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# Environmental assessments in the marine areas of the polar regions

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# Environmental assessments in the marine areas of the polar regions

## **Abstract**

The marine areas of the polar regions represent some of the most pristine and environmentally sensitive habitats in the world, as well as hosting a variety of threatened species. Environmental assessment of human activities with the potential for significant impacts on the species, habitats and ecosystems of these remote marine areas is an essential component of any governance regime for the polar regions. The term “environmental assessment” as used in this chapter encompasses not only prior environmental impact assessment (EIA), but also ongoing monitoring of impacts on the marine environment, post EIA obligations, strategic environmental assessment (SEA) and transboundary implementation of these processes. The well-established process of EIA with its recognized stages of screening, scoping and public consultation is critical to minimizing adverse human impacts on these areas and developing suitable mitigation measures for the duration of such activities and beyond. EIA can alert states to the potential for transboundary harm from certain activities in marine areas and in many cases requires states to notify and consult other states where risks to marine areas under their jurisdiction emerge. EIA is an integral component of a precautionary approach to human activities with the potential for adverse effects on the marine environment. Undertaking prior EIA and ongoing monitoring of activities with the potential for adverse effects on the marine environment is also vital in incorporating environmental concerns into the development process and facilitating sustainable development.

## **Keywords**

environmental, polar, areas, marine, assessments, regions

## **Disciplines**

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## Chapter 7

### Environmental Assessments in the Marine Areas of the Polar Regions

Robin Warner

#### INTRODUCTION

The marine areas of the polar regions represent some of the most pristine and environmentally sensitive habitats in the world, as well as hosting a variety of threatened species. Environmental assessment of human activities with the potential for significant impacts on the species, habitats and ecosystems of these remote marine areas is an essential component of any governance regime for the polar regions. The term “environmental assessment” as used in this chapter encompasses not only prior environmental impact assessment (EIA), but also ongoing monitoring of impacts on the marine environment, post EIA obligations, strategic environmental assessment (SEA) and transboundary implementation of these processes. The well-established process of EIA with its recognized stages of screening, scoping and public consultation is critical to minimizing adverse human impacts on these areas and developing suitable mitigation measures for the duration of such activities and beyond. EIA can alert states to the potential for transboundary harm from certain activities in marine areas and in many cases requires states to notify and consult other states where risks to marine areas under their jurisdiction emerge.<sup>1</sup> EIA is an integral component of a precautionary approach to human activities with the potential for adverse effects on the marine environment. Undertaking prior EIA and ongoing monitoring of activities with the potential for adverse effects on the marine environment is also vital in incorporating environmental concerns into the development process and facilitating sustainable development.<sup>2</sup>

The related but more recently developed process of SEA can be even more beneficial in mitigating the adverse impact of plans, policies and programs for the development of extensive marine areas where a range of human activities occur over longer time frames.<sup>3</sup> SEA is a more overarching concept than EIA and allows for more holistic, comprehensive and long-term consideration of environmental factors at the policy, planning and implementation lev-

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<sup>1</sup> N. Craik *The International Law of Environmental Impact Assessment* (Cambridge University Press, Cambridge: 2008) 71; P. Birnie, A. Boyle and C. Redgwell *International Law and the Environment* 3<sup>rd</sup> edition (Oxford University Press, Oxford: 2009) 165.

<sup>2</sup> Birnie et al, note 1 at 165.

<sup>3</sup> Craik, note 1 at 78.

els.<sup>4</sup> While EIA is often site-specific and limited in time, SEA processes broaden the spatial and temporal range of environmental assessment, often being applied to whole sectors of activity or geographic areas as an institutionalized part of decision making on a long-term basis. For maximum efficacy, SEA and EIA need to be vertically integrated or tiered with environmental considerations being taken into account with broader social and economic considerations at the policy and program level and then flowing down to the project level. This will result in more consistent incorporation of environmental considerations at all levels of a decision making process on the disposition of activities in marine areas.<sup>5</sup>

The broad obligation to conduct EIA of activities with the potential for significant impacts on the marine areas of the Arctic and Antarctic appears in a variety of global and regional instruments applicable to these areas including the LOS Convention,<sup>6</sup> the CBD<sup>7</sup> and the CMS.<sup>8</sup> The conventional international law obligation to conduct EIA is also linked to basic principles of international environmental law such as the duty to prevent transboundary harm and the precautionary principle.<sup>9</sup> At the regional level, the Arctic states have developed non-binding EIA Guidelines<sup>10</sup> but no binding regional regime on EIA or SEA. Some Arctic states are bound by the European Union EIA and SEA Directives<sup>11</sup> while others have obligations to undertake EIA and SEA for activities, plans, programs and policies with the potential for significant transboundary impacts in their adjacent marine areas under the Espoo Convention<sup>12</sup> and its Kiev Protocol.<sup>13</sup> In the Antarctic, the obligation to conduct EIA of activities with the potential for significant impacts on the marine environment is more integrated. The Madrid Protocol provides a multilevel system of EIA for activities in the Antarctic Treaty area.<sup>14</sup> Particular sectors of marine activity such as fisheries have developed more detailed EIA regimes

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<sup>4</sup> Ibid, 155-156.

<sup>5</sup> Ibid, 156.

<sup>6</sup> United Nations Convention on the Law of the Sea of 10 December 1982 (1833 UNTS 396).

<sup>7</sup> Convention on Biological Diversity of 5 June 1992 (1769 UNTS 79).

<sup>8</sup> Convention on the Conservation of Migratory Species of Wild Animals of 23 June 1979 (1651 UNTS 333).

<sup>9</sup> Birnie et al, note 1 at 138-140.

<sup>10</sup> Guidelines for Environmental Impact Assessment (EIA) in the Arctic, available at <arcticcentre.ulapland.fi/aria/trakno.asp>.

<sup>11</sup> Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification) (Official Journal (OJ) (2012) L26/1-21); Directive 2001/42/EC of the European Parliament and Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (OJ (2001) L 197/30-37).

<sup>12</sup> Convention on Environmental Impact Assessment in a Transboundary Context of 25 February 1991 (1989 UNTS 309).

<sup>13</sup> Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context of 21 May 2003, available at <www.unece.org/env/eia/about/sea\_text.html>.

<sup>14</sup> Protocol on Environmental Protection to the Antarctic Treaty of 4 October 1991 (30 ILM 1461).

which are applicable to activities in the marine areas of the polar regions. These include relevant provisions of the Fish Stocks Agreement<sup>15</sup> and the CAMLR Convention.<sup>16</sup> The interaction of these global, regional and sector specific regimes and their relationship to national law and policy on environmental assessment is complex and markedly different for each polar region.

