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International legal requirements for environmental and socio-cultural assessments for large-scale industrial fisheries

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Abstract

This article seeks to clarify the extent of international legal requirements for environmental impact assessments (EIAs) and strategic environmental assessments (SEAs) for large-scale industrial fisheries, including whether these requirements entail the assessments of potential social and cultural impacts of the sector's activities. We discuss the current practices of impact assessments more generally and explain the potential and actual environmental and social impacts caused by large-scale industrial fisheries. Based on this analysis, we revisit the international legal foundations for a duty to carry out EIAs, arguing that such a duty applies to large-scale industrial fisheries. We also argue that EIAs for large-scale industrial fisheries, as well as SEAs for related policies and programmes, should integrate the assessment of social and cultural impacts, based on a mutually supportive interpretation of international law regimes dedicated to the sea, fisheries, biodiversity and human rights.

1 | INTRODUCTION

Environmental impact assessments (EIAs) are among the main environmental planning and management tools, required by law in many countries around the world.[1] An EIA has long been a prerequisite for planned physical infrastructure projects and undertakings (e.g. roads, dams and buildings), which have a potential to cause significant environmental impact, but an EIA is generally not required prior to the development or reform of fisheries. This sector has been considered part of the 'orphans of EIA',[2] a striking realization given the fisheries sector's persisting unsustainability trends over the past half century.[3] In effect, scholars have noted that most fisheries are exempt from EIA requirements, as well as from the duty to carry out strategic environmental assessments (SEAs) of relevant policies, plans and

[1]United Nations Environment Programme (UNEP), 'Assessing Environmental Impacts: A Global Review of Legislation' (UNEP 2018) 2.

[2]P Duffy, 'Agriculture, Forestry and Fisheries: The Orphans of Environmental Impact Assessment' (2004) 22 Impact Assessment and Project Appraisal 175, 176.

[3]Food and Agriculture Organization of the United Nations (FAO) 'The State of the World Fisheries and Aquaculture. Towards Blue Transformation' (FAO 2022) 46–59.

programmes,[4] 'even in areas where other users of the marine environment, such as the oil and gas industries, would be required to conduct them'.[5]

In this article, we seek to clarify the extent of international legal requirements for EIAs and SEAs specifically for the large-scale industrial fisheries sector,[6] including whether these requirements entail the assessments of potential social and cultural impacts. It is important to note that, despite the absence of large-scale industrial fisheries in national environmental laws on EIAs and SEAs,[7] this fisheries subsector is subject to other forms of environmental planning, management and control. In fact, the fisheries sector as a whole has been changing over the past decades to address environmental concerns, as well as social and cultural matters relevant to fishers and their communities. This transformation stems from ecosystem-based approaches[8] and, more recently, the integration of climate change[9] and the human rights-based approach[10] to fisheries. With respect to the high seas, a number of regional fisheries management organizations (RFMOs)[11] have been requiring impact assessments to avoid significant adverse impacts on vulnerable marine ecosystems (VMEs) in response to the United Nations (UN) General Assembly resolutions[12] and guidance of the UN Food and Agriculture Organization (FAO).[13] Some States have followed suit,[14] although practices and standards vary.[15] An example of a comprehensive impact assessment used in the fisheries sector is the integrated fishery assessment systems, which analyses the performance and effectiveness of a system used for managing wild capture fishery, taking into consideration the social, cultural and economic impacts of fishing.[16]

In this article, we also argue that integrated environmental socio-cultural assessments should be required and applied to planned and existing large-scale industrial fisheries projects which may cause significant impacts on the environment and on communities, as well as to relevant policies, plans and programmes, in accordance with international legal requirements for EIA and SEAs. After discussing current practices of impact assessments more generally (Section 2), and explaining the potential and actual environmental, social and cultural impacts caused by large-scale industrial fisheries (Section 3),[17] we argue that an international duty to carry out integrated environmental socio-cultural assessments for large-scale industrial fisheries is grounded in a mutually supportive interpretation of complementary provisions under the UN Convention on the Law of the Sea (LOSC),[18] the UN Fish Stocks Agreement (UNFSA),[19] the Convention on Biological Diversity (CBD),[20] international human rights treaties and international guidance adopted under the auspices of the FAO and CBD (Section 4). We conclude by stressing the need for States to comply with their EIA and SEA duties, by further legislating on integrated environmental socio-cultural assessments for large-scale industrial fisheries (Section 5).

[4]A contemporary understanding of SEA sees this type of assessment as a system, composed of approaches which aim to support environmentally sustainable strategies, drafting of policy, preparation of plans and programmes, creation of coherent and consensus-based action, systematization of policies, plans and programmes, and the employment of specific techniques. See TB Fischer and A González, 'Introduction to Handbook on Strategic Environmental Assessment' in TB Fischer and A González, *Handbook on Strategic Environmental Assessment* (Edward Elgar 2021) 6.

[5]S Jennings and AS Revill, 'The Role of Gear Technologists in Supporting an Ecosystem Approach to Fisheries' (2007) 64 ICES Journal of Marine Science 1525, 1531 and 1534. See also G Sander, 'International Legal Obligations for Environmental Impact Assessment and Strategic Environmental Assessment in the Arctic Ocean' (2016) 31 International Journal of Marine and Coastal Law 88, 115.

[6]As explained in Section 3.

[7]UNEP (n 1) 2.

[8]See, e.g., FAO, Legislating for an Ecosystem Approach to Fisheries – Revisited: An Update of the 2011 Legal Study (FAO 2021); D Diz, *Fisheries Management in Areas beyond National Jurisdiction: The Impact of Ecosystem-based Law-making* (Martinus Nijhoff 2013); TJ Pitcher et al, 'An Evaluation of Progress in Implementing Ecosystem-based Management of Fisheries in 33 Countries' (2009) 33 Marine Policy 223; S Jennings et al, 'The Ecosystem Approach to Fisheries: Management at the Dynamic Interface between Biodiversity Conservation and Sustainable Use' (2014) 1322 Annals of the New York Academy of Sciences 48.

[9]C Engler, 'Transboundary Fisheries, Climate Change, and the Ecosystem Approach: Taking Stock of the International Law and Policy Seascape' (2020) 25 Ecology and Society 43; WWL Cheung et al, 'Modelling Future Oceans: The Present and Emerging Future of Fish Stocks and Fisheries' in R Caddell and E Molenaar (eds), *Strengthening Fisheries Law in an Era of Changing Oceans* (Hart 2019) 13; R Selden and M Pinsky, 'Climate Change Adaptation and Spatial Fisheries Management' in AM Cisneros-Montemayor, WWL Cheung and Y Ota (eds), *Predicting Future Oceans: Sustainability of Ocean and Human Systems Amidst Global Environmental Change* (Elsevier 2019) 207.

[10]E Morgera and J Nakamura, 'Shedding a Light on the Human Rights of Small-Scale Fishers: Complementarities and Contrasts between the UNDROP and the Small-Scale Fisheries Guidelines' in M Alabrese et al, *The United Nations' Declaration on Peasants' Rights* (Routledge 2022) 62; AM Song and A Soliman, 'Situating Human Rights in the Context of Fishing Rights: Contributions and Contradictions' (2019) 103 Marine Policy 19; S Kirchner, 'Human Rights and Fishing: A Multidimensional Challenge' (2019) 12 Baltic Journal of Law and Politics 155.

[11]Including the Northwest Atlantic Fisheries Organization (NAFO), Southern Indian Ocean Fisheries Agreement (SIOFA) and the South Pacific Regional Fisheries Management Organization (SPRFMO).

[12]UNGA 'Sustainable Fisheries, including through the 1995 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, and Related Instruments' UN Doc A/RES/61/105 (6 March 2007); UNGA 'Sustainable Fisheries, … and Related Instruments' UN Doc A/RES/64/72 (19 March 2010), UNGA 'Sustainable Fisheries, … and Related Instruments' UN Doc A/RES/66/68 (28 March 2012), UNGA 'Sustainable Fisheries, … and Related Instruments' UN Doc A/RES/71/123 (13 February 2017).

[13]FAO, 'International Guidelines for the Management of Deep-Sea Fisheries in the High Seas' (FAO 2008).

[14]For instance, Canada has developed policies and guidance to avoid impacts on VMEs under the *Fisheries Act* (2019). See Fisheries and Oceans Canada (DFO), 'Ecological Risk Assessment Framework (ERAF) for Coldwater Corals and Sponge Dominated Communities' (DFO 2019) (https://waves-vagues.dfo-mpo.gc.ca/Library/40585347.pdf).

[15]See, e.g., RB Pollnac, SAJ and C Smith, 'Toward a Model for Fisheries Social Impact Assessment' (2006) 68 Marine Fisheries Review 18; LL Colburn and M Jepson, 'Social Indicators of Gentrification Pressures in Fishing Communities: A Context for Social Impact Assessment' (2012) 40 Coastal Management 300.

[16]D Leadbitter and TJ Ward, 'An Evaluation of Systems for the Integrated Assessment of Capture Fisheries' (2007) 31 Marine Policy 458, 459 and 465. Rapfish is another appraisal technique that was developed in the late 1990s and early 2000s and has been used in evaluating sustainability in both small-scale and industrial fisheries on the basis of six evaluation fields (ecological, technological, economic, social, ethical and institutional dimensions, each covering a range of attributes). Diverse stakeholders may operate Rapfish to make policy trade-offs explicit and enhance transparency in fisheries management. See TJ Pitcher et al, 'Improvements to Rapfish: A Rapid Evaluation Technique for Fisheries Integrating Ecological and Human Dimensions' (2013) 83 Journal of Fish Biology 865, 866–867, 872–874 and 878.

