and implementation, monitoring and evaluation, and adaptation.
- ✓ Establish a detailed pre-planning approach to guide the MSP process.
- ✓ Rather than delaying the initiation of the process until all necessary data are compiled, marine spatial plans, and the processes that underlie them, should be constructed on the basis of the best available science at the time of plan development and be designed to be adaptive.
- ✓ MSP should not be limited to defining and analyzing only existing conditions and maintaining the status quo, but should reveal possible and preferred alternative futures for how the area might look in 10, 15, and 20 years.
- ✓ To the extent practicable, all relevant sectors need to be included and taken into account in the marine spatial management plan. Special effort should be devoted to including fisheries in marine spatial plans because of their economic and environmental relevance. The overall MSP process should be as simple, user-friendly, inclusive, and transparent as possible in order to engage and obtain buy-in from the sectors.
- ✓ Roles and responsibilities of the various parties in a marine spatial plan must be clearly defined, realistic and achievable, and parties must be accountable from the beginning.
- ✓ Establish an inter-ministerial working group or marine spatial planning team responsible for planning and establish a marine spatial planning governance body responsible for implementation that can be held accountable or hold others accountable.
- ✓ The MSP governance body should identify a core set of ecosystem indicators, and guided by a logical rationale for the management actions (e.g., IEA, SEA), should take ownership of monitoring and reporting.

- ✓ Dedicated scientific staff, including both natural and social scientists, with regular monitoring and evaluation reporting requirements, need to be involved in the MSP process.
- ✓ The MSP governance body should develop and commit to regular reporting on monitoring and evaluation in a way that is understandable to decision making authorities, politicians, and the public.
- ✓ A regular transatlantic dialogue should be established to advance EU and US mutual interests in ocean governance and marine spatial planning.

EU/US Transatlantic Cooperation Working Group Recommendations

- ✓ Coordinate funding and focus in transatlantic maritime research.
- ✓ Conduct integrated assessment for the North Atlantic.
- ✓ Coordinate seabed mapping efforts.
- ✓ Develop communication and transparency between US and EU institutions and agencies involved in maritime governance.
- ✓ Exchange best practices in environmentally sustainable approaches to maritime governance shipping, fisheries, energy development, and combating pollution and marine debris.
- ✓ Improve information sharing, especially to combat illegal, unreported and unregulated (IUU) fishing.
- ✓ Strengthen MCS standards within the International Maritime Organization (IMO).
- ✓ Increase coordination at international fora.
- ✓ Build capacity within development agencies.