This chapter will examine how overarching provisions in the LOS Convention and other global instruments such as the CBD and CMS apply to environmental assessments in the marine areas of the polar regions. It will comment on the endorsement of EIA obligations as customary international law in the jurisprudence of international tribunals such as the International Court of Justice (ICJ) and the International Tribunal for the Law of the Sea (ITLOS). The development of EIA regimes for sectoral activities such as fisheries at the global and regional level and their relevance for the polar regions will also be explored. The evolution of more detailed EIA instruments and policies for both the Arctic and the Antarctic will be reviewed as well as regional instruments specific to particular sectors of activity or subregions in the marine areas of the polar regions. A detailed analysis of national approaches to EIA and SEA in the marine areas of the polar regions is beyond the scope of this chapter but linkages between the global, regional and sectoral environmental assessment regimes and national environmental assessment will be identified. The overall efficacy of environmental assessment in the marine areas of the polar regions will be discussed from a number of perspectives: whether all sectoral activities are covered by the current mix of global, regional and sectoral environmental assessment instruments and arrangements applicable to the marine areas of the polar regions; whether specific environmental assessment regimes take into account the particular characteristics of the marine areas of the polar regions; and whether transboundary impacts of activities, plans, programs and policies are adequately covered by global, regional and sectoral environmental assessment instruments and arrangements and whether activities, plans programs and policies affecting marine areas beyond national jurisdiction (ABNJ) are covered by such regimes. Finally, the chapter will explore the implications, for the marine areas of the polar regions, of evolving global processes such as the United Nations General Assembly Ad Hoc Open-ended Informal Working Group, created to

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<sup>15</sup> Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks of 4 August 1995 (2167 UNTS 3).

<sup>16</sup> Convention on the Conservation of Antarctic Marine Living Resources of 20 May 1980 (1329 UNTS 48).

study issues related to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (BBNJ Working Group) and the development of draft CBD Guidelines on EIA and SEA for marine and coastal areas.

## GLOBAL REGIMES – ENVIRONMENTAL ASSESSMENT PROVISIONS AND THEIR APPLICATION TO THE MARINE AREAS OF THE POLAR REGIONS

### International Environmental Law Principles and Environmental Assessments

The process of environmental assessment, particularly EIA, is one of the means by which states can implement a range of international environmental law principles. An EIA plays a fundamental role in discharging states' obligations to prevent transboundary harm, adopt a precautionary approach and promote sustainable development.<sup>17</sup> The customary international law status of the obligation on states to conduct EIAs of activities with the potential to significantly affect the environment, including its marine components, has been steadily crystallizing in the recent jurisprudence of the ICJ and the ITLOS. In the *Gabčíkovo-Nagymaros* case the Court considered assessment, notification and consultation, effectively the elements of an EIA process, to be a necessary step in a state's implementation of the duty to prevent transboundary harm and the concept of sustainable development.<sup>18</sup> In the *Pulp Mills* case, the ICJ found that:

it may now be considered a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource.<sup>19</sup>

In the *MOX Plant* case, ITLOS ordered the parties, Ireland and the United Kingdom, to improve their transboundary environmental cooperation including carrying out an adequate assessment of the potential impacts of a nuclear fuel reprocessing plant in Cumbria on the ma-

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<sup>17</sup> Craik, note 1, at 54, 77 and 224.

<sup>18</sup> *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)* (1997) ICJ Reports 7, at para. 141; A. Boyle, "The *Gabčíkovo-Nagymaros* Case: New Law in Old Bottles" (1997) 8 *Yearbook of International Environmental Law* 18; Craik, note 1 at 114.

<sup>19</sup> *Pulp Mills on the River Uruguay Case (Argentina/Uruguay)* (Provisional Measures) (2006) ICJ Reports, at para. 204.

rine environment of the Irish Sea.<sup>20</sup> The Advisory Opinion of the Seabed Disputes Chamber of the ITLOS on the *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area*, has also acknowledged the customary international law status of the obligation to conduct EIAs for activities with the potential for significant impacts on the marine environment, including for ABNJ, specifically the deep seabed beyond national jurisdiction (the Area).<sup>21</sup>

## Overarching Environmental Assessment Provisions in Global Regimes

### *The LOS Convention*

The LOS Convention provides for prior and ongoing assessment of activities likely to pollute or cause significant and harmful changes to the marine environment in its entirety, including the marine areas of the polar regions. Article 206 specifies that where states have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of, or significant and harmful changes to, the marine environment, they shall, as far as practical, assess the potential effects of such activities on the marine environment. The obligation to conduct such an assessment is not limited to effects on areas within national jurisdiction and therefore includes the potential effects on the substantial ABNJ of both polar regions. States must also keep under surveillance the effects of any activities they engage in or permit, to determine whether these activities are likely to pollute the marine environment (article 204(2)). Articles 206 and 205 of the LOS Convention provide that states should publish reports of the results obtained at appropriate intervals to the competent international organizations, which should then make them available to all states. These general obligations in the LOS Convention have been supplemented by more specific EIA principles and procedural provisions at the global and regional levels and for particular sectors of activity in marine areas.

### *UNEP Goals and Principles of EIA (UNEP Principles)*

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<sup>20</sup> *MOX Plant Case (Provisional Measures)*, available at <[www.itlos.org/fileadmin/itlos/documents/cases/case\\_no\\_10/Order.03.12.01.E.pdf](http://www.itlos.org/fileadmin/itlos/documents/cases/case_no_10/Order.03.12.01.E.pdf)>, para. 82; A. Boyle “Environmental Jurisprudence of the International Tribunal for the Law of the Sea” (2007) 22 *International Journal for Marine and Coastal Law* 377; M. Cordonnier Segger, M. Gehring and A.P. Newcombe *Sustainable Development in World Investment Law* (Kluwer Law International, Leiden: 2011) 152.

<sup>21</sup> International Tribunal of the Law of the Sea, Advisory Opinion on *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* of 1 February 2011, available at <[www.itlos.org/fileadmin/itlos/documents/cases/case\\_no\\_17/adv\\_op\\_010211.pdf](http://www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/adv_op_010211.pdf)>, p. 44, para. 145.

The 1987 UNEP Principles<sup>22</sup> represent one of the earliest global elaborations of the objectives and fundamental procedures encompassed in EIA. They provide an internationally accepted model of the minimum requirements for effective EIA. Principle 1 specifies that an EIA should include:

- A description of the proposed activity;
- A description of the potentially affected environment, including specific information necessary for identifying and assessing the environmental effects of the proposed activity;
- A description of the practical alternatives, as appropriate;
- An assessment of the likely or potential environmental impacts of the proposed activity and alternatives, including the direct, indirect, cumulative, short-term and long-term effects;
- An identification and description of measures available to mitigate adverse environmental impacts of the proposed activity and alternatives, and an assessment of those measures;
- An indication of gaps in knowledge and uncertainties that may be encountered in compiling the required information; and
- An indication whether the environment of any other state or of ABNJ are likely to be affected by the proposed activity or alternatives.

The general obligation to consult with interested stakeholders on an EIA before a decision is made to proceed with an activity is recognized in Principle 7 which provides that “government agencies, members of the public, experts in relevant disciplines and interested groups should be allowed appropriate opportunity to comment on the EIA.” For activities affecting the marine areas of the polar regions, this immediately raises the question of who qualifies as an interested stakeholder particularly for ABNJ and which global, regional or national organization is responsible for administering and responding to such consultation.<sup>23</sup>

In relation to decisions or actions taken by the proponent of a project or activity following an EIA, the UNEP Principles adopt a due diligence approach requiring the proponent to fully examine the potential environmental impacts of a particular project or activity and give due

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<sup>22</sup> UNEP, United Nations Environment Programme Goals and Principles of EIA, available at <[www.unep.org/regionalseas/publications/reports/RSRS/pdfs/rsrs122.pdf](http://www.unep.org/regionalseas/publications/reports/RSRS/pdfs/rsrs122.pdf)>.