[17]As documented in, e.g. UNGA 'Sustainable Fisheries … and Related Instruments' UN Doc A/RES/76/71 (17 December 2021).

[18]United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1883 UNTS 397 (LOSC).

[19]Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 December 1995, entered into force on 11 December 2001) 2167 UNTS 3 (UNFSA).

[20]Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79 (CBD).

2 | IMPACT ASSESSMENT PRACTICES

The International Association for Impact Assessment (IAIA) defines an impact assessment as 'the process of identifying the future consequences of a current or proposed action'.[21] This includes the EIA as a 'process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made'.[22] In other words, an EIA is a comprehensive assessment of potential environmental impacts with a view to supporting well-informed decision-making on a proposed activity.[23] While an EIA seeks to inform planning decisions on projects and undertakings susceptible of causing significant environmental impact, the SEA aims at integrating environmental considerations into the preparation of policies, plans and programmes—during an earlier and higher level, strategic phase of decision-making.[24] The CBD is currently the only treaty providing for both EIAs[25] and SEAs.[26]

Despite its widespread recognition, the inadequate coverage by EIA of all potential impacts of a project has led practitioners to develop other types of assessments,[27] such as the social impact assessment (SIA). SIAs may be part of an EIA process or involve a stand-alone process for examining, monitoring and managing *social* issues associated with planned interventions and development in general.[28] SIAs emerged in the same period as EIAs, in the early 1970s, but they have played a marginal role in the planning of projects with little national legislation requiring it explicitly.[29] In addition, SIAs have been criticized for their limited coverage, in particular from a human rights perspective,[30] notably in relation to forced evictions and human trafficking and its inability to guarantee corporate responsibility and access to justice.[31] These matters are expected to be more appropriately covered by a human rights impact assessment (HRIA),[32] which identifies and measures the effects of policies, legislation, programmes and projects on *human rights*.[33] HRIAs rely on normative and moral elements of international human rights law to, inter alia, reinforce a cross-sectoral approach on all civil, political, economic, social and cultural rights.[34] This assessment has emerged in response to the demands on transnational corporations and other business enterprises to prevent human rights violations within their areas of influence.[35] Whereas EIAs and SIAs are usually *ex-ante* tools, HRIAs often occur at an *ex-post* stage and are used most frequently by government agencies as a stand-alone assessment.[36] That said, an EIA can also be carried out after the large-scale industrial fisheries sector or undertaking is established, serving to assess processes of monitoring, evaluation and reform of the sector, as well as processes of fishing licences' renewal and new fisheries' exploitation.

Scholars have noted the importance of giving due account to the social, political and cultural context and traditions in EIA processes, especially with respect to public participation.[37] The impacts on *culture* in a given location or group were considered insufficiently addressed.[38] These concerns led practitioners to advance cultural impact assessments of policies and development activities,[39] as a complement to, or a sub-component of, EIAs and SIAs.[40] The close connection between these three types of assessments (i.e. SIAs, HRBAs and cultural impact assessments) has been explored by the CBD parties,[41] which, as explained further below, developed by consensus international guidelines on how to conduct impact assessments that take due account of biodiversity, social and cultural dimensions.

When different impact assessment processes are used in silos, issues of overlapping or missing information are likely to occur, and the socio-ecological linkages may not be appropriately addressed.[42] In

[21]IAIA, 'What is Impact Assessment?' (2009) (http://www.iaia.org/uploads/pdf/What_is_IA_web.pdf).

[22]ibid. See also UNEP (n 1) and Morgan's review of the developments in EIA, from its inceptive legislative form in the United States (US) National Environmental Protection Act 1970 until the early 2010s. RK Morgan, 'Environmental Impact Assessment: The State of the Art' (2012) 30 Impact Assessment and Project Appraisal 5, 6 and 14.

[23]UNEP (n 1) 3.

[24]MF Tetlow and M Hanusch, 'Strategic Environmental Assessment: The State of the Art' (2012) 30 Impact Assessment and Project Appraisal 15, 15–16 and 24.

[25]CBD (n 20) art 14(a) requires each party to, as far as possible and as appropriate, '[i] ntroduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse impacts on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures'.

[26]CBD (n 20) art 14(b) requires each party to, as far as possible and as appropriate, '[i] ntroduce appropriate arrangements to ensure that the environmental consequences of its programmes and policies that are likely to have significant adverse impacts on biological diversity are duty taken into account'.

[27]Morgan (n 22) 7.

[28]AM Esteves, D Franks and F Vanclay, 'Social Impact Assessment: The State of the Art' (2012) 30 Impact Assessment and Project Appraisal 34, 34–35 and 42.

[29]Examples of SIA being part of planning process were identified in 'Queensland, Australia, where project developers are required to submit a social impact management plan (SIMP) as part of their environmental impact statement as part of their environmental impact statement; South Africa, where social and labor plans (SLP) were introduced in 2004 specifically for mining project; the Philippines, were similar social management processes are in place for mining projects'. See B Dendena and S Corsi, 'The Environmental and Social Impact Assessment: A Further Step towards an Integrated Assessment Process' (2015) 108 Journal of Cleaner Production 965, 968 and 977.

[30]Though the respect for human rights is considered as a fundamental principle by the SIA community. Principle 1 of the International Principles for Social Impact Assessments adopted by the IAIA. See F Vanclay, 'International Principles For Social Impact Assessment' (2012) 21 Impact Assessment and Project Appraisal 5, 9 and 11.

[31]Further details on the developments of the SIA and HRIA are provided in Esteves et al (n 28) 38.

[32]For a critique on the use of HRIA for business projects and activities, which do not adequately take into account transparency principles, see J Harrison, 'The Use of Impact Assessments by Governments and Businesses: Questioning Purpose and Utility' in N Götzmann (ed) *Handbook on Human Rights Impact Assessment* (Edward Elgar 2019) 424.

[33]Nordic Trust Fund and The World Bank, 'Study on Human Rights Impact Assessments: A Review of the Literature, Differences with other Forms of Assessments and Relevance for Development' (Nordic Trust Fund and World Bank, 2013) ix–x.

[34]ibid 8.

[35]ibid 5.

[36]ibid 9.

[37]Morgan (n 22) 8.

[38]A Partal and K Dunphy, 'Cultural Impact Assessment: A Systematic Literature Review of Current Methods and Practices around the World' (2016) 34 Impact Assessment and Project Appraisal 1.

[39]ibid.

[40]ibid 7.

[41]CBD (n 20).

[42]Rajaram and Das evaluate the use of EIA in developing countries, particularly in India. They question how governments may give priority to environmental issues through the requirement of EIAs—which are usually not conducted in a transparent and participatory process—while poverty remains a critical problem to be addressed there. The authors propose a 'social-ecological linkage document' that covers marginalized groups and the linkages they have with ecosystems and ecosystem services, the local ecological knowledge and development priorities of the affected region. See T Rajaram and A Das, 'Sustainable Frugality through EIA: Role of Socio-ecological Linkages in Poverty Alleviation' (2007) 18 Management of Environmental Quality: An International Journal 556.

view of political challenges and practical constraints, proposals for integrated environmental and socio-cultural impact assessments have emerged, with a view to providing a comprehensive evaluation of alternatives and appropriate mitigation, management and monitoring measures.[43] Integrated assessments, however, remain at the inception phase and have not been thoroughly theorized, although they are being increasingly used by multilateral donors, international agencies and private lending institutions.[44]

3 | SITUATING THE LARGE-SCALE INDUSTRIAL FISHERIES SECTOR AND ITS POTENTIAL AND ACTUAL SIGNIFICANT ADVERSE IMPACTS

3.1 | A differentiated sector within fisheries

The fisheries industry involves a range of operations, including pre-harvesting activities of fishing gears making, capture fisheries in both inland and marine waters, post-harvesting activities of processing, marketing and trading. Capture fisheries at sea include small-scale and large-scale operations.[45] It is difficult to set a clear boundary between the two, as their definitions vary by country.[46] The large-scale industrial fisheries sector generally uses big vessels, with substantive fishing capacity, sophisticated active fishing gears that employ a high degree of technology and capital investments, and operates at an industrial scale exclusively for commercial purposes, in coastal, long-distant, as well as deep-sea waters, including the high seas and third-countries' waters.[47] In turn, the so-called 'small-scale fisheries' sector operates primarily for subsistence and local markets, near the shore, without any equipment, or using small artisanal fishing boats or canoes, either non-motorized or with low motor power, and employing handmade or simple passive fishing gears, with zero or low mechanization and financial investment.[48]

The small-scale fisheries' sector is huge in terms of the number of people formally and informally involved, the variety of fishing vessels used and the sector's contribution to food security, nutrition and poverty alleviation in rural and coastal communities.[49] While the high dependency on fishing for subsistence has resulted in unsustainable practices in small-scale fisheries,[50] its environmental impacts are difficult to determine due to the wide diversity of fishing gears deployed. These are generally known to be passive,[51] thus less harmful than those used by the large-scale industrial fisheries sector. The environmental impacts caused by a small-scale fishing boat are minimal if compared to a large-scale industrial fishing ship, which can cause significant impact on the environment through a range of factors, as seen next.

