



**UiT** The Arctic University of Norway

UiT – The Arctic University of Norway, Faculty of Law

## **The Interface between Ecological Restoration and Ocean Fisheries Governance**

Restoration of Marine Ecosystems through Regional Fisheries Management Organizations

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## Foreword

With immense pleasure, I am submitting my master's thesis, marking the culmination of my transformative journey as a NOMPEL student. These two years of cultural immersion, filled with adventures, discoveries, and challenges, have not only brought new friends and new goals but also shaped me into a more knowledgeable and confident individual. I am forever thankful for every person who has played a part in this significant chapter of my life.

I first want to thank my peers, who I can also call my friends, for their unwavering support and the countless hours we spent together, both in laughter and in learning. I am also deeply grateful to the teachers, lecturers, and dedicated individuals at Uppsala University, the University of Eastern Finland, and the Arctic University of Norway. Their love for environmental law, patience, and skillful guidance have been instrumental in our academic journey. Their thought-provoking questions and in-depth discussions have enriched our understanding of various environmental issues and challenges, and have been crucial in the successful submission of our master's thesis.

The research journey has allowed me to delve into the established frameworks of ocean fisheries governance and the emerging field of ecological restoration in environmental law. As Jacques Cousteau aptly said,

"The sea, once it casts its spell, holds one in its net of wonder forever".

(Jacques Cousteau)

Therefore, it was inevitable that I would spend the final six months of my master's immersed in this captivating world. I extend my heartfelt thanks to my supervisor for this last academic journey, whose insightful comments and invaluable guidance have shaped this thesis and my understanding of the subject.

## **Abstract**

The United Nations has designated 2021–2030 as the 'Decade on Ecosystem Restoration' to urgently rehabilitate degraded ecosystems and advance Sustainable Development Goals, particularly SDG 14, which focuses on marine ecosystems. This paper examines the intersection of ecological restoration and ocean fisheries governance within Regional Fisheries Management Organizations. Marine ecosystems face severe threats from overfishing, habitat destruction, and pollution. This paper highlights that RFMOs, which oversee nearly two-thirds of the global ocean, have the potential, through their framework already supporting passive ecological restoration approaches, to promote sustainable marine resource use by integrating ecological restoration into their conservation and management measures. It also underscores the need for a robust governance framework, arguing that effective ecological restoration within RFMOs requires not just cooperation, but enhanced collaboration among RFMOs and other institutions. This collective effort, facilitated by agreements such as the BBNJ, can leverage collective expertise and resources to tackle marine ecosystems restoration.

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## List of Abbreviations

ABMTs	Area-based management tools
BBNJ Agreement	Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction Agreement
CBD	Convention on Biological Diversity
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CDS	Catch documentation schemes
CFP	EU Common Fishery Policy
COP CBD	Conference of the Parties to the Convention on Biological Diversity
CMM	Conservation and Management Measures
CMS	Convention on the Conservation of Migratory Species of Wild Animals
EAF	Ecosystem Approach to Fisheries
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization
FIELD	Foundation for International Environmental Law and Development
GAIRS	Generally accepted international rules, standards, and recommended practices and procedures
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICJ	International Court of Justice
IEEP	Institute for European Environmental Policy
IMO	International Maritime Organization
IOs	Intergovernmental organizations
IOTC	Indian Ocean Tuna Commission
ISA	International Seabed Authority
IUCN	International Union for Conservation of Nature
IUU fishing	Illegal, unreported, and unregulated fishing
IWC	International Whaling Commission
MGRs	Marine genetic resources
MoU	Memorandum of Understanding

MPAs	Marine protected areas
MSFD	Marine Strategy Framework Directive
MSY	Maximum sustainable yield
NAFO	Northwest Atlantic Fisheries Organization
NASCO	North Atlantic Salmon Conservation Organization
NEAFC	North-East Atlantic Fisheries Commission
NRL	Nature Restoration Law
NRP	National Restoration Plans
RFBs	Regional Fisheries Bodies
RFABs	Regional fisheries advisory bodies
RFMOs	Regional Fisheries Management Organizations
SDGs	Sustainable Development Goals
SEAFO	South East Atlantic Fisheries Organization
SER	Society for Ecological Restoration
SPRMO	South Pacific Regional Fisheries Management Organization
UNCLOS	United Nations Convention on the Law of the Sea
UNFSA	United Nations Fish Stocks Agreement
VMS	Vessel monitoring systems
WCPFC	Western and Central Pacific Fisheries Commission
WFD	Water Framework Directive
WWF	World Wide Fund for Nature

# 1. Introduction

In the epoch of the Anthropocene, where human interference with natural ecosystems has undeniable impacts on the planet Earth and where the failure to prevent damage to or degradation of the environment occurs worldwide, actions towards the resilience and health of the oceans are key.<sup>1</sup> The oceans, covering over 70% of the Earth's surface are vital for sustaining life and are a source of immense ecological, economic and cultural value.<sup>2</sup> However, human activities, ranging from overfishing and habitat destruction to pollution, have taken a toll on marine ecosystems worldwide, jeopardizing their health and resilience.<sup>3</sup> Given that the fisheries sector, through its activities, is implicated in contributing to these impacts, it is uniquely positioned to adapt its practices to protect the marine environment.

Fisheries are the most pressuring threat to the high sea and deep seabed parts of the ocean.<sup>4</sup> In a perplexing twist, the activities conducted by the fisheries sector impact the sector itself. The excess of harvesting and destructing fishing methods puts marine biodiversity at risk and exceeds sustainable management of living resources.<sup>5</sup> This disruption to the marine environment diminishes fishing opportunities as marine ecosystems serve as habitats for various fish species.<sup>6</sup> Consequently, there is a growing recognition of the urgent need for concerted efforts to prevent damage to marine ecosystems.<sup>7</sup> However, as highlighted by the United Nations Decade of Ecosystem Restoration,<sup>8</sup> the focus is shifting beyond mere prevention. Bastmeijer underlines that prevention is insufficient to achieve international objectives regarding nature protection.<sup>9</sup> Increasingly, ecological restoration is seen as a means to recover what has been lost and to enhance natural values.<sup>10</sup> Nevertheless, as highlighted in this paper, the absence of a robust legal and institutional framework for ecological restoration

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<sup>1</sup> Roberto Danovaro, et al., *Marine ecosystem restoration in a changing ocean*, 29 RESTORATION ECOLOGY (2021), 2.

<sup>2</sup> UN Decade on Ecosystem Restoration, *Oceans and Coasts*, available at <https://www.decadeonrestoration.org/types-ecosystem-restoration/oceans-and-coasts> (last accessed 30 May 2024).

<sup>3</sup> Danovaro, *supra* note 1, at 3.

<sup>4</sup> Christoph Schwarte & Linda Siegele, MARINE PROTECTED AREAS ON THE HIGH SEAS? (Foundation for International Environmental Law and Development 2008), 4.

<sup>5</sup> *Ibid.*

<sup>6</sup> Ecologic Institute, Why is nature restoration critical for marine areas? (2023), 1.

<sup>7</sup> Dan Laffoley, et al., *Eight urgent, fundamental and simultaneous steps needed to restore ocean health, and the consequences for humanity and the planet of inaction or delay*, 30 AQUATIC CONSERVATION: MARINE AND FRESHWATER ECOSYSTEMS (2020), 199.

<sup>8</sup> UNEP/FAO, Resolution A/RES/73/2841, The UN Decade on Ecosystem Restoration 2021-2030 (March 2019).

<sup>9</sup> Kees Bastmeijer, *Ecological restoration in international biodiversity law: a promising strategy to address our failure to prevent?*, in RESEARCH HANDBOOK ON BIODIVERSITY AND LAW (Peter Davies Michael Bowman, Edward Goodwin ed. 2016), 389.

<sup>10</sup> *Ibid.*

underscores the potential advantage of leveraging existing ocean governance structures, such as those regulating fisheries, to fulfil ecological restoration objectives.

The intricate interplay between ocean fisheries governance and ecological restoration takes centre stage in marine ecosystem restoration. Ocean fisheries governance seeks to ensure the sustainable management of marine resources, minimize overexploitation, and mitigate the adverse impacts of fishing activities on ecosystems.<sup>11</sup> Meanwhile, within the ocean, ecological restoration aims to reverse the degradation of marine habitats, rebuild populations of key species, and enhance ecosystem functions and services.<sup>12</sup> Recognizing that healthy marine ecosystems serve as vital habitats and breeding grounds for various fish species, restoring marine ecosystems becomes a crucial tool for fisheries.<sup>13</sup> Consequently, marine ecosystem restoration promises benefits to the fishery sector, not only through its positive impacts on the environment but also through the enhancement of sustainability and productivity in fishing activities over the long term.<sup>14</sup> This symbiotic relationship underscores the importance of integrating ecological restoration efforts with practical fisheries governance to achieve holistic conservation outcomes while meeting the needs of both ecosystems and human populations.

Ocean fisheries governance, similar to broad ocean governance, encompasses three key components: a legal framework consisting of a combination of international, national, and local laws, both binding and soft; an institutional structure; and several mechanisms for implementation.<sup>15</sup> Regional Fisheries Management Organizations (RFMOs) have emerged as critical players in the governance of international fisheries,<sup>16</sup> tasked with promoting sustainable management practices and conservation efforts in specific regions and areas beyond national jurisdiction.<sup>17</sup> While RFMOs have traditionally focused on fisheries management, they could be recognized as potential actors in ecological restoration for three main reasons.

Firstly, the emergence of the Ecosystem Approach to Fisheries (EAF) signals a broader recognition of the need to move beyond traditional single-species management paradigms

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<sup>11</sup> Lori Ridgeway & JC Rice, *International organizations and fisheries governance*, HANDBOOK OF MARINE FISHERIES CONSERVATION AND MANAGEMENT (2010), 128.