<sup>23</sup> See below section Global Initiatives on Environmental Assessment in ABNJ.

consideration to the interests of affected parties. The Principles do not impose a particular decision path on the proponent. Although the UNEP Principles do not extend the proponent's obligations beyond this due diligence approach, it could be argued that if an EIA concludes that significant harm is likely to marine areas, under the international law duty to prevent transboundary harm set out in Principle 21 of the Stockholm Declaration and Principle 2 of the Rio Declaration and confirmed by the ICJ in its Advisory Opinion on the *Legality of the Threat or Use of Nuclear Weapons*, the state conducting such an EIA would be under a positive obligation to mitigate that harm or refrain from the project or activity.<sup>24</sup>

### *Convention on Biological Diversity*

The CBD links Contracting Parties' obligations to conduct EIAs more directly to the conservation of biodiversity in both marine and terrestrial environments. Under its provisions, Contracting Parties must introduce procedures requiring EIA of proposed projects that are likely to have significant adverse effects on biodiversity with a view to avoiding or minimizing such effects (article 14(1) (a)). Having identified processes and categories of activities that are likely to have significant adverse impacts on the conservation and sustainable use of biodiversity, Contracting Parties must then monitor their effects through sampling and other techniques (article 7(c)). This obligation applies to processes and activities, regardless of where their effects occur, carried out under the jurisdiction or control of Contracting Parties in areas under their national jurisdiction or in ABNJ (article 4(b)). The critical importance of collaboration between states in minimizing adverse impacts to biodiversity in ABNJ is emphasized in article 14(1) (c). Under this article, Contracting Parties must promote reciprocal notification, exchange of information and consultation on activities under their jurisdiction or control that are likely to significantly affect adversely the biodiversity of other states or ABNJ. In the case of imminent or grave danger or damage, originating under their jurisdiction or control, to biodiversity under the jurisdiction of other states or in ABNJ, Contracting Parties must notify immediately the potentially affected states as well as initiate action to prevent or minimize such danger or damage.

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<sup>24</sup> Declaration of the United Conference on the Human Environment, Stockholm of 16 June 1972 ((1972) 11 ILM 1416); Rio de Janeiro Declaration on Environment and Development, Rio de Janeiro, 3 to 14 June 1992, (UN doc A/CONF.151/5/REV.1; (1992) 31 ILM 876); International Court of Justice, Advisory Opinion on *Legality of the Threat or Use of Nuclear Weapons* of 8 July 1996 (1996) ICJ Reports, 226 at 241, para. 29; Craik, note 1 at 67.

These broad EIA obligations in the CBD have been augmented by the CBD EIA Guidelines<sup>25</sup> that emphasize the importance of including biodiversity-related criteria in the screening process. The Guidelines promote lists identifying those geographical areas where important biodiversity is found as a basis for determining which projects require an EIA.<sup>26</sup> They also recommend that biodiversity expertise be included in expert teams assessing whether particular activities should be subject to EIA.<sup>27</sup> They elaborate on the types of impacts and alternatives that should be identified and examined in a biodiversity-inclusive EIA report.

The Guidelines reflect a best practice standard for EIAs of activities with the potential to significantly affect all aspects of biodiversity, including marine biodiversity within and beyond national jurisdiction. Their implementation depends on a detailed level of knowledge of species, habitats and ecosystems and their interconnections in a particular marine area. A later section of this chapter will examine the process currently being undertaken in the CBD to define the special considerations to be taken into account in EIAs of activities with the potential to significantly affect biodiversity in marine and coastal areas, and its relevance to environmental assessments in the marine areas of the polar regions.

#### *Convention on the Conservation of Migratory Species of Wild Animals*

The objective of the CMS is to conserve migratory species of wild animals, including certain marine species that migrate through marine areas within and beyond national jurisdiction. Its provisions have direct relevance to many of the seabirds and marine mammals migrating through the marine areas of the polar regions. In its Resolution 7.2 on Impact Assessment and Migratory Species of 8 September 2002, the Conference of Parties (COP) of the CMS urged states to include in EIAs and SEAs “as complete a consideration as possible of effects involving impediments to migration, of transboundary effects on migratory species, and of impacts on migratory patterns or migratory ranges.”<sup>28</sup> Obligations to conduct EIAs and SEAs are reflected in subsidiary agreements to the CMS relevant to species migrating through the marine environment of the polar regions. Three Arctic states, Denmark, Sweden and Norway are

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<sup>25</sup> Biodiversity in Impact Assessment. Background Document to Decision VIII/28 of the Convention on Biological Diversity. Voluntary Guidelines on Biodiversity-Inclusive Impact Assessment, available at <[www.cbd.int/doc/publications/pubcbd-ts-26-en.pdf](http://www.cbd.int/doc/publications/pubcbd-ts-26-en.pdf)> (CBD IA Guidelines).

<sup>26</sup> Ibid, 24-26.

<sup>27</sup> Ibid.

<sup>28</sup> Available at <[www.cms.int/bodies/COP/cop7/proceedings/pdf/en/part\\_I/Res\\_Rec/RES\\_7\\_02\\_Impact\\_Assessment.pdf](http://www.cms.int/bodies/COP/cop7/proceedings/pdf/en/part_I/Res_Rec/RES_7_02_Impact_Assessment.pdf)>.

Contracting Parties to the AEWA<sup>29</sup> and are obliged to take coordinated measures under the agreement to maintain migratory waterbird species in a favorable conservation status or to restore them to such a status within the limits of their national jurisdiction. As part of their responsibilities under the AEWA, these states must assess the impact of proposed projects in important habitats such as wetlands which are likely to lead to conflicts between the interests of populations of migratory waterbirds listed in Table 1 of the Agreement and human interests, and to make the results of the assessment publicly available. A key CMS subsidiary agreement for the Antarctic region is the ACAP<sup>30</sup> which provides in Annex 3 that the Parties shall assess the potential impact on albatrosses and petrels of policies, plans, programs and projects that they consider likely to affect the conservation of albatrosses and petrels before any decision on whether to adopt such policies, plans, programs and projects is made and to make the results of these assessments publicly available. These activities include fisheries, offshore mineral exploration and exploitation, nautical sports, tourism, and cetacean watching. Annex 3 establishes the conditions under which such activities may be conducted.

#### Sectoral Regimes and Environmental Assessment

Comprehensive implementation of the customary international law and LOS Convention obligations on environmental assessment is still at an early stage in many sectors of marine activity. There are environmental assessment provisions in some sectoral instruments concerned with activities such as fishing and deep seabed mining but coverage is far from comprehensive. Environmental assessment of some emerging activities in the marine areas of the polar regions including bio-prospecting and marine geo-engineering is not covered by provisions in sectoral instruments at the global level, although these may be captured by national environmental assessment regimes. The fragmentary nature of environmental assessment provisions for emerging activities in these regions, particularly where they occur in ABNJ, points to the need for a detailed environmental assessment regime at the global level which would supplement the more general provisions in the LOS Convention and act as a default option for environmental assessment where no sectoral regime exists. This section will focus on envi-

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<sup>29</sup> Agreement on the Conservation of African-Eurasian Migratory Waterbirds of 16 June 1995 available at <[www.unep-aewa.org/documents/agreement\\_text/eng/pdf/aewa\\_agreement\\_text\\_complete\\_2009\\_2012.pdf](http://www.unep-aewa.org/documents/agreement_text/eng/pdf/aewa_agreement_text_complete_2009_2012.pdf)>; see also chapter 8 in this volume.

<sup>30</sup> Agreement on the Conservation of Albatross and Petrels of 19 June 2001 (2588 UNTS 257); see also chapter 8 in this volume.

ronmental assessment obligations in fisheries instruments and their applicability to the polar regions.