3.2 | Profit maximization

The objective of large-scale industrial fisheries operations is to maximize the profit of fish sold at an industrial commercial scale, including at the cost of unsustainable and harmful practices. This sector contributes to an estimated three-fourths of global capture fisheries,[52] occupying one third of the world's geographical seascape.[53] It is a commercial activity that aims to supply markets in-country and abroad, operating fleets in coastal States' waters, high seas, and third-countries' waters.[54] Large-scale industrial fisheries use big vessels and factory fishing ships, which can spend long periods at sea, fishing and processing fish, searching for sites with greater abundance of fish, with an extensive fishing capacity that can retain a large number of catches and increase profits.[55]

[43]See Business and Biodiversity Offsets Programme (BBOP), 'Glossary' (BBOP 2012) 17.
[44]See Dendena and Corsi (n 29) 969–974. As identified by Dendena and Corsi, the World Bank and the International Finance Corporation have adopted environmental and social performance standards for projects. However, the application of those standards was based on a separate evaluation of social and environmental issues. An integrated approach of these elements became more relevant through the adoption of the Equator Principles (https://equator-principles.com). At the regional level, for instance, the African Development Bank has adopted an Environmental and Social Assessment Procedure for public sectors operators and its own Integrated Environmental Social Impact Assessment Guidelines. The 2014 European Union EIA Directive is another instrument addressing the social and socioeconomic dynamics affected by development projects.
[45]This division was portrayed decades ago by Thompson, which separated the 'marine fisheries of the world' into the two distinct sectors: the deep-sea or commercial fisheries, representing 'owned large-investment fishing units', and the inshore or artisanal fisheries, constituting of 'chiefly privately owned or privately-managed small-scale units'. See D Thomson, 'Conflict within the Fishing Industry' (1980) 3 ICLARM Newsletter 3.
[46]See references to other attempts of delineating the scope of these fisheries subsectors: H Smith and X Basurto, Defining Small-Scale Fisheries and Examining the Role of Science in Shaping Perceptions of Who and What Counts: A Systematic Review (2019) 6 Frontiers in Marine Science 1; LMA Damasio et al, 'Size Matters: Fishing Less and Yielding More in Smaller-scale Fisheries' (2016) 73 ICES Journal of Marine Science 1494, 1495 and 1502.
[47]Though small-scale fisheries have attracted more debates on their definition, due to their complex, multicultural, dynamic and heterogeneous features, large-scale fisheries also faces this problem of unclear boundary definition. See World Fisheries Trust, 'Industrial Fishery – Fishing Methods Card' (2008) http://www.worldfish.org/GCI/gci_assets_moz/Fact%20Card%20-%20Industrial%20Fishery.pdf.
[48]The international community has not agreed upon a definition of 'small-scale fisheries' and due to the difficulties in defining such a diverse, complex and heterogeneous sector, it has been suggested that a flexible definition would be most appropriate. See R Chuenpagdee and S Jentoft, 'Transforming the Governance of Small-scale Fisheries' (2018) 17 Maritime Studies 101, 106.
[49]An ongoing global study titled 'Illuminating Hidden Harvests' is being developed to compile data on small-scale fisheries around the world, but the big numbers in small-scale fisheries have been identified in previous studies, pointing to more than 90% of the marine fisheries workforce as being small-scale, and about 81% of motorized fishing vessels as having a length overall of less than 12 m. See FAO (n 3) 151.
[50]R Pomeroy, 'Managing Overcapacity in Small-scale Fisheries' in R Pomeroy and N Andrew (eds), *Small-scale Fisheries Management: Frameworks and Approaches for the Developing World* (CABI 2011) 75.
[51]The environmental impacts of small-scale fisheries also largely vary by locality. In Europe and northern countries, they are known for performing low-impact fishing. See MH Autzen and TJ Hegland, 'When "Sustainability" Becomes the Norm: Power Dynamics in the Making of a New Eco-label for Low-Environmental-Impact, Small-scale Fisheries' (2021) 133 Marine Policy 104742; A Said et al, 'Small-scale Fisheries Access to Fishing Opportunities in the European Union: Is the Common Fisheries Policy the Right to SDG14b?' (2020) 118 Marine Policy 104009.
[52]This is based on reconstructed catch data elaborated with a combination of the data reported to the FAO with estimates of unreported data that takes into account disaggregated statistics of large-scale and small-scale fisheries. See D Pauly and D Zeller, 'Catch Reconstructions Reveal that Global Marine Fisheries Catches Are Higher than Reported and Declining' (2016) 7 Nature Communications 10244, 3–5.
[53]S Gibbens, 'Industrial Fishing Occupies a Third of the Planet' (2018) (https://www.nationalgeographic.com/science/article/global-industrial-fishing-footprint-spd).
[54]Pauly and Zeller (n 52) 2.
[55]Damasio et al (n 46) 1498.

The large-scale industrial fishing industry receives significant amounts of financial support from governments.[56] Fisheries subsidies have historically helped this sector enhance its fishing capacity through the purchase of modernized vessels, engines, machinery, equipment, fuel and access to other countries' exclusive economic zones (EEZ), among other benefits.[57] Consequently, the large-scale industrial fisheries sector's enhanced fishing capacity has been an underlying factor contributing to overfishing.[58] With greater pressure on target stocks, which are fished beyond the maximum sustainable yields,[59] negative impacts are also caused on other stocks, species, habitats, ecosystems and biodiversity, either due to their dependency on the target stocks or incidental harm.[60]

Moreover, large-scale industrial fishing fleets operate in long-distant waters, the high seas and deep waters.[61] In these contexts, a range of environmental problems have been identified, not limited to: overexploitation of highly migratory species that move between high seas and EEZs,[62] harm to VMEs,[63] depletion of species and bycatch. Stocks depletion, in turn, occasionally leads to levels of critical endangerment regionally.[64]

Large-scale industrial fishing by developed countries in the marine waters of developing countries has raised additional concerns regarding the impact that fishing access agreements have on third-countries' local fisheries, especially small-scale fisheries.[65] Fishing access agreements between the European Union and African, Caribbean and Pacific countries, for example, have caused negative impacts on the hosting countries' fisheries at both national and local levels.[66] Another social issue deriving from large-scale industrial fisheries is that the depletion of fish stocks results in a 'decline in *per capita* seafood availability',[67] contributing to food insecurity, particularly seafood insecurity worldwide, and aggravating nutritional deficiencies because of the lack of sufficient protein and essential seafood nutrients.[68] These issues affect both developed and developing countries, especially those with a large number of people dependent on aquatic resources and small-scale fishing communities that are cash-reliant on fisheries.[69] Additionally, profit maximization of the large-scale industrial fisheries sector results in non-compliance with environmental and human rights rules,[70] in terms of, inter alia: misreporting or underreporting of catch data, revenues, tax and fees to the competent authorities; corrupting fisheries officials and enforcement agents to avoid penalties for fishing in prohibited fishing grounds or fishing protected species; and modern slavery and unfairly low labour costs.[71]

3.3 | Unsustainable technologies and practices

The large-scale industrial fisheries sector is supported by voluminous capital investment that supply the modern technology deployed in highly motorized fishing fleets and sophisticated fishing gears, including industrial trawlers (bottom and pelagic ones), longlines, purse seines and gillnets.[72] Large-scale fishing vessels and factory fishing ships with powerful propulsion systems and intense high fuel cause significant impacts on the marine environment.[73] They potentially emit more than 130 million tonnes of carbon dioxide,[74] thereby contributing to ocean acidification and aggravating the impacts of climate change.[75] Fishing vessels in general have recently accounted for large emissions of black carbon, which contribute to global warming.[76]

As technology advances, the size and power of fishing boats augment without care for environmentally friendly approaches, such as through the use of super-trawlers with propulsive engines of over 10,000 hp.[77] The large-scale industrial fisheries sector may also operate, particularly on the high seas, with the support of bunkers or tankers for refuelling of fishing vessels, as well as reefers or refrigerated cargo ships and other transport vessels used for transshipment.[78] These structures are powered by different types of fossil fuels, including marine diesel oil,[79] four-cycle diesel engines generating nitrogen

[56]About three and a half times more is received by a fisher in large-scale industrial fisheries than in small-scale fisheries, and two times more per dollar landed in large-scale fisheries than in small-scale fisheries. See A Schuhbauer et al, 'The Global Fisheries Subsidies Divide Between Small- and Large-Scale Fisheries' (2020) 7 Frontiers in Marine Science 1.

[57]A Tipping, 'Building on Progress in Fisheries Subsidies Disciplines' (2016) 69 Marine Policy 202; C Finley, *All the Boats on the Ocean: How Government Subsidies Led to Overfishing* (University of Chicago Press 2017).

[58]Tipping (n 57); UNEP, 'Fisheries Subsidies, Sustainable Development and the WTO' (UNEP 2011).

[59]Overfishing refers to the 'stock abundance fished to below the level than can produce maximum sustainable yield'. See FAO (n 3) 55; TD Davies and JK Baum, 'Reconciling Conservation and Fisheries Perspectives on the Status of Marine Fishes' (2012) 2 Scientific Reports 1.