<sup>12</sup> e.g. Ishtar Kenny, et al., *Aligning social and ecological goals for successful marine restoration*, 288 BIOLOGICAL CONSERVATION (2023), 5; Na Wang, et al., *Mechanism of action of marine ecological restoration on ecological, economic, and social benefits—An empirical analysis based on a structural equation model*, 248 OCEAN & COASTAL MANAGEMENT (2024), 1-2.

<sup>13</sup> Ecologic Institute, *supra* note 6.

<sup>14</sup> *Ibid.*

<sup>15</sup> Coral Triangle Initiative, *Understanding the Oceans Governance* (Widi A. Pratikto ed., 2016), 16.

<sup>16</sup> William Cheung, et al., *PREDICTING FUTURE OCEANS: SUSTAINABILITY OF OCEAN AND HUMAN SYSTEMS AMIDST GLOBAL ENVIRONMENTAL CHANGE* (Elsevier, 2019), 348.

<sup>17</sup> Bianca Haas, et al., *Factors influencing the performance of regional fisheries management organizations*, 113 MARINE POLICY (2020), 6.



towards more holistic and integrated approaches.<sup>18</sup> The EAF underscores the imperative of integrating marine ecosystems into fisheries management practices to safeguard marine ecosystem resources and services for future generations.<sup>19</sup> Given that ecological restoration falls within the purview of ecosystem management, the EAF presents an opportunity for RFMOs to prioritize ecological restoration as a fundamental tool for fisheries management.

Secondly, RFMOs possess the authority to implement sustainable fisheries management practices and establish marine protected areas (MPAs), potentially instrumental in ecological restoration efforts, even if their current mandate only relates to fisheries. Specific measures enacted by RFMOs, such as fishing restrictions within MPAs, align with passive ecosystem restoration, which involves mitigating current threats and pressures on ecosystems.<sup>20</sup>

Thirdly, RFMOs are particularly relevant to ecological restoration in areas where no single governing authority can enforce measures, such as the high seas. Vessels operating on the high seas are governed by the principle of freedom of the high seas under UNCLOS (Article 87). However, RFMOs, with jurisdiction over specific parts of the high seas, have the capacity to enact and enforce measures where other institutions cannot, with envisaged limitations regarding third parties. As such, RFMOs can monitor these areas, enforce regulations such as their sustainable fisheries management practices, and thereby play a critical role in safeguarding and restoring marine ecosystems.<sup>21</sup>

However, navigating the interface between ecological restoration and ocean fisheries governance within the context of RFMOs is not without challenges. Traditionally aiming at fisheries management rather than ecosystem preservation, these organizations have prescriptive and enforcement gaps. Balancing conservation goals with economic interests and ensuring compliance with regulations can be contentious, requiring robust governance frameworks.

Despite these challenges, scholars emphasize the importance of integrating restoration ecology into marine conservation, natural resource management, and sustainable development efforts.<sup>22</sup> The conservation and management of fish stocks inherently involve safeguarding their habitats and, thereby, the marine ecosystem. Marine ecosystems support diverse fish species and provide essential habitats that enhance fishing opportunities.<sup>23</sup> Hence, there is a need for

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<sup>18</sup> Ellen Pikitch, et al., *Ecosystem-Based Fishery Management*, 305 SCIENCE (2004), 346.

<sup>19</sup> FAO, *Fisheries management: The ecosystem approach to fisheries* (2003), 13.

<sup>20</sup> Céline Jacob, et al., *Marine ecosystem restoration and biodiversity offset*, 120 ECOLOGICAL ENGINEERING (2017), 585.

<sup>21</sup> Kristina M Gjerde, *High seas marine protected areas and deep-sea fishing*, 838 FAO FISHERIES REPORTS (2007), 168.

<sup>22</sup> Avigdor Abelson, et al., *Upgrading Marine Ecosystem Restoration Using Ecological-Social Concepts*, 66 BIOSCIENCE (2015), 158.

<sup>23</sup> Ecologic Institute, *supra* note 6.

RFMOs to prioritize ecosystem-based management approaches that incorporate ecological restoration approaches and enact measures ensuring the conservation and management of fish stocks, which inherently involve protecting their habitats and, consequently, the marine ecosystem. Moreover, integrating ecological restoration into their mandates would offer a distinctive opportunity to highlight that healthy marine ecosystems are essential for the sustainability of fisheries. By, among other things, furthering their ecosystem approach that considers the interconnectedness of ecological, social, and economic factors, RFMOs have the potential to emerge as players by managing areas requiring ecological restoration.

While the legal and scientific literature extensively covers the relationship between fisheries and EAF,<sup>24</sup> and the scientific literature regarding restoration and ecosystem-based management is becoming established,<sup>25</sup> a significant gap remains in the legal literature regarding the relationship between marine restoration and fisheries. This gap is evident in a report by the European Commission in 2022, which highlighted, on the one hand, the extensive literature regarding the impacts of fisheries on marine ecosystems<sup>26</sup> and the different ecosystem restoration measures already existing in the current fisheries management measures (such as stock enhancement through habitat restoration),<sup>27</sup> and on the other, the lack of legislation regarding restoration measures within conventions of RFMOs.<sup>28</sup>

Despite the scientific literature on ecological restoration, there is a paucity of legal discourse on the subject<sup>29</sup> and limited examinations of the intersection between fisheries and ecological restoration. This paper investigates the relationship between ecological restoration and ocean fisheries governance, particularly within the framework of RFMOs. It aims to analyze this *nexus* and evaluate the potential for progress in this critical area. The following research question examines the connection between RFMOs and ecological restoration: "To what extent can regional fisheries management organizations (be adapted to) enhance ecological restoration?" Several sub-questions are addressed throughout the sections to lay the groundwork for such analysis.

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<sup>24</sup> Recognized in e.g., Md Monirul Islam, et al., *Status and potential of ecosystem approach to fisheries management (EAFM) in Bangladesh*, 219 OCEAN & COASTAL MANAGEMENT (2022), 2; P. Ramírez-Monsalve, et al., *Ecosystem Approach to Fisheries Management (EAFM) in the EU – Current science–policy–society interfaces and emerging requirements*, 66 MARINE POLICY (2016), 84.

<sup>25</sup> Recognized in e.g., Heather Leslie, et al., *Learning from Ecosystem-Based Management in Practice*, 43 COASTAL MANAGEMENT (2015), 472-473.

<sup>26</sup> The implementation of ecosystem-based approaches applied to fisheries management under the CFP. (June 2022), Annex III.

<sup>27</sup> *Ibid*, xiii.

<sup>28</sup> *Ibid*, 41.

<sup>29</sup> Highlighted for e.g. by Bastmeijer, *supra* note 9, at 396.

Section 2 focuses on ecological restoration as it currently stands, addressing three crucial questions: How is ecological restoration defined? Why is restoration necessary? How is it categorized within the marine environment? How is ecological restoration supported and regulated in international law, particularly fisheries-related instruments? Therefore, section 2 delves, on the one hand, into the definition of ecological restoration (section 2.1), its rationale (section 2.2.), its categorization (section 2.3), and on the other, into its legal framework in the international stage (section 2.4), including examinations of the Convention on Biological Diversity (CBD),<sup>30</sup> Convention on the Conservation of Migratory Species of Wild Animals (CMS),<sup>31</sup> United Nations Convention on the Law of the Sea (UNCLOS),<sup>32</sup> and the newly-established United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction Agreement (BBNJ Agreement).<sup>33</sup> Section 2.4 simultaneously explores UNCLOS's evolving legal basis for ecological restoration, highlighting its increasing recognition within scholarly discourse (section 2.4.3.1). Section 2.4. also dives into the European Union's development regarding ecological restoration.

Subsequently, in section 3, this paper harnesses the identified gaps in the governance framework surrounding ecological restoration to highlight the ocean framework governance and, especially, RFMOs as potential contributors to marine ecosystem restoration efforts. This section aims to answer the following sub-questions: What does the ocean fisheries governance framework entail? What are RFMOs, what are their roles and functions, and under which instruments do they hold their mandates? Why could RFMOs be considered potential actors towards the restoration of marine ecosystems? What are the barriers and challenges to implementing ecological restoration projects within the jurisdiction of RFMOs? And finally, how can the fundamental attribute of RFMOs – cooperation – provide an opportunity to support marine ecosystem restoration efforts? Therefore, Section 3.1 outlines the legal framework governing ocean fisheries' governance, introducing the leading organization established to manage fisheries resources in specific regions or areas beyond national jurisdiction: RFMOs, thus setting the stage for Section 3.2. This section analyzes three reasons why RFMOs already play a role in marine ecosystem restoration: the applied principle of ecosystem-based

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<sup>30</sup> United Nations, Convention on biological diversity (June 1992).

<sup>31</sup> United Nations, Convention on the conservation of migratory species of wild animals (23 June 1979) [Hereinafter, United Nations, CMS].

<sup>32</sup> United Nations, Convention on the Law of the Sea (10 December 1982) [Hereinafter, UNCLOS].

<sup>33</sup> United Nations, Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (19 June 2023) [Hereinafter United Nations, BBNJ Agreement (19 June 2023)].

management to fisheries (section 3.2.1), their range of competencies and enacted measures (section 3.2.2), and their enforcement mechanisms (section 3.2.3). Following this, section 3.3 identifies barriers and challenges observed at the interface between RFMOs and ecological restoration, while section 3.4 underscores the importance of collaboration and cooperation among RFMOs and between RFMOs and regional sea bodies. The last section proposes collaboration as a viable strategy for RFMOs to draw inspiration from esteemed institutions like OSPAR in marine ecosystem restoration. By adopting this approach, RFMOs can leverage collective expertise and resources to enhance their capacity for effective ecosystem restoration, ensuring the sustained health and productivity of marine environments worldwide. Finally, section 4 offers conclusions and reflections on potential avenues for further research.