### *Fish Stocks Agreement*

Under the Fish Stocks Agreement, parties are obliged to assess the impacts of fishing, other human activities and environmental factors on highly migratory and straddling stocks and species belonging to the same ecosystem or associated with or dependent upon these stocks. For this purpose, they must develop data collection and research programs to assess the impact of fishing on non-target and associated or dependent species and their environment, and to adopt plans that are necessary to ensure the conservation of such species and to protect habitats of special concern.<sup>31</sup> This obligation has been further elaborated in the FAO International Guidelines for the Management of Deep Sea Fisheries in the High Seas (FAO Deep Sea Fisheries Guidelines).<sup>32</sup> These Guidelines were developed to help states, regional fisheries management organizations (RFMOs) and arrangements implement a call from the United Nations General Assembly (UNGA) to prevent significant adverse impacts on vulnerable marine ecosystems (VMEs) or not to authorize a particular bottom fishing activity to proceed.<sup>33</sup> In the Guidelines, VMEs are characterized as those ecosystems that are physically or functionally fragile, will experience substantial alteration from short term or chronic disturbance and are very slow to recover, or may never recover.<sup>34</sup> Significant adverse impacts are defined as those that compromise ecosystem integrity (i.e., ecosystem structure or function) in a manner that:

- (i) impairs the ability of affected populations to repair themselves;
- (ii) degrades the long-term natural productivity of habitats; and
- (iii) causes, on more than a temporary basis, significant loss of species richness, habitat or community types.<sup>35</sup>

The Guidelines also specify that impacts should be evaluated individually, in combination and cumulatively.<sup>36</sup> They call for states to conduct assessments of individual bottom fishing

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<sup>31</sup> Fish Stocks Agreement, arts. 5(d) and 6(3)(d).

<sup>32</sup> Available at <[www.fao.org/docrep/011/0816t/0816t00.htm](http://www.fao.org/docrep/011/0816t/0816t00.htm)>.

<sup>33</sup> UNGA Resolution 61/105, paras. 80–91 (UN doc. A/RES/61/105 of 6 March 2007), available at <[daccess-dds-ny.un.org/doc/UNDOC/GEN/N06/500/73/PDF/N0650073.pdf?OpenElement](http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N06/500/73/PDF/N0650073.pdf?OpenElement)>.

<sup>34</sup> FAO Deep Sea Fisheries Guidelines, note 32 at 4, para. 14.

<sup>35</sup> *Ibid*, 4, para. 17.

activities and to adopt measures to prevent significant adverse impacts on VMEs. These procedures include identifying areas or features where VMEs are known or likely to occur, identifying the location of fisheries in relation to these areas and features, and then developing data collection and research programs to assess the impact of fishing on target and non-target species and their environment.<sup>37</sup> The Guidelines list the characteristics of VMEs that should be subject to assessments and give examples of potentially vulnerable species groups, communities and habitats, as well as features that potentially support them.<sup>38</sup>

The provisions of the Fish Stocks Agreement, the FAO Deep Sea Fisheries Guidelines and relevant UNGA Resolutions are designed to be implemented principally by RFMOs and individual states. In the Antarctic, the Commission on the Conservation of Antarctic Marine Living Resources (CCAMLR), has the primary mandate to perform this function for all Antarctic fisheries south of 60 degrees south and for the Antarctic marine living resources of the area between that latitude and the Antarctic Convergence which form part of the Antarctic marine ecosystem.<sup>39</sup> There is no comparable RFMO covering all fish stocks within Arctic marine areas although there are a number of RFMOs and bilateral fisheries agreements whose geographic areas of responsibility include some parts of Arctic marine areas.<sup>40</sup>

## GLOBAL INITIATIVES ON ENVIRONMENTAL ASSESSMENT IN ABNJ

### United Nations General Assembly Initiatives

As the polar regions encompass significant ABNJ, global initiatives to develop best practice standards for environmental assessment in these areas are critical. Their potential incorporation in a global governance regime for ABNJ are relevant to both regions.<sup>41</sup> The BBNJ Working Group has consistently identified EIA for activities affecting ABNJ as an important component of its work. At the first meeting of the Working Group in 2006, the Co-Chairpersons

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<sup>36</sup> Ibid.

<sup>37</sup> Ibid, 9-11.

<sup>38</sup> Ibid, 4, paras.14-16.

<sup>39</sup> CAMLR Convention, art. 1. It can be noted that fishing for southern bluefin tuna also occurs in the CAMLR Convention area, giving the Commission for the Conservation of Southern Blue Fin Tuna (CCSBT) a role in respect of these highly migratory stocks.

<sup>40</sup> Erik Molenaar and Robert Corell "Background Paper Arctic Fisheries" (9 February 2009) Arctic Transform 25-26; see also chapter 11 in this volume.

<sup>41</sup> R. Rayfuse "Protecting Marine Biodiversity in Polar Areas Beyond National Jurisdiction" (2008) 17(1) *Review of European Community and International Environmental Law* 3-4.

noted that the conservation and sustainable use of marine biological diversity in ABNJ should be based on the precautionary and ecosystem approaches using the best available science and prior EIAs.<sup>42</sup> In 2008, the Co-Chairpersons of the Working Group provided further endorsement for EIA as a significant element in the conservation of marine biodiversity in ABNJ, commenting that the UNGA might wish to refer the development and implementation of effective EIAs, as a tool for improving ocean management, to the Working Group for further study.<sup>43</sup> In 2010, the Co-Chairpersons of the Working Group identified the review of approaches to EIAs including in the context of the regional seas programs, and determining commonalities and best practices as a key issue requiring more background studies.<sup>44</sup> In 2011, the Co-Chairpersons recommended to the UNGA that a process be initiated, by the General Assembly, with a view to ensure that the legal framework for the conservation and sustainable use of marine biodiversity in ABNJ effectively addresses those issues by identifying gaps and ways forward. These issues would be dealt with through the implementation of existing instruments and the possible development of a multilateral agreement under the LOS Convention. In particular, it was recommended that the process address measures such as EIA.<sup>45</sup> The UNGA in its annual Oceans and Law of the Sea Resolution in 2011 endorsed the BBNJ Working Group recommendations.<sup>46</sup> The fifth meeting of the BBNJ Working Group in May 2012 recommended that two intersessional workshops be held in the first half of 2013, one of which would be to discuss and provide expert advice to the Working Group on conservation and management tools in ABNJ, including area-based management and EIAs.<sup>47</sup> The UN Conference on Sustainable Development (Rio + 20) meeting in June 2012 supported the

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<sup>42</sup> Report of the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biodiversity beyond areas of national jurisdiction (UN doc. A/61/65 of 20 March 2006), available at <daccess-dds-ny.un.org/doc/UNDOC/GEN/N06/277/50/PDF/N0627750.pdf?OpenElement>, Annex I, para. 5.

<sup>43</sup> Letter from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biodiversity beyond areas of national jurisdiction addressed to the President of the General Assembly (UN doc. A/63/79 of 16 May 2008), available at <daccess-dds-ny.un.org/doc/UNDOC/GEN/N08/344/16/PDF/N0834416.pdf?OpenElement>, para. 54(c).

<sup>44</sup> Letter from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly (UN doc. A/65/68 of 17 March 2010), available at <daccess-dds-ny.un.org/doc/UNDOC/GEN/N10/277/20/PDF/N1027720.pdf?OpenElement>, para. 80(g).