[60]NK Dulvy, 'Overfishing Drives over One-Third of All Sharks and Rays toward a Global Extinction Crisis' (2021) 31 Current Biology 4,773; M Coll et al, 'Ecosystem Overfishing in the Ocean' (2008) 3 PLoS ONE 1; B Worm et al, 'Impacts on Biodiversity Loss on Ocean Ecosystem Services' (2006) 314 Science 787; JBC Jackson et al, 'Historical Overfishing and Recent Collapse of Coastal Ecosystems' (2001) 293 Science 629.

[61]See a recent study focused on the analysis of industrial fishing: DJ McCauley et al, 'Wealthy Countries Dominate Industrial Fishing' (2018) 4 Science Advances 1, 9.

[62]E Sala et al, 'The Economics of Fishing the High Seas' (2018) 4 Science Advances 13.

[63]Such as cold water corals and sponges. See J Porobic et al, 'The Impact of Fishing on a Highly Vulnerable Ecosystem, the Case of Juan Fernández Ridge Ecosystem' (2019) 14 PLoS ONE 1. Pauly and Zeller (n 52) 1.

[64]AD Rogers, 'Threats to Seamount Ecosystems and Their Management' in C Sheppard (ed), *World Seas: An Environmental Evaluation*, vol III (2nd edn, Elsevier 2018) 427, 431 and 436.

[65]W Swartz et al, 'Sourcing Seafood for the Three Major Markets: The EU, Japan and the USA' (2010) 34 Marine Policy 1366, 1367 and 1373.

[66]N van der Burgt, *The Contribution of International Fisheries Law to Human Development: An Analysis of Multilateral and ACP-EU Fisheries Instruments* (Brill/Nijhoff 2012) 333–334.

[67]Pauly and Zeller (n 52) 5.

[68]McCauley et al (n 61) 1.

[69]See C Béné, B Hersoug and EH Allison, 'Not by Rent Alone: Analysing the Pro-Poor Functions of Small-Scale Fisheries in Developing Countries' (2010) 28 Development Policy Review 325, 344–346.

[70]For more scientific references on serious problems associated with modern commercial fisheries, including inadequate data and poor compliance, see TJ Pitcher and ME Lam, 'Fishful Thinking: Rhetoric, Reality, and the Sea Before Us' (2010) 15 Ecology and Society 1, 27.

[71]Sala et al (n 62).

[72]A recent study identified the types of fishing gear used by each sector. Small-scale fisheries are characterized as using nets (bag or cast ones), own human-force (hand collection, diving, harpoons), encircling nets, gillnets, lines, pots or traps, seines (beach or boat ones) and others. See T Cashion et al, 'Reconstructing Global Marine Fishing Gear Use: Catches and Landed Values by Gear Type and Sector' (2018) 206 Fisheries Research 57, 57–59.

[73]ibid 57.

[74]PH Tyedmers, R Watson and D Pauly, 'Fueling Global Fishing Fleets' (2005) 34 Ambio 635. See also RWR Parker and PH Tyedmers, 'Fuel Consumption of Global Fishing Fleets: Current Understanding and Knowledge Gaps' (2015) 16 Fish and Fisheries 684.

[75]B Haas et al, 'Big Fishing: The Role of the Large-scale Commercial Fishing Industry in Achieving Sustainable Development Goal 14' (2019) 29 Reviews in Fish Biology and Fisheries 161, 165–166.

[76]B McKulin and JE Campbell, 'Emissions and Climate Forcing from Global and Arctic Fishing Vessels' (2016) 121 Journal of Geophysical Research Atmospheres 1844.

[77]PH Tyedmers, 'Fisheries and Energy Use' (2004) 2 Encyclopedia of Energy 683, 686.

[78]Sala et al (n 62) 1; AM Cabanelas et al, 'Transshipment: A Closer Look' (FAO 2020) 6.

[79]ibid 9.

oxide emissions,[80] all of which add more stresses to the marine environment and intensify climate change.[81] While the infrastructure is needed to avoid multiple travels to port, the offshore location of these supporting facilities complicate the effective flag States' monitoring, control, surveillance and enforcement of applicable rules. This creates opportunities for large-scale industrial fishing vessels to continuously (over)fish in distant waters, launder catches from illegal, unreported and unregulated (IUU) fishing in transshipment operations,[82] and surpass safe and decent working conditions for the crew, who can spend months at sea without appropriate support.[83]

It has been noted that active gears such as seine nets, trawl net fragments and fish aggregating devices used in purse seine, though less problematic than passive fishing gears, have led to unaccounted mortality of fishery resources, marine megafauna and other species by ghost fishing.[84] These derelict fishing gears can also modify microhabitats and create anoxic areas respectively with the obstruction of reef crevices and water flow.[85] All these forms of waste contribute to the damage of seamount-associated species by entanglement and abrasion.[86] The dumping of processing waste from trawlers sinking to the seabed may also potentially affect the sea bottom and its ecosystems with oxygen depletion.[87]

With the use of more technologically evolved fishing gears, the large-scale industrial fishing fleet is capable and prone to catching more (both in terms of quantity and type of species), travelling for longer periods, fishing in farther distant waters and greater depths, thereby adding a range of multiple stresses to the fishery resources and ecosystems across all maritime zones.[88] Fishing gears negatively affect the sea bottom by 'scraping and ploughing; sediment resuspension; and physical destruction, removal, or scattering of non-target benthos'.[89] This represents the largest threat and impact to seamounts, which are rich in biodiversity, attract various pelagic species,[90] and may cause harm to fragile habitats such as deep-sea coral reefs.[91] Increased concerns from the international community on the impacts of bottom fishing on VMEs on the high seas has resulted in the adoption of minimum standards by the UN General Assembly[92] and the FAO, including on criteria for impact assessments.[93]

The unintended bycatch or harvesting of non-targeted species, while difficult to estimate due to ineffective or uncertain fisheries monitoring and reporting systems,[94] has severely affected marine mammals by over 600,000 per year.[95] In addition to being killed or dramatically injured, these animals suffer from stress and wellbeing reduction, often being separated from their relatives or, in the case of female mammals, suffering spontaneous abortions.[96] Fishing gears used in large-scale industrial fisheries also impact the fish welfare causing pressure injuries and mortality, with higher frequency of scale, skin, fin and pressure injuries in trawls, purse seines, seines and gillnets.[97] Mortality of fish caught by the former three is generally higher with more external injuries, and the higher mortality occurs from greater capture depth and longer fishing duration.[98] The significance of these impacts on habitats and species, including associated species, may vary in accordance with the resilience of ecosystems and their exposure to large-scale industrial fishing gears and technologies.[99]

3.4 | Capital concentration

The financial investments deployed and the returns arising from the expensive large fleets, supporting facilities, fishing gears and technology used in large-scale industrial fisheries are mostly concentrated in the hands of few with the capital, knowledge and capacity to operate them.[100] It is therefore not a surprise that most large-scale industrial fishing on the high seas are under the control of few wealthy nations,[101] whereas the majority of the workforce in small-scale fisheries is located in low-income developing countries.[102] Large-scale industrial fisheries operations are not accessible nor suitable to all fishers, which may be a reason for the significantly lower job availability in this sector in comparison to small-scale fisheries.[103] This means that the revenue generated by large-scale industrial fisheries, more than the double

[80]R Latorre, 'Reducing Fishing Vessel Fuel Consumption and NOX Emissions' (2001) 28 Ocean Engineering 733.
[81]Tyedmers et al (n 74) 638.
[82]C Ewell et al, 'Potential Ecological and Social Benefits of a Moratorium on Transshipment on the High Seas' (2017) 81 Marine Policy 293.
[83]D Tickler et al, 'Modern Slavery and the Race to Fish' (2018) 9 Nature Communications 1, 2.
[84]E Gilman, 'Status of International Monitoring and Management of Abandoned and Discarded Fishing Gear and Ghost Fishing' (2015) 60 Marine Policy 225, 227.
[85]ibid 227.
[86]Rogers (n 64) 436.
[87]JB Jones, 'Environmental Impact of Trawling on the Seabed: A Review' (1992) 26 New Zealand Journal of Marine and Freshwater Research 59, 61–62.
[88]Pitcher and Lam (n 70) 4.
[89]Jones (n 87) 61.
[90]Rogers (n 64) 431.
[91]Sala et al (n 62).
[92]See all UNGA resolutions (n 12).
[93]FAO (n 13) para 47.