The methodology employed in this paper is primarily legal doctrinal research, infused with insights from other disciplines to frame the problem and support legal arguments. Through legal analysis, the study aims to provide a comprehensive understanding of the interplay between ocean fisheries governance and ecological restoration. To achieve this objective, the research scrutinizes legal instruments, customary international law, and legal principles or approaches delineating the legal framework governing RFMOs and the concept of ecological restoration. This analysis uses techniques such as treaty interpretation and legal reasoning to present an overview of the legal landscape. Furthermore, a socio-legal approach is applied, analyzing the legal framework within the social context in which the law operates. Consequently, the policies and benefits of laws regarding the interface between ocean fisheries governance and ecological restoration are also examined. Since ecological restoration falls within the realm of environmental law, which is inherently interdisciplinary, this analysis also incorporates relevant scientific insights, particularly from marine biology and oceanography.

It is crucial to acknowledge that the legal framework surrounding restoration, like other legal landscapes, is continuously evolving yet has received relatively little political and legal attention. Therefore, given that the dynamic interaction of policy and legal development influences the restoration framework, changes can unfold rapidly. Consequently, this analysis may evolve alongside political agendas and emerging legal developments. By laying a robust foundation through legal analysis, this paper explores the intricate interface between ocean fisheries governance and ecological restoration, thereby contributing to a deeper understanding of their relationship.

One noteworthy limitation of this paper is its treatment of the scientific aspects related to the topic. This paper does not aim to establish or analyze the scientific foundations behind policy materials, nor does it assess scientific baselines or benchmarks for ecological restoration.

As noted by Guerrero-Gatica et al., historical ecological baselines to guide restoration and monitoring such baselines are significant challenges in achieving ecological restoration.<sup>34</sup> Consequently, this paper deliberately leaves the scientific aspects of ecological restoration aside. Moreover, since the relationship between ecological restoration and RFMOs is central to this paper, only specific types of restoration are considered due to RFMO's limited mandates. Additionally, only conventions applicable in areas where such organizations can enact measures are considered.

## 2. Ecological restoration in marine ecosystems

In a significant move, the United Nations designated the period from 2021 to 2030 as the 'Decade on Ecosystem Restoration'.<sup>35</sup> This global initiative, aimed at restoring degraded ecosystems to help meet the Sustainable Development Goals (SDGs), includes a specific focus on restoring marine ecosystems to ensure healthy and productive oceans (SDG 14).<sup>36</sup> Despite this influential UN declaration, the progress in terms of legal development towards ecological restoration has been limited. This section delves into the current legal representation of ecological restoration in the international sphere, setting the stage for an analysis of the role of RFMOs in promoting ecological restoration efforts.

Section 2.1 critically assesses different definitions of ecological restoration and establishes the glaring lack of a clear definition in legal instruments. This lack inhibits the establishment of targets and measures towards restoration goals, underscoring the need for more comprehensive legal frameworks. Furthermore, section 2.2 highlights the social utility of ecological restoration, focusing on the benefits towards ecosystem services and addressing the failure to prevent environmental degradation. Section 2.3 shifts the focus to the ocean and explores potential measures for marine ecological restoration, categorizing them into passive or active restoration efforts. This differentiation sets the stage for a subsequent section of this paper, wherein the potential role of RFMOs in promoting ecological restoration efforts will be assessed (section 3.3.2.). Subsequently, section 2.4 sets out the legal framework for marine ecological restoration. It evaluates the most important instruments relating to restoration, such

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<sup>34</sup> Matías Guerrero-Gatica, et al., *Shifting Gears for the Use of the Shifting Baseline Syndrome in Ecological Restoration*, 11 SUSTAINABILITY (2019), 1.

<sup>35</sup> UNEP/FAO, Resolution A/RES/73/2841, The UN Decade on Ecosystem Restoration 2021-2030 (March 2019).

<sup>36</sup> UN General Assembly, Transforming our world: the 2030 Agenda for Sustainable Development (21 October 2015).

as the CBD and analyses the CMS, which addresses fisheries and restoration within their provisions. Furthermore, it introduces UNCLOS and the BBNJ Agreement, relating them to ecological restoration and fisheries. Within the realm of UNCLOS, two legal developments of ecological restoration advanced by scholars are laid down: the emerging legal principle of ecological restoration and an implicit duty to restore within UNCLOS. These legal developments contribute to shaping the evolving discourse and practice surrounding ecological restoration on an international scale, creating momentum for international actors of the ocean governance to step up and take the lead in advancing marine ecological restoration efforts. Lastly, to complete the legal picture, the paper discusses the EU Nature Restoration Law proposed by the European Union, positioning themselves as a leader in environmental protection legislations.<sup>37</sup>

## 2.1. Definitions of ecological restoration

Cambridge Dictionary defines restoration as “the act or the process of returning something to its original condition, or to a state similar to its original condition”.<sup>38</sup> Notably, there are various types of restoration, with ecological restoration being one of them.<sup>39</sup> However, this definition may seem overly ambitious when applied to ecosystems, particularly marine ecosystems. Human activities and the effects of climate change have significantly altered these ecosystems, making it challenging, if not impossible, to restore them to their status quo.<sup>40</sup> Moreover, historical baselines to frame ecological restoration are, for most ecosystems, scientifically undocumented.<sup>41</sup> Information regarding ecological baselines before a perturbation is often lacking.<sup>42</sup> The idea of returning to the ecosystem's pristine, pre-disturbance state is unrealistic, and the Society for Ecological Restoration (SER) takes a more feasible approach. As a leader in ecological restoration, SER advocates for its advancement through policy positions, technical documents, and its status as a member of the International Union for Conservation of Nature (IUCN) and an observer to the CBD. SER defines ecological restoration as: “the process of

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<sup>37</sup> Eva Zabey, *Business leaders: why the EU must adopt the Nature Restoration Law*, *World Economic Forum* (12 June 2023), available at <https://www.weforum.org/agenda/2023/06/eu-legislation-nature-climate-crisis/#:~:text=Recognized%20as%20a%20global%20leader,protection%20and%20socio%2Deconomic%20priorities> (last accessed 30<sup>th</sup> May 2024).

<sup>38</sup> Cambridge Academic Dictionary, “Restoration”.

<sup>39</sup> Door Anastasia Teletsky, et al., *ECOLOGICAL RESTORATION IN INTERNATIONAL ENVIRONMENTAL LAW* (Routledge. 2017), 22.

<sup>40</sup> *Ibid*, 17.

<sup>41</sup> Guerrero-Gatica, *supra* note 34.

<sup>42</sup> *Ibid*.

assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.”<sup>43</sup> This definition is frequently used and supplemented by other international entities, such as the Conference of the Parties to the CBD (COP CBD). The latter uses the SER definition in its Guide to the Aichi Biodiversity Targets Ecosystems<sup>44</sup> and supplements it with objectives. For instance, COP CBD underlines ecological restoration “as a means of sustaining ecosystem resilience and conserving biodiversity.”<sup>45</sup>

However, some controversies remain surrounding the concept of ecological restoration. For example, debate persists regarding the restoration benchmark, particularly concerning whether the pre-damaged conditions of ecosystems should serve as the reference point towards which restoration efforts should aim. Some authors argue that historical references are insufficient for restoration.<sup>46</sup> Instead, they propose to rely on recovering conditions that have been lost while considering the different influences, such as the interactions between the ecosystems, the species, and the trophic chain or external influences, such as climate change.<sup>47</sup> Others argue that references should be sought in pristine ecosystems such as wild and protected areas untouched by human impacts. They highlight the necessity of incorporating additional criteria that account for continuously evolving ecosystems and human activities' impacts.<sup>48</sup>

Moreover, opinions diverge regarding when restoration is deemed to be achieved. For some, it is considered to be completed when sufficient abiotic and biotic resources exist for the ecosystem to develop without further assistance.<sup>49</sup> For others, it is achieved when a favorable conservation status is reached.<sup>50</sup> For example, at the European level, the Habitats Directive aims for the favorable conservation status of species mentioned in the Directive.<sup>51</sup>

While the SER offers valuable insights into ecological restoration,<sup>52</sup> there is a conspicuous absence of international legal instruments that provide specific definitions for

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<sup>43</sup> Society for Ecological Restoration International Science & Policy Working Group, THE SER INTERNATIONAL PRIMER ON ECOLOGICAL RESTORATION (Society for Ecological Restoration International. 2004), 3.

<sup>44</sup> CBD, Quick guide to the Aichi Biodiversity Targets Ecosystems restored and resilience enhanced. (2 February 2013).

<sup>45</sup> *ibid.*

<sup>46</sup> James A. Harris, et al., *Ecological Restoration and Global Climate Change*, 14 RESTORATION ECOLOGY (2006), 175.

<sup>47</sup> *Ibid.*, 170-176; Bastmeijer, *supra* note 9, at 390.

<sup>48</sup> Geoffrey Garver, *Ecological Integrity in the Anthropocene: Lessons for Law from Ecological Restoration and Beyond*, in THE ROLE OF INTEGRITY IN THE GOVERNANCE OF THE COMMONS: GOVERNANCE, ECOLOGY, LAW, ETHICS (Janice Gray Laura Westra, Franz-Theo Gottwald ed. 2017), 195-196.

<sup>49</sup> Society for Ecological Restoration International Science & Policy Working Group, *supra* note 43.

<sup>50</sup> Bastmeijer, *supra* note 9, at 391; An Cliquet, *Ecological Restoration as a Legal Duty in the Anthropocene*, in CHARTING ENVIRONMENTAL LAW FUTURES IN THE ANTHROPOCENE (Michelle Lim ed. 2019), 64.

<sup>51</sup> EU, Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (21 May 1992) [hereinafter EU, Habitats Directive]; Cliquet, *supra* note 50.