<sup>45</sup> Letter from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly UN doc. 66/119 of 30 June 2011), available at <daccess-dds-ny.un.org/doc/UNDOC/GEN/N11/397/64/PDF/N1139764.pdf?OpenElement>, Annex, Section I, paras. (a) and (b).

<sup>46</sup> Oceans and the Law of the Sea (UN doc. A/RES/66/231 of 5 April 2012), available at <daccess-ods.un.org/access.nsf/Get?Open&DS=A/RES/66/231&Lang=E>, para. 167.

<sup>47</sup> Letter from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly, (UN doc. A/67/95 of 13 June 2012), available at <daccess-dds-ny.un.org/doc/UNDOC/GEN/N12/372/82/PDF/N1237282.pdf?OpenElement>, Annex, Section I, para. (b) and Appendix, para. 8(2).

urgent taking of a decision on whether to develop an international instrument under the LOS Convention on the conservation and sustainable use of marine biodiversity in ABNJ.<sup>48</sup> If such an instrument is developed, implementation of the environmental assessment provisions for the marine areas of the polar and other regions will require a high degree of collaboration between global organizations, existing regional institutions in the Arctic and Antarctic as well as the Arctic states and Antarctic Treaty partners. This may not necessarily involve displacing existing environmental assessment regimes and practices, but rather adding ABNJ considerations to current environmental assessment processes.<sup>49</sup>

### CBD Initiatives

In support of the BBNJ Working Group's endeavors and particularly its focus on EIA, the Conference of the Parties of the CBD (COP CBD) convened an Expert Workshop on Scientific and Technical Elements of CBD Voluntary Biodiversity Inclusive EIA Guidelines for Marine Areas beyond National Jurisdiction in November 2009.<sup>50</sup> This workshop highlighted ecological, governance and practical differences related to the implementation of EIA and SEA for activities with the potential for significant impacts on marine biodiversity in ABNJ as compared to areas within national jurisdiction. The Workshop Report identified the need for:

- Global and, where appropriate, regional standards for acceptable perturbation;
- Compilation of global experiences on how oceanic ecosystems have responded to past human impacts and natural forces, and the effectiveness of mitigation measures [...]; and
- A better understanding of the connectivity between impacts and ecosystem processes within and beyond national jurisdictions<sup>51</sup>

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<sup>48</sup> UN Conference on Sustainable Development – Rio + 20, *The Future We Want*, available at <[www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf](http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf)>, para. 162.

<sup>49</sup> R. Rayfuse and R. Warner “Securing a Sustainable Future for the Oceans beyond National Jurisdiction: The Legal Basis for an Integrated Cross-Sectoral Regime for High Sea Governance for the Twenty First Century” (2008) 23 *International Journal of Marine and Coastal Law* 420-421; K. Scott “International Environmental Governance: Managing Fragmentation Through Institutional Connection” (2011) 12(1) *Melbourne Journal of International Law* 5-6.

<sup>50</sup> Report of the Expert Workshop on Scientific and Technical Aspects relevant to Environmental Impact Assessment in Marine Areas beyond National Jurisdiction (doc. UNEP/CBD/EW-EIAMA/2 of 20 November 2009), available at <[www.cbd.int/doc/?metting=EWEIAMA-01](http://www.cbd.int/doc/?metting=EWEIAMA-01)>.

<sup>51</sup> *Ibid*, Annex II, paras. 16–18.

The Workshop's Report was considered by the tenth COP of the CBD in 2010. The relevant decision requested the Executive Secretary of the CBD to facilitate the development of voluntary guidelines for the consideration of biodiversity in EIAs and SEAs in marine and coastal areas using the guidance in the Manila Workshop Report, to provide for technical peer-review of the guidelines and to submit them for consideration to a future meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) prior to the eleventh COP of the CBD in 2012.<sup>52</sup> The decision impliedly recognized the existence of some sectoral EIA processes for activities affecting ABNJ by acknowledging the guidelines would be most useful for activities that are currently unregulated with no process for assessing impacts. It also requested that the guidelines be developed for all marine and coastal areas rather than simply for marine ABNJ, thus emphasizing the interconnections between ocean ecosystems across jurisdictional boundaries. The draft Guidelines are still under development within the CBD.<sup>53</sup>

## IMPLEMENTING ENVIRONMENTAL ASSESSMENT IN THE MARINE AREAS OF THE POLAR REGIONS

### Arctic Marine Areas

Under customary international law and article 206 of the LOS Convention the Arctic states have a general obligation to assess the potential effects of activities under their jurisdiction or control that may cause substantial pollution of or significant and harmful changes to the marine environment. This obligation has been reinforced in annual UNGA Resolutions on the Oceans and Law of the Sea by including the requirement to communicate reports of the results of such assessments to the competent international organizations.<sup>54</sup> These organizations are not specified in the LOS Convention, but in many regions regional seas organizations (RSOs) would appear to be the most appropriate equivalent for this purpose. For the polar regions IMO or the CBD secretariat are potential "competent international organizations" for this purpose. The primary responsibility for implementing environmental assessment of activ-

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<sup>52</sup> Report of the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (doc UNEP/CBD/COP/10/27 of 20 January 2011), Annex, Decision X/29, para. 50, available at <[www.cbd.int/cop10/doc/](http://www.cbd.int/cop10/doc/)>.

<sup>53</sup> Report of the Sixteenth Meeting of Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) (doc. UNEP/CBD/COP/11/3 of 21 June 2012), para. 99, available at <[www.cbd.int/sbstta16/documents/](http://www.cbd.int/sbstta16/documents/)>.

<sup>54</sup> Oceans and the Law of the Sea (UN doc. A/RES/66/231 of 5 April 2012), available at <[daccess-dds-ny.un.org/doc/UNDOC/GEN/N11/472/68/PDF/N1147268.pdf?OpenElement](http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N11/472/68/PDF/N1147268.pdf?OpenElement)>, para. 137.

ities affecting the marine areas of the Arctic falls on the individual Arctic states. The Arctic Environmental Protection Strategy (AEPS) under the Rovaniemi Process for Arctic wide cooperation produced a set of non-binding Guidelines for EIA in the Arctic (Arctic EIA Guidelines) which were adopted at the final meeting of the Rovaniemi process at Alta in 1997.<sup>55</sup> The Guidelines, although received by the Arctic Council when it was established as the principal forum for Arctic cooperation, have never been updated and do not incorporate an oversight mechanism or even a requirement for exchange of information on EIA practice between the Arctic states.

### *Arctic EIA Guidelines*

The Arctic EIA Guidelines emphasize the specific characteristics of the Arctic environment and define some commonalities in approach to EIA across the Arctic states. They recommend that EIA should be applied to activities associated with the exploitation of both renewable and non-renewable natural resources, public use, military activities and the development of infrastructure for different purposes that may cause significant environmental impacts.<sup>56</sup> Throughout the Guidelines specific characteristics of the Arctic environment are highlighted and related to the EIA process, albeit in fairly general terms. In the context of screening, the Guidelines note that the sensitivity of Arctic areas may justify the application of lower threshold levels for EIA which recognize the sensitivity of Arctic areas and the potential for cumulative environmental impacts.<sup>57</sup> In the scoping phase, the Guidelines emphasize the importance of early and full involvement of indigenous people and other local communities who hold special knowledge of the Arctic.<sup>58</sup> At the impact prediction and evaluation stage of an EIA, the Guidelines identify several Arctic characteristics which play a major role in impact prediction because of the slow, nonlinear and potentially irreversible ecological and physical processes in the Arctic environment. In marine areas these include the extent of ice cover on waters, the slow breakdown of contaminants, large variations in conditions between years, young ecosystems and numerous sensitive areas, low productivity levels in general, short food chains, slow recovery and regeneration rates and low carrying capacity.<sup>59</sup> In terms of

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<sup>55</sup> T. Koivurova “Implementing Guidelines for Environmental Impact Assessment in the Arctic” in K. Bastmeijer and T. Koivurova (eds.) *Theory and Practice of Transboundary Environmental Impact Assessment* ((Martinus Nijhoff Publishers, Leiden; 2008) 153-154.