[94]Monitoring depends on the availability and work of observers on board fishing vessels, while reporting relies on comprehensive and accurate documentation. Researchers have developed different assessment methods to better understand bycatch levels and spatial patterns, but accurate estimates remain difficult to obtain. See LK Komoroske and RL Lewison, 'Addressing Fisheries Bycatch in a Changing World' (2015) 2 Frontiers in Marine Science 1.
[95]Due to the challenges in obtaining bycatch data, estimates rely on data from the 1990s. See AJ De Vere, MK Lilley and EE Frick, 'Anthropogenic Impacts on the Welfare of Wild Marine Mammals' (2018) 44 Aquatic Mammals 150, 157.
[96]ibid.
[97]LJL Veldhuizen et al, 'Fish Welfare in Capture Fisheries: A Review of Injuries and Mortality' (2018) 204 Fisheries Research 41, 43.
[98]ibid 44–46.
[99]AJ Kenny et al, 'Delivering Sustainable Fisheries through Adoption of a Risk-based Framework as Part of an Ecosystem Approach to Fisheries Management' (2018) 93 Marine Policy 232, 237.
[100]Damasio et al (n 46) 1499.
[101]See McCauley et al (n 61) 1.
[102]This estimation is from 2012 and is currently being revisited and updated by the FAO, World Fish and Duke University with a view to providing more accurate information on the contribution of small-scale fisheries to the world capture fisheries. See World Bank, 'Hidden Harvest: The Global Contribution of Capture Fisheries' (World Bank 2012).
[103]FAO (n 3) 151–153.

generated by small-scale fisheries,[104] benefits only a limited number of fisheries managers, contributing to social conflicts and unfair competition.[105] As a consequence of the capital concentration in the hands of few and the 'race to fish', costs are cut from investments in occupational health, decent labour and safety, often creating deplorable and even slave-like working conditions for fishworkers.[106]

The inequitable distribution of capital and benefits arising from the exploitation of fish poses a greater burden on small-scale fishing communities, for whom fish and fishing are part of their social and cultural identity and cultural heritage.[107] As blue growth/economy initiatives advance, favouring further large-scale and unsustainable undertakings in the ocean,[108] the need to reserve special areas for small-scale fisheries to protect them from the negative impacts of large-scale industrial fisheries and other sectors has been deemed crucial.[109] The poor or lack of adequate and meaningful consultation with the coastal communities affected by the blue economy, in which the large-scale industrial fisheries sector is a player, have led to multi-scale injustices as well.[110]

Historically, large-scale industrial fishing fleets owners and operators have taken advantage of flags of convenience to minimize and avoid tax payments, as well as circumvent agreed and regulated fishing quotas.[111] Large-scale industrial fisheries have preferential access to subsidies, as governments usually favour them over small-scale fisheries, which are left with less financial and commodity returns.[112] Fisheries subsidies are sought to be essential for the profitability of more than half of high-seas large-scale industrial fisheries.[113] With the Fisheries Subsidies Agreement recently adopted under the auspices of the World Trade Organization, States have committed not to grant nor maintain fisheries subsidies to fishing overfished stocks, but it remains to be seen whether this will effectively contribute to diminish the environmental, social and cultural impacts of the large-scale industrial fisheries sector.[114]

4 | INTERNATIONAL LEGAL BASIS FOR THE DUTY TO CARRY OUT ENVIRONMENTAL IMPACT ASSESSMENTS

Based on the multiple environmental, socio-economic and cultural impacts of large-scale industrial fisheries, we proceed with analysing the relevance of general international law. Conducting an EIA for proposed activities with potential to cause significant transboundary environmental harm[115] is an obligation of States parties to multilateral treaties,[116] and has been recognized as customary international law by international courts.[117] The International Court of Justice (ICJ) also clarified that, if the EIA confirms such risk, the State concerned has the *due diligence* obligation to 'notify and consult in good faith with the potentially affected State, where that is necessary to determine the appropriate measures to prevent or mitigate that risk'.[118] The ICJ indicated that the precise content and process of an EIA is a matter left to the State's discretion,[119] which may explain why States are not clear about the need to include large-scale industrial fisheries that can cause transboundary harm, including harm to biodiversity,[120] into their EIA procedures. As discussed below, however, CBD parties have adopted, by consensus, guidelines to clarify these points, and further interpretative guidance has been elaborated under the aegis of the FAO.

While we have demonstrated in the previous section that large-scale industrial fisheries cause *significant* or *serious* transboundary environmental harm,[121] it is also helpful to refer to Craik's argument that the international duty to cooperate in preventing environmental harm implies the duty of States to pursue information, data and sources to determine the existence of risk of significant harm arising from a given activity.[122] In dealing with transboundary fisheries, the assessment of significant environmental risks of large-scale industrial fisheries and their impacts on those fisheries could be conducted by the UNFSA parties in respect of new fisheries.[123] Additionally, the duty to collect and exchange scientific, technical and statistical data

[104]See McCauley et al (n 61) 1.
[105]R Pomeroy et al, 'Drivers and Impacts of Fisheries Scarcity, Competition, and Conflict on Maritime Security' (2016) 67 Marine Policy 104.
[106]Tickler et al (n 83); AJG Lozano et al, 'Decent Work in Fisheries: Current Trends and Key Considerations for Future Research and Policy' (2022) 136 Marine Policy 104922.
[107]R Chuenpagdee and S Jentoft, 'Small-Scale Fisheries: Too Important to Fail' in International Ocean Institute - Canada (ed), *The Future of Ocean Governance and Capacity Development: Essays in Honour of Elizabeth Mann Borgese (1918–2002)* (Brill 2019) 349.
[108]HJ Niner et al, 'Issues of Context, Capacity and Scale: Essential Conditions and Missing Links for a Sustainable Blue Economy' (2022) 130 Environmental Science and Policy 25.
[109]S Jentoft et al, *Blue Justice: Small-Scale Fisheries in a Sustainable Ocean Economy* (Springer 2022) v.
[110]ibid.
[111]L Campling and A Colás, 'Capitalism and the Sea: Sovereignty, Territory and Appropriation in the Global Ocean' (2018) 36 Environment and Planning D: Society and Space 776.
[112]A Schuhbauer et al, 'The Global Fisheries Subsidies Divide Between Small- and Large-Scale Fisheries' (2020) 7 Frontiers in Marine Science 1. See also Damasio et al (n 46) 1498.
[113]Sala et al (n 62) 2–3.
[114]For an analysis of the Agreement's key aspects and unfinished matters, see S Switzer and M Lennan, 'The WTO's Agreement on Fisheries Subsidies. It's Good, but It's not Quite Right' (https://oneoceanhub.org/the-wtos-agreement-on-fisheries-subsidies-its-good-but-its-not-quite-right/).

[115]Rio Declaration on Environment and Development in 'Report of the United Nations Conference on Environment and Development' UN Doc A/CONF.151/26 (vol I) (12 August 1992) Principle 17. See N Craik, 'Principle 17: Environmental Impact Assessment' in J Viñuales (ed), *The Rio Declaration on Environment and Development: A Commentary* (Oxford University Press 2015) 451.
[116]Convention on Environmental Impact Assessment in a Transboundary Context (adopted 25 February 1991, entered into force on 10 September 1997) 1989 UNTS 389 (Espoo Convention); Convention on the Law of the Non-navigational Uses of International Watercourses (adopted 21 May 1997, entered into force 17 August 2014) 2999 UNTS art 12; LOSC (n 18) art 206.
[117]See *Responsibilities and Obligations of States sponsoring Persons and Entities with respect to Activities in the Area* (Advisory Opinion) [2011] ITLOS Rep 10, para 145; *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)* (Judgment) [2015] ICJ Rep 665 (*Costa Rica/Nicaragua*) para 104.
[118]*Costa Rica/Nicaragua* (n 117) para 104.
[119]*Pulp Mills on the River Uruguay (Argentina v. Uruguay)* (Judgment [2010]) ICJ Rep 14 (*Pulp Mills*) para 205.
[120]N Craik, 'Biodiversity-inclusive Impact Assessments' in E Morgera and J Razzaque (eds), *Biodiversity and Nature Protection Law* (Edward Elgar 2017) 431.
[121]N Craik, 'The Duty to Cooperate in the Customary Law of Environmental Impact Assessment' (2020) 69 International and Comparative Law Quarterly 239, 250–251.
[122]ibid.
[123]UNFSA (n 19) art 6(6).
[124]ibid art 14.
[125]ibid art 9.

with respect to such fisheries[124] could feed into an integrated EIAs prior to the exploration of new fisheries, and be facilitated by RFMOs.[125]

The duty to carry out an EIA, as we argue, is not limited to activities that may cause environmental harm of a transboundary nature. CBD parties are required to introduce appropriate EIA procedures for proposed projects likely to have significant adverse effects on biodiversity, giving due account to public participation in such procedures.[126] This obligation is relevant for coastal States authorizing large-scale industrial fishing within their own maritime zones and on the high seas,[127] even where there is no risk of transboundary harm. Despite the ICJ's interpretation that the wording of the CBD provision is such that it does not give rise to an obligation,[128] we contend that such wording[129] only opens up a margin of discretion for different parties to decide how (not whether) to implement such duty.[130] Our argument is reinforced by the joint reading of States' obligations to prevent negative impacts on the marine environment under their jurisdiction, pursuant to the LOSC, and on human rights arising from biodiversity degradation within their territories,[131] pursuant to the relevant international human rights treaties, as discussed below.