<sup>52</sup> Teletsky et al., *supra* not 39, at 23.

restoration. As observed by Cliquet and others, the lack of definition complicates the establishment of targets and the translation of the concept into measurable progress.<sup>53</sup> The Conference of the Parties to the Convention on Biological Diversity has recognized this challenge and relies on SER as a reference point to guide parties in achieving various biodiversity targets.<sup>54</sup> However, despite SER's definition established in 2004, the CBD has not provided a precise definition to apply consistently across its reports and decisions.<sup>55</sup> Consequently, the COP has requested the CBD Executive Secretary to engage the SER in crafting a comprehensive definitions of terms.<sup>56</sup> Despite the lack of responsiveness from the SER, this endeavour aimed to facilitate and enhance policymaking efforts within the biodiversity realm.<sup>57</sup>

Marine ecosystem restoration, unsurprisingly, encounters the same legal void in terms of clear definitions. However, for the scope of this paper, marine ecosystem restoration will be conceptualized within the framework outlined by the SER, defining it as an ongoing process dedicated to aiding the recovery of marine ecosystems that have suffered degradation, damage, or destruction.<sup>58</sup> While this definition does not explicitly delineate end goals, responsibilities, or the specific scope of ecosystem restoration efforts, it serves as a foundational guide for examining laws and initiatives that align with ecological restoration objectives. Potential developments regarding the SER definition can be informed by the EU Nature Restoration Law,<sup>59</sup> as discussed in section 2.4.5. By integrating the SER framework, this paper aims to understand marine ecosystem restoration as a conservation imperative comprehensively.

## 2.2. Rationales

While ecological restoration is generally conducted for environmental reasons, it also serves various other purposes, including cultural and economic ones.<sup>60</sup> Regarding the financial aspect, Wang et al. highlight marine ecosystem restoration as an investment in rehabilitating damaged

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<sup>53</sup> *Ibid.*, 18.

<sup>54</sup> CBD, Most Used Definitions/Descriptions of Key Terms Related to Ecosystem Restoration (6 September 2012); Dolly Jørgensen, *Ecological restoration in the Convention on Biological Diversity targets*, 22 BIODIVERSITY AND CONSERVATION (2013), 2978-2979.

<sup>55</sup> *Ibid.*

<sup>56</sup> CBD, Most Used Definitions/Descriptions of Key Terms Related to Ecosystem Restoration (6 September 2012), note 4(e).

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

<sup>58</sup> Society for Ecological Restoration International Science & Policy Working Group, *supra* note 43.

<sup>59</sup> European Commission, *Nature Restoration Law*, available at [https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law_en) (last accessed 30<sup>th</sup> May 2024).

<sup>60</sup> James Aronson, *What can and should be legalized in ecological restoration?*, 34 REVISTA ÁRVORE (2010), 452.



or degraded marine environments. This perspective underscores the intrinsic value of restoring these ecosystems in terms of ecological health and in revitalizing their capacity to provide essential services and goods.<sup>61</sup> Despite the fascinating financial aspect of marine ecosystem restoration, this section focuses on social benefits of ecological restoration. Two social aims of ecological restoration are elucidated here.

Firstly, ecological restoration is frequently associated with enhancing ecosystem services, deemed essential for human well-being.<sup>62</sup> The over-exploitation of natural resources and the resulting disturbances to ecosystems have significant repercussions on biodiversity, consequently affecting ecosystem services.<sup>63</sup> Ecosystem services are used to determine the ‘usefulness of biodiversity’.<sup>64</sup> It is often defined, for instance, by the CBD as the provisioning of services which come from nature and benefit humans or contribute to social welfare.<sup>65</sup> However, biodiversity, as the foundation of ecosystems and their services,<sup>66</sup> is valuable to people and influences the resilience capacity of the ecosystems against environmental changes, including those caused by climate change.<sup>67</sup> Ecological restoration is a means to “initiate[s] or accelerate[s] the recovery of an ecosystem with respect to its health, integrity, and sustainability”.<sup>68</sup> By increasing the buffering capacity of ecosystems, ecological restoration ensures the continued provision of ecosystem services. While the concept of ecosystem services is often criticized as highly anthropocentric, it offers several advantages, as it can enhance public and political support and be considered legitimate for new financial arrangements.<sup>69</sup> Ecosystem services frame ecological targets in anthropocentric terms, aligning with “self-centred” and “pro-use” attitudes towards nature.<sup>70</sup> This perspective results in a higher appeal for ecological restoration by emphasizing its benefits to human well-being.<sup>71</sup> As observed by

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<sup>61</sup> Wang et al., *supra* note 12.

<sup>62</sup> CBD, Global Biodiversity Outlook 3 (10 May 2010), 13; David M. Martin, *Ecological restoration should be redefined for the twenty-first century*, 25 RESTORATION ECOLOGY (2017), 671; Danovaro, *supra* note 1, at 6.

<sup>63</sup> Bastmeijer, *supra* note 9, at 387.

<sup>64</sup> CBD, Ecosystem Services, available at <https://www.cbd.int/undb/media/factsheets/undb-factsheet-ecoserv-en.pdf> (last accessed 30<sup>th</sup> May 2024).

<sup>65</sup> Millennium Ecosystem Assessment, Ecosystem and Human Well-being: Biodiversity Synthesis. (March 2005), 1.

<sup>66</sup> Fourth National Climate Assessment, Ecosystems, ecosystem services and biodiversity. (2018).

<sup>67</sup> David M. Martin, *Ecological restoration should be redefined for the twenty-first century*, 25 RESTORATION ECOLOGY (2017), 671; F. Stuart Chapin III, et al., *Consequences of changing biodiversity*, 405 NATURE (2000); Teletsky et al., *supra* note 39, at 2.

<sup>68</sup> Society for Ecological Restoration International Science & Policy Working Group, *supra* note 43.

<sup>69</sup> Bastmeijer, *supra* note 9, at 412.

<sup>70</sup> Virginia Matzek & Kerrie A Wilson, *Public support for restoration: Does including ecosystem services as a goal engage a different set of values and attitudes than biodiversity protection alone?*, 16 PLOS ONE (2021), 1.

<sup>71</sup> *Ibid*, 2.

Matzek et al., support and funding for ecological restoration projects increase when these projects are linked to ecosystem services.<sup>72</sup>

Additionally, ecosystem services provide incentives to address the current ecological crises.<sup>73</sup> Applied to the marine environment, ecosystem services are enhanced by marine ecological restoration, ensuring the preservation of essential benefits derived from the marine environment.<sup>74</sup> Services, such as food supply, coastal protection, climate mitigation, and recreational opportunities, cannot be guaranteed without passive and/or active restoration measures, including removing stressors, habitat rehabilitation, or species reintroduction.<sup>75</sup>

Secondly, some justify the concept of ecological restoration as promising to address the current failure to prevent environmental degradation.<sup>76</sup> When examining reports and studies concerning the marine environment, efforts to prevent degradation are often limited or, as argued by Bastmeijer, deemed ineffective.<sup>77</sup> For example, despite obligations under the UN Fish Stocks Agreement to prevent overfishing,<sup>78</sup> FAO reported in 2019 that 35.4% of the world's captured fish stocks were classified as overfished.<sup>79</sup> In instances where prevention measures have not been successful nor undertaken, ecological restoration can be approached as a complementary strategy,<sup>80</sup> particularly in ecosystems that have already undergone substantial damage.<sup>81</sup> Additionally, restoration could enhance the principle of prevention, as ensuring the long-term effectiveness of restoration measures requires preventing damage to the restored values.<sup>82</sup> Depicting this, instruments and mechanisms increasingly ensure that the beneficiaries of nature have the obligation to protect and restore the nature from which they benefit.<sup>83</sup>

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<sup>72</sup> *Ibid.*

<sup>73</sup> Matthias Schröter, et al., *Ecosystem Services as a Contested Concept: a Synthesis of Critique and Counter-Arguments*, 7 CONSERVATION LETTERS (2014), 515.

<sup>74</sup> *Ibid.*

<sup>75</sup> Thomas Luypaert, et al., *Status of Marine Biodiversity in the Anthropocene*, in *YOUMARES 9 - THE OCEANS: OUR RESEARCH, OUR FUTURE* (Simon Jungblut, et al. eds., 2020), 58; Abelson, *supra* note 22 at 157; Megan I. Saunders, et al., *Bright Spots in Coastal Marine Ecosystem Restoration*, 30 CURRENT BIOLOGY (2020), 1500; Sarah E. Lester, et al., *Spatial Planning Principles for Marine Ecosystem Restoration*, 7 FRONTIERS IN MARINE SCIENCE (2020), 1.

<sup>76</sup> Bastmeijer, *supra* note 9, at 387.

<sup>77</sup> *Ibid.*, 389.

<sup>78</sup> UN General Assembly, Resolution adopted by the General Assembly on 17 November 2004 on 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 (17 January 2004), [Hereinafter, UN General Assembly, Resolution A/RES/59/25], Art. 5(h).

<sup>79</sup> FAO, *In Brief to The State of World Fisheries and Aquaculture 2022* (2022), 4.

<sup>80</sup> Bastmeijer, *supra* note 9, at 410.

<sup>81</sup> Abelson, *supra* note 22 at 162.

<sup>82</sup> Bastmeijer, *supra* note 9.

<sup>83</sup> *Ibid.*, 412.

Whether restoration is pursued to enhance ecosystem services or to address the failure to prevent environmental damage, its application could benefit both the ecosystem and society. Indeed, when implemented effectively,<sup>84</sup> ecological restoration plays a pivotal role in safeguarding native biodiversity, aiding climate change mitigation, resilience, and adaptation efforts, promoting human health and well-being, bolstering food and water security and fostering economic prosperity.<sup>85</sup> Restoration efforts can target various ecosystems, including forests, farmlands, urban areas, peatlands, and oceans.<sup>86</sup> This paper focuses specifically on oceanic areas where several measures can be taken, ranging from habitat restoration to establishing marine protected areas, leading to the next section.