<sup>56</sup> Arctic EIA Guidelines, note 10 at 11.

<sup>57</sup> *Ibid*, 12.

<sup>58</sup> *Ibid*, 15.

<sup>59</sup> *Ibid*, 21 and Appendix 1.

mitigation measures the Guidelines recommend that such measures should be examined for some aspects of the Arctic environment that are especially susceptible to adverse effects. For instance, projects that could cause oil spills in sea ice or pack ice that are difficult to clean up and pose a particular risk to marine mammals should include plans for containment and clean-up of oil spills. Projects that could cause conflicts with traditional hunting and fishing activities by indigenous peoples that take place at fairly well defined times of the year should include consultation with indigenous communities to avoid such conflicts.<sup>60</sup> The Guidelines indicate that the costs of monitoring programs may be greater in the Arctic because of the remoteness of many areas and the extreme environmental conditions. They also advise that monitoring programs take into account the particular vulnerability of Arctic areas to disturbance because they act as a natural sink for water and airborne pollutants.<sup>61</sup>

Although the Arctic EIA Guidelines represent a valuable initiative, as they identify specific Arctic characteristics to be taken into account at the different stage of the EIA process, they are not complemented by any reporting or monitoring mechanisms to assess whether the national EIA legislation of the eight Arctic states has incorporated the recommendations in the Guidelines. In addition, there is no provision for a regional exchange of information which would allow for the development of best practice environmental assessment in the Arctic. Currently, there is no obligation on the part of the Arctic states to submit any information on how they conduct EIAs of activities in marine areas to the Arctic Council or any of its subsidiary bodies. Nor do the Guidelines specify a requirement for the Arctic states to conduct EIAs of activities with the potential for significant impacts on ABNJ. Koivurova comments on the relatively low level of influence the Guidelines have had on EIA practice in the Arctic and identifies a number of reasons for their lack of influence. He points to the general nature of their content and the lack of clear guidance on some aspects of EIA for Arctic practitioners as well as the lack of a follow-up mechanism for periodic review and amendment of the Guidelines compounded by the loss of the original sponsoring body for the Guidelines through an institutional transition in Arctic cooperation.<sup>62</sup> Any revision of the Guidelines would need to take into account the concurrent obligations of many of the Arctic states under the EU Directives on EIA and SEA as well their obligations in relation to transboundary EIA and SEA under the Espoo Convention and the Kiev Protocol. Sectoral developments on environmental

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<sup>60</sup> Ibid, 25-26.

<sup>61</sup> Ibid, 29.

<sup>62</sup> Koivurova, note 555 at 166-167.

assessment would also need to be recognized, particularly the development of EIA Guidelines for the rapidly developing offshore oil and gas sector discussed below. With appropriate revision, the Guidelines could play a stronger role as a template for best environmental assessment practice in the Arctic and also regulate the environmental assessment of emerging activities with the potential for significant impacts on ABNJ.

### *Arctic Oil and Gas Guidelines*

The impending development of the Arctic offshore oil and gas sector and the recognition that this would impact on many elements of the Arctic including the marine environment, triggered the development of the Arctic Offshore Oil and Gas Guidelines.<sup>63</sup> Chapter 3 of the Guidelines is devoted to environmental assessment. While the Guidelines acknowledge that Arctic countries will adopt different approaches and methods of environmental assessment in the offshore oil and gas sector, they specify some fundamental impacts which should be captured in these processes. These include effects on flora and fauna, other marine activities such as fishing, shipping, tourism and scientific research, subsistence ways of life, sustainability of renewable resources, air, water and sediment quality, climate, ice dynamics, ports and shore reception facilities, permafrost and transition zones.<sup>64</sup> The Guidelines describe the purpose, technique and processes involved in environmental assessment and include a section devoted to SEA.<sup>65</sup> Chapter 4 of the Guidelines relates to ongoing monitoring of the environmental impacts of offshore oil and gas activities in the Arctic. Annex D of the Guidelines provides examples of the EIA process for offshore oil and gas activities in the Faroe Islands, Greenland, Norway, United States, Canada and Russia. While there are no comparable regional guidelines on environmental assessment for other sectors of offshore activity in the Arctic, the current chair country of the Arctic Council, Sweden, has announced its interest in extending the use of EIAs to mining and shipping activities in the Arctic and the PAME working group of the Arctic Council is undertaking a project on EIAs for prospecting and mineral extraction during Sweden's chairmanship.<sup>66</sup>

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<sup>63</sup> Arctic Offshore Oil and Gas Guidelines, Arctic Council of 29 April 2009, available at <[www.arctic-council.org/index.php/en/about/documents/category/233-3-energy](http://www.arctic-council.org/index.php/en/about/documents/category/233-3-energy)>.

<sup>64</sup> *Ibid*, 13-14.

<sup>65</sup> *Ibid*, 14-17.

<sup>66</sup> P. Drankier *Impact Assessment in the Marine Arctic* (paper prepared for Netherlands Institute of the Law of the Sea/Shell Workshop on "Integrated Management and Assessment in the Marine Arctic", 16 May 2012, Utrecht University, The Netherlands), 10.

### *The Espoo Convention*

The Espoo Convention is the only specific international instrument on EIA and provides a detailed template for implementing transboundary environmental assessment in marine areas. Five Arctic states, Denmark, Sweden, Finland, Norway and Canada, are parties to the Espoo Convention, and four Arctic states, Denmark, Finland, Norway and Sweden are parties to its Kiev Protocol on SEA. As contracting parties, these states have responsibilities respectively to assess the transboundary impacts of activities in the marine areas of the polar regions and plans, programs and policies affecting marine areas under their jurisdiction.

For its parties, the Espoo Convention provides a more fully fledged implementation of EIA for transboundary activities and projects. It employs a combination of mechanisms to determine whether a proposed activity is likely to have a significant adverse transboundary impact and should therefore be subject to an EIA. Parties must establish an EIA procedure for activities listed in Appendix I that are likely to cause significant adverse transboundary impacts.<sup>67</sup> Of the activities listed in Appendix I, large-diameter oil and gas pipelines and offshore hydrocarbon production are relevant for their potential to affect marine biodiversity.

The Espoo Convention does not currently require EIAs to be conducted for activities with the potential for significant impacts on ABNJ, although the possibility of negotiating a protocol to the Convention, which provides for such assessments, would be open to the parties and could be particularly useful in Arctic marine areas as five of the coastal states are parties to the Convention.<sup>68</sup>

### *The Kiev Protocol*

As mentioned, four of the Arctic states, Denmark, Finland, Norway and Sweden, are also party to the Kiev Protocol which focuses on SEA in a domestic context. Parties must carry out SEAs for specified plans and programs that are likely to have significant environmental and

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<sup>67</sup> Espoo Convention, art. 2(2).