Both in the case of transboundary and non-transboundary environmental harm, international EIA obligations are inherently associated with the precautionary principle, which the CBD[132] and UNFSA[133] enshrine, and the International Tribunal for the Law of the Sea (ITLOS) has considered customary international law.[134]

4.1 | Consolidated EIA duty in the marine context

The LOSC requires its parties to carry out an EIA for planned activities under their jurisdiction and control with potential to cause substantial pollution of or significant and harmful changes to the marine environment and to communicate results of such assessments to the competent international organizations.[135] LOSC Article 206 does not clarify the meaning or extent of 'planned activities', which can thus include large-scale industrial fisheries as long as these are reasonably believed to cause 'substantial pollution' and 'significant harmful changes' to the marine environment. As demonstrated above, large-scale industrial fisheries are already causing substantial pollution and significant harmful changes to the environment. Such impacts may affect ecosystems close to where large-scale industrial fishing operates, as well as 'the health and viability of ecosystems *elsewhere*', amounting to a 'concern of *common interest* of the international community'.[136] In the *South China Sea Arbitration*, the Tribunal concluded that China violated LOSC Article 206 for failing to comply with the duty to communicate the results of impact studies, rather than failing to carry out an EIA.[137] This conclusion can be ascribed to the lack of specificity of Article 206: China presented alleged EIA-like studies but the Tribunal could not make a definitive assessment, other than noting that they were '"far less comprehensive" than environmental impact assessments reviewed by other international courts and tribunals'.[138] Boyle argues that LOSC Article 206 would be best enforced by potentially affected States through provisional measures requiring States cooperation in conducting a prior assessment of the risks and potential harm to the marine environment.[139] This was the case of the ITLOS's provisional measures prescribed in the *Southern Bluefin Tuna Cases*, which Boyle notes had an effect in requiring further assessments of the fish stocks prior to proposals for increasing catch quotas.[140] This illustrates how an *ex-post* impact assessment can be considered specifically for output controls in an ongoing large-scale fisheries project, with a view to further avoiding continuing impacts on the marine environment and fish stocks.

UNFSA Article 5(d) requires its parties to cooperate in the conservation and management of straddling fish stocks and highly migratory stocks through, inter alia, assessing the impacts of fishing on target stocks and species belonging to the same ecosystem or associated with or dependent upon target stocks.[141] While the EIA obligation is implicitly covered in this provision, the generic reference to 'impacts of fishing' allows for the interpretation of these as comprising any type of impact—not only those covered in EIAs, but also the associated human rights impacts. The UNFSA has a limited scope in that it does not cover all stocks and aquatic species targeted by large-scale industrial fisheries. Thus, for species outside the UNFSA's scope, LOSC Article 206 supports the duty to carry out an EIA in large-scale industrial fisheries. However, such provision does not cover integrated impact assessments, leaving aside social and cultural dimensions. Recognizing the UNFSA's limited scope, the UN General Assembly has called upon States and RFMOs with competence over

[126]CBD (n 20) art 14(1)(a).
[127]ibid art 4.
[128]*Costa Rica/Nicaragua* (n 117) para 164.
[129]The obligation contained in CBD (n 20) art 14 ('shall') is qualified by the words 'as far as possible and as appropriate' – a qualification common in other international biodiversity-related conventions. The High Court of Australia (*Commonwealth v Tasmania*, 1983) HCA 21–158 CLR 1, para 24, looked at similarly qualified language in Articles 4 and 5 of the Word Heritage Convention rather than the CBD.
[130]E Morgera, 'Biodiversity as a Human Right and its Implications for the EU's External Action' (European Parliament 2020) (https://www.europarl.europa.eu/RegData/etudes/STUD/2020/603491/EXPO_STU(2020)603491_EN.pdf). See also S Maljean-Dubois and E Morgera, 'International Biodiversity Litigation: The Increasing Emphasis on Biodiversity Law before International Courts and Tribunals' in G Futhazar, S Maljean-Dubois and J Razzaque (eds), *Biodiversity Litigation* (Oxford University Press 2022 fc).
[131]For a summary of relevant international legal bases, see UN Human Rights Council (HRC) 'Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment' UN Doc A/HRC/37/59 (24 January 2018) Framework Principles on Human Rights and the Environment, Principles 8 and 15.
[132]CBD (n 20) preamble and art 14(1)(a)(b).
[133]UNFSA (n 19) art 6.
[134]*Responsibilities and Obligations of States sponsoring Persons and Entities with respect to Activities in the Area* (n 117) para 145 ('the obligation to conduct an environmental impact assessment is a direct obligation under the [LOSC] and a general obligation under customary international law').
[135]LOSC (n 18) arts 205–206.
[136]Y Tanaka, 'The South China Sea Arbitration: Environmental Obligations under the Law of the Sea Convention' (2018) 27 Review of European, Comparative and International Environmental Law 90, 90–91 (emphasis added).
[137]*South China Sea Arbitration* (The Republic of the Philippines v People's Republic of China) (Award) Arbitral Tribunal [2016] PCA Case No. 2013–19, paras 988–991.
[138]ibid para 990; Tanaka (n 136) 95.
[139]A Boyle, 'The Environmental Jurisprudence of the International Tribunal for the Law of the Sea' (2007) 22 International Journal of Marine and Coastal Law 369, 376–378.
[140]ibid 378.
[141]UNFSA (n 19) art 5(d).
[142]UN Doc A/RES/61/105 (n 12) para 19.

discrete high-seas fish stocks 'to adopt the necessary measures to ensure the long-term conservation, management and sustainable use of such stocks in accordance with the Convention and consistent with the general principles set forth in the Agreement'.[142]

As the UNFSA has limited membership (92 parties) in contrast to the LOSC (168 parties), it is important to consider the obligations that apply to non-UNFSA parties as being parties to the CBD (196 parties) and relevant global human rights treaties. The UNFSA requirement applying to areas under national jurisdiction can thus be considered a more specific obligation of the biodiversity-inclusive and socio-cultural impact assessments required under the CBD and international human rights treaties. Furthermore, the LOSC requires the coastal State, with respect to the EEZ, to ensure proper conservation and management measures based on 'relevant environmental and economic factors' as well as 'fishing patterns, the interdependence of stocks and *any generally recommended international minimum standards*'.[143] A similar obligation is imposed on flag States fishing on the high seas, except that language concerning the 'economic needs of coastal fishing communities' is not present in this instance.[144] Therefore, when implementing these LOSC obligations, the minimum international standards on impact assessments adopted under the UN General Assembly, FAO and CBD, even if not legally binding per se, can be considered incorporated into LOSC by reference.[145] The legal basis for this argument can be found in LOSC Articles 61(3) and 119 (1)(a), which require coastal States in their EEZs and flag States on the high seas to take into account generally recommended international minimum standards, whether subregional, regional or global, when applying fisheries-related conservation and management measures.[146]

4.2 | International guidance for integrated impact assessments

The ICJ in the *Pulp Mills* case asserted that 'general international law [does not] specify the scope and content of an environmental impact assessment'.[147] This seems reflected in the EIA obligations under the LOSC and UNFSA, but international guidance under the aegis of the FAO details fisheries-specific requirements. The international guidance adopted by CBD parties and provided by international human rights bodies ensure further clarity on the scope and content of international EIA obligations for parties to the relevant treaties. The following sections illustrate the level of detail of these clarifications and the compatibility of these international sources.

4.2.1 | Fisheries-specific guidance

The FAO Code of Conduct for Responsible Fisheries[148] calls on States to carry out an assessment of the implications of habitat disturbance before introducing on a commercial scale new fishing gear, methods and operations to an area.[149] And, before the commercial introduction of new types of gear, the Code calls for a scientific evaluation of their impact on fisheries and ecosystems where they will be used.[150] These assessments are limited to environmental considerations. The Code also recommends States and RFMOs to apply the precautionary approach to conservation, management and exploitation of aquatic living resources.[151] It also calls on States to adopt cautious conservation and management measures in the event of new or exploratory fisheries,[152] including environmental, economic and social considerations.[153] Furthermore, the Code sheds light on the need, during the decision-making process on the use, conservation and management of fisheries resources, of recognizing the needs and interests of Indigenous peoples and local fishing communities,[154] taking into account cost-effectiveness and social impacts in the evaluation of alternative conservation and management of fisheries resources.[155] In support of decision-making on the allocation and use of coastal resources, the Code also promotes the assessment of their respective value with due regard to economic, social and cultural factors, which is the provision most closely related to the idea of an integrated environmental, socio-cultural impact assessment.[156] Many FAO member States have recently reported that they are in compliance with most of the Code's provisions and have incorporated its provisions into their national legislation.[157]

Additionally, the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas provide criteria for impact assessments concerning VMEs,[158] with a focus on bottom fishing on the high seas (which coastal States are free to draw from in adopting similar measures for areas within national jurisdiction).[159] This has been considered one of the ad hoc sectoral applications of EIAs and SEAs in areas beyond national jurisdiction,[160] an issue that is currently being negotiated as part of a new international legally binding instrument on the conservation and sustainable management of