### 2.3. Passive and active ecological restoration

Restoration measures can be categorized into two types: passive and active. For example, habitat restoration can be pursued through active interventions, such as replanting seagrass, or passive interventions, like preserving habitats undisturbed within protected areas to facilitate natural recovery. Each of these restoration strategies carries its own set of limitations and associated costs.<sup>87</sup>

It has been acknowledged that passive restoration, limited to removing or reducing present threats and pressures,<sup>88</sup> may require decades before positive effects become evident.<sup>89</sup> This recognition is particularly true for deep-sea habitats characterized by slow-paced biochemical processes and species with extended life cycles.<sup>90</sup> Some scholars advance passive restoration over active interventions in instances where the removal of the stressors or the mere refrain from interactions is sufficient to trigger natural recovery over a so-called “reasonable time period”.<sup>91</sup> However, where the stressors cannot be removed or reduced or where damages and degradation have been too important for the ecosystem to rehabilitate by itself, active restoration measures should be part of the ecosystem management.<sup>92</sup>

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<sup>84</sup> See examples of successful nature restoration projects at European Commission, *Nature restoration success stories*, available at [https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law/success-stories\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law/success-stories_en) (last accessed 30<sup>th</sup> May 2024).

<sup>85</sup> Danovaro, *supra* note 1, at 2.

<sup>86</sup> UN Decade on Ecosystem Restoration, *supra* note 2.

<sup>87</sup> European Commission, Impact Assessment Report Annex VI-b Accompanying the proposal for a Regulation of the European Parliament and of the Council on nature restoration. (22 June 2022), 422.

<sup>88</sup> Jacob, *supra* note 20.

<sup>89</sup> Ministère de l'enseignement supérieur et de la recherche, *Restoration of deep-sea habitats* (2022), available at <https://www.horizon-europe.gouv.fr/restoration-deep-sea-habitats-33229> (last accessed 30<sup>th</sup> May 2024).

<sup>90</sup> *Ibid.*

<sup>91</sup> Abelson, *supra* note 22 at 162.

<sup>92</sup> *Ibid.*; Danovaro, *supra* note 1, at 6.

Furthermore, the importance of implementing active restoration measures in cases where natural recovery alone cannot fully restore the ecosystem to its pre-damaged state has even been underscored by the International Court of Justice (ICJ) in paragraph 41 of the *Costa Rica v. Nicaragua* case.<sup>93</sup> In this landmark ruling, the ICJ addressed the entitlement to compensation for restoration costs, marking the Court's inaugural adjudication on such a claim.<sup>94</sup> Despite the Court's acknowledgement of the distinction between natural recovery and active restoration measures, its importance has not been widely discussed. Moreover, although the case primarily dealt with internationally wrongful acts and their repercussions, and notwithstanding the dearth of legal literature on the pertinence of paragraph 41 to ecological restoration, its importance must be considered.

Beyond this distinction between active and passive restoration, marine ecosystem restoration represents a new frontier in restoration ecology. Whether one considers passive or active restoration measures, substantial challenges impede its effective implementation. One major obstacle is the lack of baseline information and scientific certainty about many parts of the ocean, making it difficult to accurately assess the extent of damage and determine restoration needs.<sup>95</sup> Additionally, the marine environment presents technical challenges, such as the need to work underwater and the limited knowledge about many species and habitats,<sup>96</sup> particularly in the deep-sea bed.<sup>97</sup> Moreover, the cost of marine restoration projects and ongoing monitoring poses a significant hurdle<sup>98</sup> because assessing the effectiveness of restoration measures requires long-term observation, and immediate results are often challenging to quantify.<sup>99</sup> Furthermore, the allocation of sovereignty and jurisdiction over the ocean raises complex legal and jurisdictional challenges, complicating efforts to coordinate and implement restoration initiatives across different territories and governance structures.<sup>100</sup>

Despite these challenges, marine ecosystem restoration holds promise for safeguarding the natural services on which humans depend and enhancing the resilience of marine

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<sup>93</sup> *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*. Compensation owed by the Republic of Nicaragua to the Republic of Costa Rica, (ICJ, 2018), para 43.

<sup>94</sup> *Ibid*, paras. 40-41.

<sup>95</sup> Danovaro, *supra* note 1, at 3; Margaret A Palmer & JB Ruhl, *Aligning restoration science and the law to sustain ecological infrastructure for the future*, 13 FRONTIERS IN ECOLOGY AND THE ENVIRONMENT (2015), 513.

<sup>96</sup> Danovaro, *supra* note 1, at 3.

<sup>97</sup> Schwarte, *supra* note 4, at 1 and 6.

<sup>98</sup> Danovaro, *supra* note 1, at 4.

<sup>99</sup> OSPAR Commission, *Benthic Habitats Thematic Assessment* (2023), available at <https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/benthic-habitats/> (last accessed 30<sup>th</sup> May 2024).

<sup>100</sup> Danovaro, *supra* note 1, at 4.

ecosystems.<sup>101</sup> By addressing these obstacles through clear principles and guidance in laws and policies, stakeholders can overcome barriers and advance practical restoration efforts.<sup>102</sup> This highlights the significance of the upcoming section, which delves into the existing legal frameworks for marine ecosystem restoration, acknowledging their current inadequacy in addressing the complexities of this endeavour.

## 2.4. Ecological restoration in International Law

Various international instruments emphasize the importance of protecting and conserving biodiversity in the ocean. However, ecological restoration lacks comparable legal recognition. Within international law, ecological restoration is frequently disregarded, pointing to its limited acknowledgement and integration into legal frameworks.<sup>103</sup> Nevertheless, some exceptions do exist. This section outlines the treaty and policy drivers of ecological restoration. While these instruments can contribute to ecological restoration efforts, including through area-based management measures, the analysis below highlights that such legal frameworks are not primarily aimed at ecological restoration and face significant challenges. These include the absence of a clear legal definition of ecological restoration and difficulties in implementation and compliance, further discussed within the context of each legal instrument.

Where restoration obligations do exist, they typically fall into three primary categories.<sup>104</sup> As divided by Cliquet,<sup>105</sup> the first category entails obligations enshrined within nature conservation laws, such as those outlined in the Biodiversity Convention. Fisheries management often falls under the purview of nature conservation laws as it may impose responsibilities on states or relevant stakeholders to safeguard and restore the marine environment, fostering conditions conducive to biodiversity conservation. The second category involves restoration obligations related to infrastructure projects in which compensatory measures are mandated to counteract environmental harm, such as restoring or enhancing affected habitats. For example, the EU Habitats Directive requires compensation for projects impacting the Natura 2000 network.<sup>106</sup> Such obligations also relate to the fisheries sector as

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<sup>101</sup> Ecologic Institute, *supra* note 6.

<sup>102</sup> An Cliquet, *International Law and Policy on Restoration*, in ROUTLEDGE HANDBOOK OF ECOLOGICAL AND ENVIRONMENTAL RESTORATION (Stuart K. Allison & Stephen D. Murphy eds., 2017), 387.

<sup>103</sup> Benjamin Richardson, *The Emerging Age of Ecological Restoration Law*, 25 REVIEW OF EUROPEAN, COMPARATIVE & INTERNATIONAL ENVIRONMENTAL LAW (2016), 280.

<sup>104</sup> Cliquet, *supra* note 102.

<sup>105</sup> Division made in *Ibid*.

<sup>106</sup> EU, Habitats Directive, *supra* note 51, at Art. 6(4).

obligations to offset their environmental impacts also apply to fisheries infrastructure projects. Lastly, the third category pertains to liability regimes for environmental damage (e.g. Convention on Civil Liability for Oil Pollution Damage), which oblige parties responsible for pollution damage, for example, an oil spill from a fishing vessel, to compensate to restore the affected marine environment to its original state or an agreed-upon condition.<sup>107</sup>

Given the focus of this paper on exploring the intersection between ocean fisheries governance and ecological restoration, the subsequent section delves exclusively into the relevant legal instruments pertinent to this assessment. Notably, since the relationship between ecological restoration and RFMOs is central to this paper, only specific types of restoration are considered due to the limited mandates of RFMOs. Moreover, only conventions applicable in areas where such organizations can enact measures are considered. Thus, the Ramsar Convention,<sup>108</sup> highly relevant to restoration<sup>109</sup> but pertaining to wetlands outside the competence of RFMOs, is omitted. Only conventions relevant to biodiversity conservation and, as argued in this paper, relating to RFMOs' duties and powers are assessed. These encompass the CBD (Section 2.4.1) and CMS (Section 2.4.2.), explicitly mentioning restoration within their provisions. Additionally, UNCLOS (Section 2.4.3.) and BBNJ (Section 2.4.4.), are also scrutinized as they are deemed pertinent to the ecological restoration of marine ecosystems. Furthermore, the EU legislation on the topic is added to the paper (Section 2.4.5.) as the EU seeks to lead ecological restoration efforts through its proposed EU Nature Restoration Law. Therefore, the latter will be examined along with its connection with the fisheries sector, including the Common Fisheries Policy and the existing EU legislation relevant to ecological restoration, namely the Birds Directive,<sup>110</sup> Habitats Directive,<sup>111</sup> Water Strategy Framework Directive,<sup>112</sup> and Marine Strategy Framework Directive.<sup>113</sup>

For this examination, the SER definition of ecological restoration, as referenced in section 2.1., serves as the framework to identify laws contributing to restoration in this section.

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<sup>107</sup> United Nations, International Convention on Civil Liability for Oil Pollution Damage (27 November 1992), see Art. 1.6(a) and the liability articles.

<sup>108</sup> United Nations, Convention on wetlands of international importance especially as waterfowl habitat (2 February 1971).

<sup>109</sup> Bastmeijer, *supra* note 9, at 392.

<sup>110</sup> EU, Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (30 November 2009) [Hereinafter, EU, Birds Directive]

<sup>111</sup> EU, Habitats Directive, *supra* note 51.

<sup>112</sup> EU, Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (23 October 2000). [Hereinafter, EU, Water Strategy Framework Directive].

<sup>113</sup> EU, Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (17 June 2008) [Hereinafter, EU, Marine Strategy Framework Directive].

Although this definition does not explicitly outline end goals, duties, or the scope of an ecosystem nor does it specify conditions for restoration, it nonetheless offers a foundation for analyzing laws and measures that align with ecological restoration aims. Furthermore, the classification of active and passive restoration measures established in section 2.3 is utilized to categorize existing restoration obligations enshrined in the different legal instruments.