<sup>68</sup> The potential for extending the provisions of the Espoo Convention to ABNJ is further explored in K. Bastmeijer and T. Koivurova, "Conclusions: Globalisation of Transboundary Environmental Impact Assessment" in Bastmeijer and Koivurova, note 555 at 384-387 and T. Koivurova, "Could the Espoo Convention Become a Global Regime for Environmental Impact Assessment and Strategic Environmental Assessment" in R. Warner and S. Marsden (eds.) *Transboundary Environmental Governance: Inland, Coastal and Marine Perspectives* (Ashgate Publishing, Farnham, Surrey: 2012) 338-342 .

health effects and must endeavor to ensure that environmental, including health, concerns are considered and integrated in the preparation of proposals for policies and legislation that are likely to have significant effects on the environment. The Kiev Protocol imports some of the procedural stages of EIA into its definition of SEA. Article 2(6) of the Protocol defines SEA as:

the evaluation of the likely environmental effects, including health effects, which comprises the determination of the scope of an environmental report and its preparation, the carrying out of public participation and consultations and the taking into account of the environmental report and the results of public participation and consultations in a plan or programme.

The ambit of the Kiev Protocol is wide, with SEAs being required for plans and programs that are prepared for agriculture, forestry, fisheries, energy, industry, including mining, transport, regional development, waste management, telecommunications, tourism, town and country planning and land use and for other projects listed in Annex II which require an EIA under national legislation.<sup>69</sup> Its provisions are not limited to plans and programs with transboundary environmental effects as with the Espoo Convention, but apply to environmental effects wherever they occur. Projects listed in Annexes I and II that could have the potential for significant effects on marine biodiversity include offshore hydrocarbon production, intensive fish farming, the laying of pipelines for transport of gas, oil or chemicals and installations for the harnessing of wind power for energy production.

The scoping provisions of the Kiev Protocol are very comprehensive, requiring parties to prepare an environmental report on plans and programs subject to SEA that identifies, describes and evaluates the likely significant environmental and health effects of implementing the plan or program and its reasonable alternatives. Annex IV to the Protocol specifies the information required in this report which, in addition to the typical content of an EIA, includes a description of the likely significant transboundary environmental effects of plans and programs and the environmental objectives established at international, national and other levels that are relevant to the plan or program including the ways in which these have been taken into account during its preparation. Parties to the Kiev Protocol must provide early,

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<sup>69</sup> The Kiev Protocol is open to all members of the United Nations. The Espoo Convention is yet to be amended to allow this.

timely and effective opportunities for public participation in the SEA of relevant plans and programs. The public for these purposes is defined in article 8(3) of the Protocol as including relevant non-governmental organizations which would be particularly relevant in the case of potential effects on ABNJ. In light of the increasing exposure of the Arctic to industrial development, the need for comprehensive implementation of SEA provisions across the marine areas of the Arctic would seem to be self-evident.<sup>70</sup>

### Antarctic Marine Areas

By comparison with the Arctic, environmental assessment of activities taking place in the Antarctic Treaty area is more integrated at least for parties to the Madrid Protocol.<sup>71</sup> The test applied for screening activities for EIA under the Madrid Protocol is more complex and multi-layered than the EIA provisions of many other international instruments. The screening process has three levels – the preliminary assessment level, the initial environmental evaluation (IEE) level and the comprehensive environmental evaluation (CEE) level. A preliminary assessment is carried out at the national level for all activities subject to the Protocol with less than a minor or transitory impact.<sup>72</sup> If an activity has no more than a minor or transitory impact, an IEE must be carried out, and if it has more than a minor or transitory impact, a CEE must be carried out.<sup>73</sup> All activities, both governmental and non-governmental, in the Antarctic Treaty area are subject to these provisions, except for fishing, sealing, whaling and emergency operations.<sup>74</sup>

An IEE under the Madrid Protocol must contain:

- (a) A description of the proposed activity, including its purpose, location, duration and intensity; and
- (b) consideration of alternatives to the proposed activity and any impacts that the activity may have, including consideration of cumulative impacts in the light of existing and known planned activities<sup>75</sup>

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<sup>70</sup> C. Emmerson *The Future History of the Arctic* (Vintage Books, London: 2011) 219; Koivurova, note 555 at 171-172.

<sup>71</sup> There are at present 35 parties to the Madrid Protocol.

<sup>72</sup> Madrid Protocol, Annex I, art. 1(1).

<sup>73</sup> Ibid, Annex I, arts. 2(1) and 3(1).

<sup>74</sup> Ibid, art. 8(1).

<sup>75</sup> Ibid, Annex I, art. 2(2).

Activities having more than a minor or transitory impact are subject to a more in depth assessment in keeping with the pristine and sensitive nature of the Antarctic environment and the lack of scientific understanding of potential impacts. A comprehensive environmental evaluation (CEE) has a more extensive list of components including:

- (a) A description of the proposed activity, including its purpose, location, duration and intensity, and possible alternatives to the activity, including the alternative of not proceeding and the consequences of those alternatives;
- (b) A description of the initial environmental reference state with which predicted changes are to be compared and a prediction of the future environment reference state in the absence of the proposed activity;
- (c) A description of the methods and data used to forecast the impacts of the proposed activity;
- (d) Estimation of the nature, extent, duration and intensity of the likely direct impacts of the proposed activity;
- (e) Consideration of cumulative impacts of the proposed activity in light of existing activities and other known planned activities; and
- (f) Identification of measures, including monitoring programs that could be taken to minimize or mitigate impacts of the proposed activity and to detect unforeseen impacts and that could provide early warning of any adverse effects of the activity.<sup>76</sup>

In undertaking environmental assessment of activities in the Antarctic Treaty area the Antarctic Treaty Consultative Meeting (ATCM) has prescribed that particular values, identified in article 3(1) of the Madrid Protocol, be taken into account.<sup>77</sup> These include:

The protection of the Antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of scientific research, in particular research essential to understanding the global environment[.]

Post-project monitoring is a discretionary component under the provisions relating to IEE but is a compulsory component under the provisions relating to CEE of activities having more

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<sup>76</sup> Ibid, Annex I, art. 3(2).

<sup>77</sup> Final Report of the Twentieth Antarctic Treaty Consultative Meeting, available at <[www.ats.aq/devAS/info\\_finalrep.aspx?lang=e](http://www.ats.aq/devAS/info_finalrep.aspx?lang=e)>, 26, para. 135.

than a minor or transitory impact on the environment. Article 5 of Annex I to the Madrid Protocol provides that:

1. Procedures shall be put in place, including appropriate monitoring of key environmental indicators, to assess and verify the impact of any activity that proceeds following the completion of a CEE.
2. The procedures referred to in paragraph 1 above [...] shall be designed to provide a regular and verifiable record of the impacts of the activity in order to:
  - (a) enable assessments to be made of the extent to which such impacts are consistent with the protocol; and
  - (b) provide information useful for minimising or mitigating impacts, and where appropriate, information on the need for suspension, cancellation or modification of the activity.

Any significant information obtained or procedures put in place as a result of monitoring must be circulated to parties to the Madrid Protocol, forwarded to the Committee for Environmental Protection (CEP) and made publicly available. The responsibility for monitoring under these provisions, however, still falls on parties individually with no prescribed enforcement or auditing role for the CEP or the ATCM.