[143] LOSC (n 18) art 61(3) (emphasis added).
[144] ibid art 119(1)(a).
[145] See Diz (n 8).
[146] See also ibid; P Birnie, A Boyle and C Redgwell, *International Law and the Environment* (4th edn, Oxford University Press 2021).
[147] *Pulp Mills* (n 119) para 205.
[148] Code of Conduct for Responsible Fisheries (adopted 31 October 1995), Resolution 4/95 FAO Conference (CCRF).
[149] ibid art 8.4.7.
[150] ibid art 12.11.
[151] ibid art 6.5.
[152] ibid art 7.5 to 7.5.5.
[153] ibid art 7.2.2.
[154] ibid art 7.6.
[155] ibid art 7.6.7.
[156] ibid art 10.2.2.
[157] In 2018, the Committee on Fisheries of the FAO reported that 127 country members and the EU have been in compliance with many of the Code's provisions. See FAO, 'Progress in the Implementation of the Code of Conduct for Responsible Fisheries and related Instruments', COFI/2018/Inf. (7 June 2018) (http://www.fao.org/fileadmin/user_upload/COFI/COFI33Documents/MX233en.pdf).
[158] FAO (n 13) para 47.
[159] A Bensch et al, 'Worldwide Review of Bottom Fisheries in the High Seas' (FAO 2009).
[160] R Warner, 'Ocean beyond Boundaries: Environmental Assessment Frameworks' (2012) 27 International Journal of Marine and Coastal Law 481.
[161] R Barnes, 'The Proposed LOSC Implementation Agreement on Areas Beyond National Jurisdiction and its Impact on International Fisheries Law' (2016) 31 International Journal of Marine and Coastal Law 583.
[162] FAO, 'The Ecosystem Approach to Fisheries' (FAO 2003) 67.
[163] FAO, 'The Human Dimensions of the Ecosystem Approach to Fisheries' (FAO 2009).

marine biodiversity of areas beyond national jurisdiction.[161] The FAO technical guidance on the ecosystem approach to fisheries (EAF) recommends the development of 'analytical techniques to underpin the decision-making process, including analyses to assist in setting reference points, and to evaluate potential decision rules'.[162] The FAO guidance on the human dimensions of the EAF[163] points to the need of fisheries managers to assess and compare different fisheries management options. It calls for going beyond direct and immediate impacts, including wider societal goals, and examining ecological, economic, social and institutional costs and benefits in the implementation of an ecosystem approach to fisheries.[164] An FAO guide on legislating for an EAF highlights the importance of having legislation in place on EIAs for activities, including fisheries, with potential to affect ecosystems that support fisheries.[165]

All these guidelines provide clarifications on the environmental content of required EIAs. Furthermore, the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) recommend States and non-State actors to 'consider social, economic and environmental impacts through impact studies',[166] prior to the implementation of large-scale development projects potentially affecting small-scale fishing communities; to 'hold effective and meaningful consultations with these communities';[167] and to carry out 'environmental, social and other relevant assessments' to equitably address the impacts by international trade on the environment and on small-scale fishers' culture, livelihoods and special needs related to food security.[168] While these guidance documents are formally non-binding,[169] they can be considered relevant to the interpretation of CBD and relevant international human rights treaties, as well as incorporated into the LOSC by reference as generally recommended international minimum standards.[170]

4.2.2 | Biodiversity guidance

Relevant guidance has also been adopted under the CBD. CBD parties are expected to incorporate marine biodiversity issues into different stages of EIA,[171] making efforts to minimize the specific, as well as cumulative, detrimental impacts of human activities on marine and coastal biodiversity both in areas within and beyond national jurisdiction. This is particularly true in areas that are affected by multiple direct and indirect anthropogenic influences originating from the watershed area, and where the biodiversity issues require an integrated holistic approach aiming to improve the water quality and restore the health and functioning of the whole ecosystem.[172] CBD guidelines call for heightened attention to activities affecting deep-sea habitats of importance for threatened, endangered or declining species, and factors that may cause changes to biological or ecological processes that may affect such species, relying on criteria based on 'the potential to cause significant adverse impacts'.[173] These CBD guidelines emphasize the need for incremental and iterative test-based approaches to permitting activities in the marine environment, such as by allowing a particular activity at a small scale with stringent conditions for monitoring and surveillance. They underline that the scientific criteria for describing 'ecologically or biologically significant marine areas'[174] and that the FAO criteria for VMEs provide useful reference frameworks.[175]

Furthermore, the CBD guidelines note that the assessment phase for activities affecting marine and coastal biodiversity may often need to be undertaken with incomplete data and knowledge for assessment and evaluation,[176] so efforts should also be made to incorporate the latest work on ecosystem services and values. Predictions of impacts may be more uncertain, and there is likely less knowledge and experience available to apply in developing alternatives, as the proponent of the activity to be assessed may be based far from the site of the proposed activity, as may also be the governmental and administrative authorities of the flag State. Likewise, the necessary follow-up management, monitoring, control and surveillance recommended by an EIA may be more difficult in marine areas beyond national jurisdiction where 'customs of practice' for EIA are less established, methodologies are less mature, and different assessment approaches may occur. The guidelines recommend that information from other areas of the world where this activity has taken place would be used to ascertain likely risk and impacts before allowing a small-scale activity to occur.[177] While these CBD guidelines are enshrined in formally non-binding decisions, they are the product of an intergovernmental process, ultimately agreed by consensus, and are thus considered a legitimate interpretation of more general CBD binding provisions by its parties.[178] They can also be considered incorporated into the LOSC by reference as generally recommended international minimum standards.

[164]FAO (n 162) 32–34.
[165]FAO (n 163) 37, 57–58.
[166]FAO, 'Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication' (FAO 2014) (SSF Guidelines) Section 5.10.
[167]ibid Section 5.10.
[168]ibid Section 7.9.
[169]The SSF Guidelines arguably have normative significance due to their multi stakeholder and participatory process of development, adoption and implementation; their cross-references to legally binding instruments; and their ability to stimulate legal and policy developments at various levels of governance. See J Nakamura, 'Legal Reflections on the Small-Scale Fisheries Guidelines: Building a Global Safety Net for Small-Scale Fisheries' (2022) 37 International Journal of Marine and Coastal Law 31.
[170]See Diz (n 8); Birnie et al (n 146).
[171]CBD 'Decision VIII/30, Biodiversity and Climate Change: Guidance to Promote Synergy among Activities for Biodiversity Conservation, Mitigating or Adapting to Climate Change and Combating Land Degradation' UN Doc UNEP/CBD/COP/DEC/VIII/30 (15 June 2005).
[172]CBD 'Decision X/29, Marine and Coastal Biodiversity' UN Doc UNEP/CBD/COP/DEC/X/29 (29 October 2010).
[173]CBD 'Decision XI/18, Marine and Coastal Biodiversity: Sustainable Fisheries and Addressing Adverse Impacts of Human Activities, Voluntary Guidelines for Environmental Assessment, and Marine Spatial Planning' UN Doc UNEP/CBD/COP/DEC/XI/18 (5 December 2012); CBD 'Decision XI/23, Biological Diversity of Inland Water Ecosystems' UN Doc UNEP/CBD/COP/DEC/XI/23 (5 December 2012).
[174]CBD 'Decision IX/20, Marine and Coastal Biodiversity' UN Doc UNEP/CBD/COP/DEC/IX/20 (9 October 2008).
[175]ibid para 8.
[176]CBD 'Marine and Coastal Biodiversity: Revised Voluntary Guidelines for the Consideration of Biodiversity in Environmental Impact Assessments and Strategic Environmental Assessments in Marine and Coastal Areas' UN Doc UNEP/CBD/COP/11/23 (21 August 2012) para 5(c).
[177]ibid.
[178]Morgera (n 130) 9–11.

Based on the foregoing, the internationally recognized duty to carry out an EIA can be applied to large-scale industrial fisheries, either before (planning phase) or after (monitoring phase), due to the range of potential significant environmental impacts potentially arising from this sector. While the EIA duty is clearly provided by the LOSC, implicitly by the UNFSA, and its requirements are complemented by more detailed guidance under FAO and CBD, the duty to carry out integrated impact assessments (that cover social and cultural considerations as well) for large-scale industrial fisheries is supported by additional CBD guidance and international human rights law, as examined next.

4.2.3 | Integrated environmental and socio-cultural assessments based on international biodiversity and human rights frameworks

Integrated environmental and socio-cultural impact assessments have emerged as one of three key safeguards to protect the human rights of Indigenous peoples, small-scale fishers and rural women and children at the intersection of international biodiversity law and international human rights law.[179] The CBD Akwé: Kon Guidelines[180] provide a step-by-step approach to assessing inter-linked socio-cultural and biodiversity impacts in relation to sacred sites and areas traditional occupied or used by Indigenous peoples and local communities. They specifically relate to beliefs systems, languages and customs, traditional systems of natural resource use, maintenance of genetic diversity through Indigenous customary management, exercise of customary laws regarding land tenure and distribution of resources and benefits from transgenerational aspects, including opportunities for elders to pass on their knowledge to youth. Governments are called upon to provide sufficient human, financial, technical and legal resources to support Indigenous expertise proportionally to the scale of any proposed development. Indigenous peoples and other communities should be involved in the development of financial auditing processes so that the resources invested are used effectively.[181] The Akwé: Kon Guidelines also call for the integration of fair and equitable benefit-sharing as part of any assessment, which is a requirement for the protection of the human rights of Indigenous peoples[182] and is also expected under the SSF Guidelines[183] and the UN Declaration on the Rights of Peasants.[184] Such early consideration of fair and equitable benefit-sharing is a key component for EIAs to move away from an exclusive focus on 'damage control' issues.[185] Carefully thinking about benefits from the viewpoint of Indigenous peoples and other communities, at the early stage of scoping for impacts, in and of itself requires a systematic consideration of both the negative impacts (e.g. potential damage to ways of life, livelihoods, well-being and traditional knowledge) and the positive impacts on food, health, environmental sustainability, together with community well-being, vitality and viability (e.g. employment levels and opportunities, welfare, education and its availability, standards of housing, infrastructure and services).[186]