At this point, it is important to note the relevance of the treaties mentioned below to RFMOs. RFMOs, as intergovernmental organizations (IOs),<sup>114</sup> face contentious issues regarding their capacity to enter into treaties, which may hamper their capacity to engage with treaties relevant to restoration legal advancement. This debate stems from the 1986 Vienna Convention on the Law of Treaties between States and International Organizations or between International Organizations,<sup>115</sup> which has not yet achieved the minimum ratification threshold of 35 states.<sup>116</sup> On the one side, most scholars argue that the provisions of the 1986 Vienna Convention, which highlight the capacity of IOs to become parties to certain treaties, are generally accepted in international law.<sup>117</sup> Conversely, some disagree with this view, underscoring the need for the 1986 Vienna Convention's enactment to affirm IO treaty-making capacity and thereby creating a debate.<sup>118</sup> As it currently stands, IOs, including RFMOs, are not parties to treaties such as the CBD, the CMS, the UNCLOS, and the BBN Agreement. These conventions bind states that have ratified, accepted, or approved them<sup>119</sup> but not IOs.

Despite this, the relevance of these conventions to RFMOs and, thereby, to this paper should not be dismissed. IOs are composed of states, the primary actors in the international arena<sup>120</sup> and an influence is thereof observed. There are two views on how treaty conducted by states affect IOs. On the one hand, Brölmann asserts that IOs are influenced by the treaties conducted by their member states precisely because they are composed of these states.<sup>121</sup> On

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<sup>114</sup> United Nations, Vienna Convention on the Law of Treaties (23 May 1969), [Hereinafter, United Nations, VCLT], Art. 2(i).

<sup>115</sup> United Nations, Vienna Convention on the Law of Treaties between States and International Organizations or between International Organizations (12 March 1986), [Hereinafter, United Nations, 1986 VCLT], the preamble and Art. 6 recognize IOs' capacity to become parties to certain treaties.

<sup>116</sup> *Ibid.*, Art. 85.

<sup>117</sup> Olufemi Elias, *Who Can Make Treaties? International Organizations*, in THE OXFORD GUIDE TO TREATIES (2ND EDITION) (Duncan B. Hollis ed. 2020), 98, 101 and 105.

<sup>118</sup> Kristina Daugirdas, *How and why international law binds international organizations*, 57 HARV. INT'L LJ (2016), 334.

<sup>119</sup> United Nations, VCLT *supra* note 114, at Arts. 2(b) and 11.

<sup>120</sup> Catherine Brölmann, *THE LEGAL NATURE OF INTERNATIONAL ORGANISATIONS AND THE LAW OF TREATIES*, 4 AUSTRIAN REVIEW OF INTERNATIONAL AND EUROPEAN LAW ONLINE (2000), 85.

<sup>121</sup> *Ibid.*, 86.

the other, Daugirdas, agreeing with Schermers and Blokker, argues that IOs are "transitively bound" by their member states' treaty obligations.<sup>122</sup>

The notion of a treaty being "binding" refers to the concept of consent, which is highly important in treaties and must be expressed by a state or an IO.<sup>123</sup> Since a treaty is not binding on a state or IO that has not consented to it,<sup>124</sup> the second proposition should be considered carefully. However, the first proposition offers some grounds for reflection. Even though IOs operate under their regimes,<sup>125</sup> they act as agents of their member states.<sup>126</sup> States must comply with their treaty obligations,<sup>127</sup> and they cannot undermine the object or purpose of these treaties in any exercise of authority.<sup>128</sup> While IOs may not be direct parties to these treaties, they are impacted by their member states' obligations. Therefore, whether through being "transitively" bound by member states' treaty obligations or *de facto* influenced by these obligations, IOs' operations and decisions are impacted by the principles and obligations of the treaties that bind their member states. Thus, the treaties mentioned below, ratified by the states that are parties to RFMOs, are relevant to the scope of this paper.

#### 2.4.1. Convention on Biological Diversity (CBD)

As previously noted, even though restoration is often described as a key conservation measure in several international agreements, the definition of the term is not to be found in any treaties. The Convention on Biological Diversity is no exception.<sup>129</sup> One of the reasons for this lack of definition is that restoration is not the final goal of the CBD.<sup>130</sup> The latter advances biodiversity conservation as a climate change mitigation and adaptation solution due increased in ecosystem resilience and biological carbon intake, initially staying away from restoration goals.<sup>131</sup> However, the CBD holds significant relevance in the legal development of ecological restoration for several reasons, three of which are highlighted below. However, the significance of the CBD to marine ecosystem restoration and fisheries is established beforehand.

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<sup>122</sup> *Ibid.*, 85; H.G. Schermers & N. Blokker, *INTERNATIONAL INSTITUTIONAL LAW: UNITY WITHIN DIVERSITY* (Martinus Nijhoff Publishers. 2003), §1574.

<sup>123</sup> United Nations, 1986 VCLT, *supra* note 115, at Arts. 11-17 jo. Art. 2.

<sup>124</sup> United Nations, VCLT *supra* note 114, at Art. 34; United Nations, 1986 VCLT, *supra* note 115, at Art. 34.

<sup>125</sup> Brölmann, *supra* note 120.

<sup>126</sup> Gerarld Neuman, *International Organizations and Human Rights—the Need for Substance.* (2019), 4.

<sup>127</sup> United Nations, VCLT *supra* note 114, at Art. 26.

<sup>128</sup> *Ibid.*, Art. 18(b).

<sup>129</sup> Cliquet, *supra* note 102, at 388; Jørgensen, *supra* note 54, at 2979.

<sup>130</sup> Jørgensen, *supra* note 54, at 2980.

<sup>131</sup> *Ibid.*



While the CBD does not exclusively target marine ecosystems, its scope extends comprehensively across all ecosystems, including the ocean. This inclusivity is demonstrated, for example, in article 22 CBD, where the relationship of the Convention with the UNCLOS is established.<sup>132</sup> This article highlights that implementing this Convention on the marine environment has to be conducted while respecting the obligations and rights under UNCLOS. Moreover, CBD's inclusivity towards the ocean is illustrated by various initiatives, two of which are elucidated here.

Firstly, the Jakarta Mandate, an action plan adopted by the COP, is designed to implement the CBD's principles with a specific emphasis on conserving and managing marine and coastal biodiversity.<sup>133</sup> Secondly, the CBD's commitment to enhancing sustainable fisheries is evident in COP Decision X/29, which calls for collaborative efforts among multiple institutions to address the impacts of fishing on biodiversity and develop mitigation strategies.<sup>134</sup> This initiative resulted in convening a "joint expert meeting on addressing biodiversity concerns in sustainable fisheries,"<sup>135</sup> showcasing the CBD's dedication to promoting sustainable management practices that preserve biodiversity across marine environments. Therefore, despite the absence of direct mention of fisheries in the CBD, its overarching objective encompasses biological diversity, thereby applicable to all living resources, including those in the marine environment. Having established the relevance of the CBD to the focus of this paper, namely marine ecosystem restoration and fisheries, the subsequent section delves into the significance of the CBD in the legal evolution of ecological restoration.

Firstly, ecological restoration obligations are found explicitly in Article 8 of the CBD, which emphasizes the protection and restoration of ecosystems.<sup>136</sup> Article 8(f) mandates explicitly each contracting party to "rehabilitate and restore degraded ecosystems and promote the recovery of threatened species through the development and implementation of management strategies". Additionally, Article 10(d) of the CBD requires contracting parties to "support local populations in developing and implementing remedial actions in degraded areas where biological diversity has been reduced". These remedial actions aim to restore ecosystems

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<sup>132</sup> United Nations, Convention on biological diversity (June 1992), Art. 22

<sup>133</sup> CBD, Jakarta Mandate on Marine and Coastal Biodiversity, including the terms of reference of the Meeting of Experts on marine and coastal biodiversity (30 January 1997).

<sup>134</sup> CBD, Decision X/29, Marine and coastal biodiversity (29 October 2010), para. 53.

<sup>135</sup> CBD, Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries (7-9 December 2011).

<sup>136</sup> Hanling Wang, *Ecosystem Management and Its Application to Large Marine Ecosystems: Science, Law, and Politics*, 35 OCEAN DEVELOPMENT AND INTERNATIONAL LAW - OCEAN DEV INT LAW (2004), 51.

to their previous conditions.<sup>137</sup> Nevertheless, the lack of specificity regarding required measures leads to the contracting parties' possibility of fulfilling their treaty obligations through passive and/or active restoration measures.

Secondly, a shift towards recognizing ecological restoration can be observed in various policy documents issued by the CBD COP, particularly since the early 2000s.<sup>138</sup> Notably, the CBD Strategic Plan for Biodiversity 2011-2020 highlights the importance of restoration within its 2050 conservation objectives.<sup>139</sup> The so-called Aichi Biodiversity Targets, or SMART targets,<sup>140</sup> are formulated to ensure measurable progress towards conservation objectives.<sup>141</sup> Three key targets are pertinent to marine ecosystem restoration: Targets 11, 14, and 15.

While Target 11 does not explicitly mention restoration, it emphasizes the importance of conserving a percentage of areas by establishing protected areas and other effective conservation measures.<sup>142</sup> Decision X/31 guides restoring ecosystems and habitats within these protected areas, indicating the implicit inclusion of restoration activities in the broader conservation efforts outlined in Target 11.<sup>143</sup> Furthermore, Target 11 advocates for creating a network of protected areas, termed "well-connected systems of protected areas," which significantly contributes to restoration objectives by enhancing ecological corridors and bolstering biodiversity resilience.<sup>144</sup> On the other hand, Target 14 explicitly includes the goal of ecosystem restoration to ensure the provision of essential services.<sup>145</sup> Finally, Target 15 stands out as the most explicit and relevant for restoration efforts, as it sets a percentage goal for restoration and prescribes immediate action for biodiversity conservation through measures such as "protected areas [establishment], habitat restoration, species recovery programs, and other targeted conservation interventions."<sup>146</sup> Decision X/9 supplements Target 15 by effectively outlining strategies to achieve this restoration goal.<sup>147</sup>

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<sup>137</sup> Bastmeijer, *supra* note 9, at 392.