The Antarctic Treaty parties have agreed on a range of supplementary guidelines which assist parties to implement the Madrid Protocol including non-binding Guidelines on EIA.<sup>78</sup> These Guidelines elaborate EIA requirements under the Protocol specifying the physical, chemical and biological elements that need to be taken into account in conducting an EIA, the environmental baseline information to be gathered, the direct and cumulative impacts of the proposed activity to be evaluated, the potential alternatives that need to be considered, monitoring programs, mitigation and remediation measures and the gaps in knowledge to be identified. The Guidelines also provide practical information on the content and format of an environmental impact statement (EIS).

In addition to the Madrid Protocol, some environmental assessment of fisheries impacts on Antarctic marine areas takes place under the CAMLR Convention regime. An important as-

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<sup>78</sup> Guidelines for Environmental Impact Assessment in the Antarctic, available at <[www.ats.aq/documents/recatt/Att266\\_e.pdf](http://www.ats.aq/documents/recatt/Att266_e.pdf)>.

pect of the implementation of the CCAMLR conservation objectives has been the assessment of new fisheries to be undertaken in the Convention Area such as those for Patagonian toothfish.<sup>79</sup> Preliminary assessment of new fisheries allows the Scientific Committee of the CCAMLR to introduce measures which satisfy the conservation objectives of the CAMLR Convention while permitting reasonable levels of fishing.<sup>80</sup> This involves the submission of information to the Scientific Committee of the CCAMLR on the state of fish stocks in the areas proposed to be fished and subsequent survey activities before fishing is allowed to proceed. Measures for new fisheries have included catch limits to avoid over exploitation of localized stocks and ongoing surveys of recruitment and growth of stocks in newly fished areas.<sup>81</sup>

Notwithstanding the more integrated nature of the environmental assessment regime contained in the Madrid Protocol, there are some significant deficiencies in its coverage of current and potential activities in the marine areas of the Antarctic. In the two decades since its entry into force there have been no CEEs of activities in the marine areas of the Antarctic Treaty area.<sup>82</sup> As the number of cruising and other vessels traversing these areas has increased significantly over this period this would appear to be a significant omission in the implementation of the Protocol. Hemmings and Kriwoken have also expressed concern that no activities subject to CEEs have been substantially modified or prevented from proceeding despite the potential for serious adverse impacts on the sensitive Antarctic environment.<sup>83</sup> Apart from these deficiencies in environmental assessment coverage for the marine areas of the Antarctic, there is no explicit provision for SEA of plans programs and policies with the potential for significant impacts on the Antarctic environment.<sup>84</sup>

## CONCLUSION

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<sup>79</sup> A.J. Constable, W.K. de la Mare, D.J. Agnew, I. Everson and D. Miller “Managing fisheries to conserve the Antarctic marine ecosystem: practical implementation of the Convention of Antarctic Marine Living Resources (CCAMLR)” (2000) 57 *ICES Journal of Marine Science* 785-786.

<sup>80</sup> *Ibid*, 786.

<sup>81</sup> *Ibid*.

<sup>82</sup> Secretariat of the Antarctic Treaty, Environmental Protocol, EIA Database, available at <[www.ats.aq/devAS/ep\\_eia\\_list.aspx?lang=e](http://www.ats.aq/devAS/ep_eia_list.aspx?lang=e)>; Alan D. Hemmings and Loren K. Kriwoken, “High level Antarctic EIA under the Madrid Protocol: state practice and the effectiveness of the Comprehensive Environmental Evaluation process” (2010) 10 *International Environmental Agreements*” 194-195.

<sup>83</sup> *Ibid*, 187.

<sup>84</sup> R.M. Roura and A.D. Hemmings “Realising Strategic Environmental Assessment in Antarctica” (2011) 13(3) *Journal of Environmental Assessment Policy and Management* 489.

The LOS Convention provides a general obligation to conduct environmental assessment of activities with the potential for significant effects on the marine environment within and beyond national jurisdiction and to report on such assessments to the competent international organizations. International tribunals have articulated the customary international law status of this obligation but left the details of implementation to the discretion of states.

Comprehensive implementation of this general obligation across all the activities with the potential to significantly affect the marine environment of the polar regions is still a work in progress. This chapter has reviewed the existing mix of global, regional and sectoral instruments containing environmental assessment provisions applicable to the marine areas of the polar regions and whether they encompass the full range of current and potential activities in these areas. It has also discussed the linkages between global, regional and sectoral instruments and national systems of environmental assessment and whether there is sufficient global and regional oversight of national practice to properly take into account polar regional characteristics and emerging best practice guidance on environmental assessment in marine and coastal areas. Looking beyond national concerns, the chapter has also examined whether transboundary impacts and impacts on ABNJ in the marine areas of the polar regions are adequately addressed by the current blend of global, regional, sectoral and national instruments and arrangements for environmental assessment.

In the Arctic, implementation of international law obligations to conduct environmental assessment occurs primarily at the national level with minimal oversight by regional and global bodies. At the regional level there have been some efforts to identify Arctic-wide concerns in EIA generally and to provide some best practice guidance on environmental assessment for the offshore oil and gas sector. The Arctic EIA Guidelines highlight the sensitive nature of the Arctic environment and give general guidance on factors peculiar to the Arctic to be taken into account at different stages of the EIA process. However, the Guidelines are quite general in nature and their influence on the Arctic states is relatively low. In addition, there is no regional process in place to monitor whether the Arctic states are observing the recommendations contained in the Guidelines or to what extent the activities of different marine sectors are covered by national EIA provisions. The Arctic Offshore Oil and Gas Guidelines go further in specifying the impacts to be taken into account and recommending techniques and procedures for environmental assessment for the sector but again there is no regional over-

sight body to exchange information and monitor compliance with environmental assessment obligations.

The basis for implementing transboundary environmental impact assessment in the Arctic, should there be major transboundary development projects in the future, is incomplete as only five Arctic states are party to the Espoo Convention. In addition, there is no provision in the Arctic EIA Guidelines for regional assessment of the impacts of human activities on ABNJ. A higher degree of regional cohesion is necessary to achieve more comprehensive and effective assessment of the impacts of intensifying human activities on the marine areas of the Arctic.

In the Antarctic, the Madrid Protocol provides a more integrated regime for environmental assessment, however, this is only binding on the parties to the Protocol and has some significant exceptions for marine activities, in particular for whaling, sealing and fishing. The Protocol provides for a limited degree of oversight of national environmental assessment practice by the CEP, particularly at the prior EIA stage, but once an activity is approved to proceed, oversight of ongoing monitoring is less rigorous. In the two decades since its entry into force there have been no CEEs of activities in the offshore marine areas of Antarctica. The absence of provision for SEA in the Madrid Protocol environmental assessment regime is also of concern in view of the potential for activities such as tourism, bioprospecting and resource development to intensify in the marine areas of Antarctica in the future.

The potential development of an international instrument through the BBNJ Working Group could provide a catalyst for more regional cohesion in implementing environmental assessment for the marine areas of both polar regions. Implementation of such an agreement would require cooperation between relevant global and, regional organizations as well as states with jurisdiction or control over activities with the potential for significant effects on ABNJ in the polar regions. Its advent would open up the possibility for increased global scrutiny of environmental assessment in the marine areas of the polar regions.

The sensitivity and unique nature of the marine environments in both polar regions underscores the importance of implementing best environmental assessment practices across national marine jurisdictions and in ABNJ. Regional instruments and institutional arrangements with the capacity to incorporate new developments in marine environmental assessment assist

states and other actors to implement best environmental assessment practice and monitor on-going impacts in transboundary and ABNJ contexts and will be critical elements in the future sustainable development of the marine areas of the polar regions.