Several international human rights bodies[187] have specifically mentioned the importance of the CBD Akwé: Kon Guidelines. Notably, the Inter-American Court of Human Rights has consolidated jurisprudence on the need to undertake an EIA when there is a risk of significant harm by proposed activities particularly on territories and resources traditionally belonging to Indigenous peoples.[188] The Court has considered the conditions for such assessment, which comprise the participation of Indigenous peoples in the EIA process through consultation, acknowledging that 'in general, the participation of the interested public allows a more complete assessment of the possible impact of a project or activity or whether it will affect human rights.[189] Furthermore, the Court recognized the need of environmental, socio-cultural impact assessments with a view to respecting Indigenous peoples' traditions and culture, as well as their intrinsic connection with territories and natural resources they depend on and have been traditionally used.[190] Specifically, the Court recognized that EIAs 'must respect the traditions and culture of the Indigenous peoples', as EIAs aim at, among other objectives, ensuring 'the right of

[179]Convention Concerning Indigenous and Tribal in Independent Countries (adopted 27 June 1989, entered into force 5 September 1991) 1650 UNTS 383 (ILO C-169); UNGA 'Declaration on the Rights of Indigenous Peoples' UN Doc A/RES/61/295 (2 October 2007) (UNDRIP); HRC 'United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas' UN Doc A/HRC/RES/39/12 (8 October 2018) (UNDROP); HRC (n 131) Principle 15; Committee on the Elimination of Discrimination against Women, 'General Recommendation No. 34 on the Rights of Rural Women' UN Doc CEDAW/C/GC/25 (4 March 2016); HRC 'Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment' UN Doc A/HRC/37/58 (24 January 2018).

[180]Akwé: Kon Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessments Regarding Developments Proposed to Take Place on, or Which Are Likely to Impact on, Sacred Sites and on Lands and Waters Traditionally Occupied or Used by Indigenous and Local Communities, in CBD, 'Decision VII/16, Article 8(j) and Related Provisions' UN Doc UNEP/CBD/COP/DEC/VII/16 (13 April 2004) (Akwé: Kon Voluntary Guidelines).

[181]ibid para 46.

[182]Various international interpretative guiding documents have clarified this obligation under international human rights treaty law, as summarized in the Framework Principles on Human Rights and the Environment; see HRC (n 131) Principle 15.

[183]SSF Guidelines (n 166) Sections 5.1 and 5.10.

[184]UNDROP (n 179) art 5.

[185]E Morgera, 'Under the Radar: Fair and Equitable Benefit-sharing and the Human Rights of Indigenous Peoples and Local Communities Connected to Natural Resources' (2019) 23 International Journal of Human Rights 1,098.

[186]Akwé: Kon Voluntary Guidelines (n 180) para 40.

[187]HRC 'Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment' UN Doc A/HRC/34/49 (19 January 2017) para 72.

[188]IACtHR, *The Environment and Human Rights (State Obligations in Relation to the Environment in the Context of the Protection and Guarantee of the Rights to Life and to Personal Integrity – Interpretation and Scope of Articles 4(1) and 5(1) of the American Convention on Human Rights)*, Advisory Opinion OC-23/17, Inter-American Court of Human Rights Series A No 23 (15 November 2017) paras 156–170.

[189]ibid para 168.

[190]ibid para 169. See also *Saramaka People v Suriname*, Preliminary Objections, Merits, Reparations, and Costs, Inter-American Court of Human Rights Series C No 172 (28 November 2007) para 41; *Yakye Axa Indigenous Community v Paraguay*, Merits, Reparations and Costs, Inter-American Court of Human Rights Series C No 125 (17 June 2005) paras 124, 135 and 137; *Kaliña and Lokono Peoples v Suriname*, Merits, Reparations and Costs, Inter-American Court of Human Rights Series C No 309 (25 November 2015) para 164.

[191]*Kaliña and Lokono Peoples v Suriname* (n 190) para 215.

[192]ibid paras 92 and 216.

[193]ibid para 230.

the Indigenous peoples to be informed of all proposed projects on their territory'.[191] The Court considered the absence of a social and environmental impact assessment prior to mining operations that negatively impacts on community-level traditional fishing activities[192] as failure to ensure effective participation of concerned communities.[193] The position of the Inter-American Court on these issues has been followed by other international human rights bodies (e.g. under the Convention on the Elimination of Racial Discrimination)[194] and is considered generally applicable to global human rights treaties.[195] It has also been reflected in the SSF Guidelines[196] and the UN Declaration on Peasants' Rights.[197] The guidance from the CBD and international human rights case law has provided insights on how EIAs in the fisheries context can serve to ensure respect for the rights of Indigenous peoples and small-scale fishers to their territories, including and fishing grounds, as well as fair and equitable benefit-sharing from sustainable fisheries.[198]

4.2.4 | Need for SEAs

The prevailing practice in project-level environmental assessments does not include consideration of relevant historical context[199] and claims and is less likely to address long-term implications of resource development on community interests. International environmental law has thus had recourse to SEAs, at the level of policies, plans and programmes, to take into account cumulative impacts (including from climate change) and consideration of communities' broader territorial and historical perspectives.[200] SEAs are not a common requirement in national legislation outside Europe,[201] but are required under the CBD.[202] Consensus-based CBD guidance on SEAs include stakeholder engagement and transparency, technical assessment, information-sharing and discussion among stakeholders, and the monitoring and evaluation after the policy or plan has been adopted.[203] Importantly, CBD guidance clarifies the 'biodiversity triggers for SEA',[204] which relate to large-scale industrial fisheries given that this sector's activities can act both as 'direct drivers of change' with known impact on ecosystem services, and as 'indirect drivers of change' through policies, plans and programmes, which can substantially affect the society, as demonstrated above. While requirements for SEAs have not yet been mentioned by international human rights bodies, the well-understood negative impacts of climate change on Indigenous peoples' human rights and the need to consider potential human rights implications beyond the strict scope of EIAs arguably justify the need to also consider the CBD requirements for SEAs as mutually supportive to international human rights law.[205]

5 | CONCLUSION

Significant risks are posed by large-scale industrial fisheries on the environment, affecting targeted and non-targeted species, dependent and associated ecosystems, habitats and biodiversity, and contributing to exacerbated effects of climate change. In addition, large-scale industrial fisheries negatively impact on Indigenous peoples, small-scale fishers and fishing communities dependent on fishing for their survival, livelihoods and culture. We have argued that the general international duty to carry out an EIA should be interpreted in conjunction with the LOSC, UNFSA, CBD, guiding instruments adopted under the aegis of the FAO and CBD and relevant international human rights treaties. This mutually supportive interpretative approach serves to clarifying the existence and scope of an international obligation to carry out integrated environmental and socio-cultural impact assessments of large-scale industrial fisheries (including of existing projects, to assess continuing impacts) and SEAs of plans, programmes and policies related to large-scale industrial fisheries. States need to recognize and implement these international obligations by legislating on EIAs and SEAs for existing and new large-scale industrial fisheries, ensuring that such assessments integrate socio-cultural dimensions as well. Moreover, States need to create binding rules for, and effectively monitor, large-scale industrial fishing operators to respect human rights (particularly those of Indigenous peoples and small-scale fishers whose sacred sites, and traditionally occupied and used areas, are involved or affected by large-scale industrial fisheries), as well as to protect biodiversity and contribute to climate change mitigation. These environmental socio-cultural impact assessments and SEAs will ultimately benefit everyone's human right to a clean, healthy and sustainable environment.[206]

DATA AVAILABILITY STATEMENT

The authors encourage data sharing.

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[194]CERD 'Concluding Observations on the Combined Thirteenth to Fifteenth Periodic Reports of Suriname' UN Doc CERD/C/SUR/CO/13–15 (25 September 2015) para 26.
[195]HRC (n 131) Principles 8 and 15.
[196]SSF Guidelines (n 166) Section 5.10.
[197]UNDROP (n 179) art 5.
[198]Morgera and Nakamura (n 10).
[199]*Pulp Mills* (n 119) para 205.
[200]Craik (n 121) 460.
[201]M Barelli, 'Free, Prior and Informed Consent in the Aftermath of the UN Declaration on the Rights of Indigenous Peoples: Developments and Challenges Ahead' (2012) 16 International Journal of Human Rights 1, 15. See, e.g., UN Human Rights Council, *Jouni E. Länsman* et al *v Finland*, Communication No. 671/1995, UN Doc CCPR/C/58/D/671/1995 (22 November 1996) para 10.7.
[202]CBD (n 20) art 4.
[203]CBD, 'Marine and Coastal Biodiversity: Revised Voluntary Guidelines for the Consideration of Biodiversity in Environmental Impact Assessments and Strategic Environmental Assessments in Marine and Coastal Areas' UN Doc UNEP/CBD/COP/11/23 (21 August 2012) Annex, Part II, para 14.
[204]ibid para 28.
[205]Morgera (n 185) 14.
[206]HRC 'Resolution 48/13, The Human Right to a Clean, Healthy and Sustainable Environment' UN Doc A/HRC/RES/48/13 (8 October 2021); UNGA 'The Human Right to a Clean, Healthy and Sustainable Environment' UN Doc A/RES/76/300 (1 August 2022).

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