<sup>138</sup> Cliquet, *supra* note 102, at 389.

<sup>139</sup> CBD, Decision X/2: The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (29 October 2010), para. 10(c)

<sup>140</sup> SMART targets defined as specific, measurable, ambitious, realistic and time-bound. CBD, The Post-2020 Biodiversity Framework: Targets, Indicators, and Measurability Implications at the Global and National Level (13 November 2019), 6.

<sup>141</sup> Jørgensen, *supra* note 54, at 2978.

<sup>142</sup> CBD, Decision X/2: The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (29 October 2010), para. 9

<sup>143</sup> CBD, Decision X/31: Protected areas (29 October 2010), para. 7(a) and (b).

<sup>144</sup> Cliquet, *supra* note 102, at 389.

<sup>145</sup> *Ibid.*

<sup>146</sup> CBD, Decision X/2: The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (29 October 2010), para. 10(c)

<sup>147</sup> CBD, Decision X/9, The multi-year programme of work for the Conference of the Parties for the period 2011–2020 and periodicity of meetings (29 October 2010), item (a) (ix).

However, challenges arise with the targets as they lack pre-assessed considerations due to the absence of clear definitions for restoration, ecosystems, and degraded ecosystems, as well as a global evaluation of necessary actions to meet the targets.<sup>148</sup> This may lead governments to minimize their required inputs by reporting degraded ecosystems to their advantage.<sup>149</sup> Thus, the CBD must implement definitions or conduct assessments to establish realistic restoration targets.<sup>150</sup> The CBD recommended defining restoration according to the “Ecological Restoration for Protected Areas Guideline”<sup>151</sup> to ensure that restoration is measurable and aligned with SMART criteria, emphasizing ecosystem-based management over species restoration.<sup>152</sup> Additionally, the targets lack long-term goals and guidance on sustaining restoration efforts, posing implementation challenges.<sup>153</sup> A report revealed that while 50% of CBD parties have integrated Target 15 into national targets, only 17% have achieved the restoration level set by the target, indicating implementation difficulties.<sup>154</sup>

Despite these low implementation percentages, the CBD reiterated ecosystem restoration goals in the Kunming-Montreal Global Biodiversity Framework during the 15th Conference of the Parties to the Convention on Biological Diversity in December 2022.<sup>155</sup> Whereas the Aichi Biodiversity Targets required the restoration of at least 15% of the degraded ecosystems by 2020,<sup>156</sup> the Kunming-Montreal Global Biodiversity Framework elevates the percentage to 30 by 2030.<sup>157</sup> Moreover, while the Aichi Biodiversity Targets used restoration as a mitigation strategy towards climate change,<sup>158</sup> the Kunming-Montreal Global Biodiversity Framework explicitly emphasizes effective restoration to enhance biodiversity, ecological integrity and ecosystem functions and services.<sup>159</sup> Like the articles of the CBD, the framework does not specify particular types of measures, allowing parties flexibility to achieve these political targets through either passive or active restoration measures.

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<sup>148</sup> Jørgensen, *supra* note 54, at 2980.

<sup>149</sup> *Ibid.*

<sup>150</sup> *Ibid.*, 2981.

<sup>151</sup> CBD, Decision XI/16, Ecosystem restoration (5 December 2012).

<sup>152</sup> Jørgensen, *supra* note 54, at 2979.

<sup>153</sup> An Cliquet, et al., *Upscaling ecological restoration: toward a new legal principle and protocol on ecological restoration in international law*, 30 RESTORATION ECOLOGY (2022), 2.

<sup>154</sup> CBD, Global Biodiversity Outlook 5 (18 August 2020), 100.

<sup>155</sup> CBD, Kunming-Montreal Global Biodiversity Framework (19 December 2022).

<sup>156</sup> CBD, Decision X/2: The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (29 October 2010), target 15.

<sup>157</sup> CBD, Kunming-Montreal Global Biodiversity Framework (19 December 2022), target 2.

<sup>158</sup> CBD, Decision X/2: The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (29 October 2010), target 15.

<sup>159</sup> CBD, Kunming-Montreal Global Biodiversity Framework (19 December 2022), target 2.

Thirdly, complementing its policy initiatives devoid of specific passive or active restoration measures, the CBD has issued guidance documents pertinent to passive restoration efforts. One such document is the "Ecologically or Biologically Significant Sea Areas" guide, which explicitly directs international efforts towards the establishment and effective management of MPAs in Areas Beyond National Jurisdiction. This guidance facilitates ecosystem conservation and restoration measures, particularly in marine environments by designating and protecting of ecologically or biologically significant areas.<sup>160</sup> This guide qualifies as promoting measures falling within passive restoration, as protected areas are designated to reduce or eliminate the threats present in the area.

In conclusion, the CBD acknowledges the imperative of ecological restoration by embedding legal obligations within its treaty and underscoring the required percentages of ecological restoration in its agendas to align with CBD's aims. Additionally, the CBD develops guidelines for establishing marine protected areas, constituting passive restoration. Consequently, the CBD emerges as a pivotal instrument in advocating for the recognition of ecological restoration as indispensable for ecosystem and biodiversity well-being. Moreover, as asserted in section 2.4, the CBD does not directly bind RFMOs but it influences them through the obligations of their member states. RFMOs are composed of member states that are parties to the CBD, and these member states are obligated to implement the provisions of the CBD,<sup>161</sup> which includes principles related to the conservation and sustainable use of marine biodiversity. Given that RFMOs' operational practices have to be agreed upon via consensus,<sup>162</sup> and considering that member states participating in RFMOs are expected to align their actions with their treaty obligations,<sup>163</sup> RFMOs are indirectly influenced through the obligations placed on their member states, despite not being directly bound by the CBD.

#### 2.4.2. Convention on the Conservation of Migratory Species of Wild Animals (CMS)

Similar influences on RFMOs through their member states can be concluded regarding the Bonn Convention, formally known as the Convention on the Conservation of Migratory Species of Wild Animals. The latter holds significance not only for protecting marine species but also

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<sup>160</sup> Michael Bowman, et al., RESEARCH HANDBOOK ON BIODIVERSITY AND LAW (Edward Elgar Publishing Limited. 2016), 160.

<sup>161</sup> United Nations, VCLT *supra* note 114, at Arts. 11-17 jo. Art. 26.

<sup>162</sup> Ted McDorman, *Implementing Existing Tools: Turning Words Into Actions – Decision-Making Processes of Regional Fisheries Management Organisations (RFMOs)*, 20 THE INTERNATIONAL JOURNAL OF MARINE AND COASTAL LAW (2005), 248.

<sup>163</sup> United Nations, VCLT *supra* note 114, at Arts. 11-17 jo. Art. 26.

for purporting ecological restoration initiatives.<sup>164</sup> While its focus extends beyond marine life, it encompasses various migratory species, including marine biodiversity listed in Appendices I and II. These Appendices are subject to amendment by a two-thirds majority<sup>165</sup> and, thereby, can change along with the evolution of scientific knowledge. Article III(4)(a) of the Convention encourages range states of migratory species listed in Appendix I (species endangered by extinction)<sup>166</sup> to conserve and, where feasible and appropriate, restore critical habitats to prevent their extinction while prohibiting their exploitation or as mentioned in the Convention their “taking”.<sup>167</sup> This provision extends to fisheries, requiring the protection of cetaceans, seabirds, specific seals, and fish listed in Appendix I from being taken. It extends to fishing activities, including by-catching, and requires the conservation and restoration of their habitats.<sup>168</sup> Additionally, Appendix II species (species in unfavourable conditions)<sup>169</sup> are safeguarded under Article IV(3) through regional agreements concluded by the parties.

Article V of the Bonn Convention provides guidelines for restoring Appendix II species to a favourable conservation status within regional agreements<sup>170</sup> while stressing habitat conservation and restoration.<sup>171</sup> These agreements, conducted for numerous marine migratory species found in Appendix II, which is more expansive than Appendix I and lists numerous marine species such as several cetaceans, dolphins, seals and a type of fish, serve as practical examples of the Convention’s effectiveness. An instance of such agreement is the Memorandum of Understanding between all countries of the African Atlantic coast concerning sea turtle conservation cooperation, which aims to protect the habitats and the direct catch of sea turtles through, among other things, the regulation of fishing nets.<sup>172</sup>

As observed, the Convention explicitly addresses restoration, particularly within the context of regional agreements arising from Article IV (3), which have broad applicability.<sup>173</sup> Restoration obligations concerning crucial habitats of listed species may constitute active restoration, surpassing mere threat reduction. Although marine protected areas, a type of area-

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<sup>164</sup> Cliquet, *supra* note 102, at 394.

<sup>165</sup> United Nations, CMS, *supra* note 31, at Art. XI(4).

<sup>166</sup> Further defined in *ibid*, Art. I.1(e).

<sup>167</sup> United Nations, CMS, *supra* note 31, at Art. I.1(i).

<sup>168</sup> Gregory Rose, *Marine Biodiversity Protection through Fisheries Management*, 8 REVIEW OF EUROPEAN, COMPARATIVE & INTERNATIONAL ENVIRONMENTAL LAW (1999), 287.

<sup>169</sup> Defined in United Nations, CMS, *supra* note 31, at Art. IV.

<sup>170</sup> *Ibid*, Art. V(1).

<sup>171</sup> *Ibid*, Art. V(5)(e).

<sup>172</sup> Convention on the Conservation of Migratory Species, Memorandum of Understanding concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa (1 July 1999).

<sup>173</sup> Bastmeijer, *supra* note 9, at 393.

based management tool, could contribute to habitat restoration, as highlighted by Matz,<sup>174</sup> they are not explicitly mentioned in the Convention, leaving implementation methods to the parties' discretion. In addition to this discretion, the Convention's restoration obligations are tempered by conditions such as "where feasible and appropriate"<sup>175</sup> and "where required and feasible"<sup>176</sup>, limiting their scope. These conditions allow states to act by their capacity, introducing a subjective element to the restoration obligations. This has drawn criticism from scholars who argue that the Convention lacks concrete obligations to states.<sup>177</sup>

Furthermore, the absence of a compliance scheme poses challenges.<sup>178</sup> The lack of a compliance mechanism results in a lack of reviews and data regarding the consequences of implementing the Convention. Moreover, while Article V(4)(d) suggests a monitoring and reporting scheme as an element of the agreement for Appendix II species, its implementation is subject to the discretion of the parties,<sup>179</sup> potentially affecting the effectiveness of restoration efforts.

Ultimately, the effectiveness of restoration efforts under the Bonn Convention, often criticized for its perceived weaknesses in safeguarding endangered species, relies heavily on their appropriateness and feasibility, granting considerable flexibility to Member States.<sup>180</sup> Additionally, the lack of review on the implementation of the Bonn Convention inhibits a possible conclusion on the latter's efficiency regarding habitat restoration of listed species.

### 2.4.3. United Nations Convention on the Law of the Sea (UNCLOS)

The United Nations Convention on the Law of the Sea, a comprehensive framework governing the utilization of resources and the protection and preservation of the marine environment,<sup>181</sup> play a significant role in indirectly influencing RFMOs. While UNCLOS, similar to the CBD and CMS, does not directly bind RFMOs, these organizations are indirectly influenced by the obligations placed on their member states through their commitment to UNCLOS. This nuanced relationship between UNCLOS and RFMOs is a key aspect to consider in the context

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<sup>174</sup> Nele Matz-Lück, *Chaos or coherence? - Implementing and enforcing the conservation of migratory species by different legal instruments*, 65 ZEITSCHRIFT FÜR AUSLÄNDISCHES ÖFFENTLICHES RECHT UND VÖLKERRECHT (2005), 202.

<sup>175</sup> United Nations, CMS, *supra* note 31, at Art. III(4)(a).

<sup>176</sup> *Ibid.*, Art. V(5)(e).

<sup>177</sup> Matz-Lück, *supra* note 174.

<sup>178</sup> Rose, *supra* note 168, at 288.

<sup>179</sup> United Nations, CMS, *supra* note 31, at Art. V(4)(d).

<sup>180</sup> Bastmeijer, *supra* note 9, at 411.

<sup>181</sup> Cindy Dover, et al., *Ecological restoration in the deep sea: Desiderata*, 44 MARINE POLICY (2014), 99.

of marine resource management and ecological restoration, providing a comprehensive understanding of the legal landscape.

Through its delineation and regulation of maritime zones, UNCLOS allocates jurisdiction and sovereignty to states based on the distance of the area from the coastline.<sup>182</sup> This division, while it may lead to a fragmentation of the protection of the marine environment with different actors,<sup>183</sup> is not a hindrance to ecological restoration. While not explicitly incorporated into UNCLOS, the ecosystem approach can be analyzed as supporting this approach.<sup>184</sup> Examples of such support include the consideration of the interrelation between relevant species in the Exclusive Economic Zones (EEZs) (Article 61(4)) and the high seas (Article 119(1)(b)), as well as the protection of fragile ecosystems (Article 194(5)). These aspects are linked to the relevant provisions pertaining to ecological restoration, which are assessed hereunder, demonstrating the effectiveness of UNCLOS in addressing fragmentation challenges and supporting ecological restoration efforts, providing reassurance about the robustness of the legal framework.

Whereas the division entails a fragmentation of the duties regarding specific zones, UNCLOS offers avenues for cooperation to address these challenges, particularly in EEZs (Article 57) and the high seas (Article 86). Articles 63(2), 64 and 118 advance cooperation obligations within EEZ and beyond, potentially mitigating fragmentation issues. Moreover, despite not explicitly mentioning ecological restoration, UNCLOS contains provisions relevant to restoration efforts. Article 61(3) addresses restoration obligations regarding harvestable stocks, while Part XII focuses on protecting the marine environment, which could encompass restoration. This subsection begins by highlighting the explicit mention of restoration in UNCLOS. Following this, it delves into an analysis of Part XII obligations and presents a dichotomy regarding the advancement of ecological restoration within UNCLOS. While some legal scholars argue for establishing ecological restoration through the rule of reference in UNCLOS, others recognize the implicit incorporation of a duty to restore within the broader duty to protect and preserve the marine environment. Before diving into the possible evolving legal landscape of UNCLOS surrounding ecological restoration, the explicit mention of restoration within UNCLOS must be established.

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<sup>182</sup> UNCLOS, *supra* note 32, at introductory articles pertaining to maritime zones within the treaty.

<sup>183</sup> Lan Ngoc Nguyen, *Expanding the Environmental Regulatory Scope of UNCLOS Through the Rule of Reference: Potentials and Limits*, 52 OCEAN DEVELOPMENT & INTERNATIONAL LAW (2022), 441.

<sup>184</sup> Dmitry Gonchar, *The implementation of an ecosystem approach to fisheries management in UNCLOS and UNFSA*, available at

[https://www.un.org/depts/los/convention\\_agreements/ICSP15/22/presen/DOALOS%20presentation\\_ecosystem%20approach\\_fisheries.pdf](https://www.un.org/depts/los/convention_agreements/ICSP15/22/presen/DOALOS%20presentation_ecosystem%20approach_fisheries.pdf). (last accessed 30<sup>th</sup> May 2024).

UNCLOS explicitly mentions restoring harvested species populations within the context of ensuring maximum sustainable yield, primarily driven by anthropocentric objectives.<sup>185</sup> This focus on human needs rather than a direct emphasis on restoring marine ecosystems per se is a key aspect to understand. Articles 61(3)-(4) and 119(1) provide detailed criteria for determining allowable catch in fisheries and establishing conservation measures for living resources in EEZs (spanning 200 nautical miles from the baseline (Article 57)) and high seas (lying beyond the EEZ (Article 86)). These measures emphasize the interdependence of stocks and the effects on dependent and associated species, aiming to maintain or restore populations above levels where reproduction may become seriously threatened.<sup>186</sup> Whereas these provisions hint at a consideration of the ecosystem approach beneficial to restoration efforts,<sup>187</sup> it is arguable whether such restoration aligns with the broader concept of ecological restoration, which encompasses the recovery of entire ecosystems. It raises questions about whether the restoration obligation primarily entails the recovery of specific species vital in the trophic chain of harvestable species or the species themselves or if it involves broader ecosystem-level restoration efforts. Consequently, associating this restoration obligation with active or passive restoration proves challenging. Regardless, it is evident that the reference to restoration in these articles primarily serves production purposes, emphasizing the sustainable utilization of marine resources rather than the holistic restoration of marine ecosystems.

Moreover, UNCLOS contains several noteworthy provisions in Part XII that address the protection and preservation of the marine environment. Part XII has been affirmed to be closely linked to the conservation of living resources, and thereby fisheries, in legal cases such as the Southern Bluefin Tuna provisional measures case<sup>188</sup> and has been reaffirmed in the SRFC Advisory Opinion.<sup>189</sup> Therefore, the jurisprudence underscores that the preservation of marine living resources, under the jurisdiction of the fisheries sector, constitutes an “element in the protection and preservation of the marine environment”.<sup>190</sup> Within Part XII, Article 192 outlines a general obligation for states to protect and preserve the marine environment. Additionally, Article 194(5) imposes a duty to safeguard rare or fragile ecosystems and the habitats of

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<sup>185</sup> Richardson, *supra* note 103, at 279.

<sup>186</sup> Wang, *supra* note 136, at 48.

<sup>187</sup> Tein McDonald, et al., *INTERNATIONAL STANDARDS FOR THE PRACTICE OF ECOLOGICAL RESTORATION—INCLUDING PRINCIPLES AND KEY CONCEPTS* (Society for Ecological Restoration International. 2016).

<sup>188</sup> *Southern Bluefin Tuna, New Zealand v Japan, Provisional Measures*, (ITLOS, 1999), para. 70.

<sup>189</sup> *Ibid*; *Request for an Advisory Opinion submitted by the Sub-Regional Fisheries Commission (SRFC)*, Advisory Opinion, (ITLOS, 2015), para. 120.

<sup>190</sup> *Ibid*.



depleted, threatened, or endangered species, along with other forms of marine life. Furthermore, Article 197 mandates cooperation among states to develop international rules, standards, and recommended practices and procedures (GAIRS), aimed at the protection and preservation of the marine environment.<sup>191</sup> These provisions offer significant potential for legal developments to enhance restoration efforts, providing a hopeful outlook for the future of restoration initiatives within the context of UNCLOS, instilling optimism in the audience about the potential for positive change.

#### 2.4.3.1. *Potential legal development of ecological restoration within UNCLOS*

Scholars argue that there are two different legal developments to enhance ecological restoration within UNCLOS. Firstly, Cliquet et al. claim that the restoration obligation within UNCLOS could be strengthened through the rule of reference.<sup>192</sup> This rule is found, *inter alia*, in Article 197 UNCLOS on the cooperation obligation for states in developing GAIRS to protect and preserve the marine environment.<sup>193</sup> The rule of reference recognizes generally accepted rules in external instruments and incorporates them within UNCLOS, rendering these obligations binding on state parties to the Convention.<sup>194</sup> This concept has ensured that UNCLOS remains adaptable to evolving dynamics,<sup>195</sup> instilling confidence in the potential success of the proposed legal developments. GAIRS, a sub-set of the rule of reference, have typically been established through recommendations by International Maritime Organization (IMO) committees to regulate ship pollution.<sup>196</sup> Cliquet et al. suggest that GAIRS could be adopted by the COP CBD through a new protocol, delineating existing CBD obligations from a restoration perspective and establishing a schedule for achievement.<sup>197</sup> They argue for incorporating ecological restoration principles<sup>198</sup> and standards<sup>199</sup> into such a protocol, facilitating the integration of restoration into the ocean governance framework through the rule of reference.

The lack of legal literature regarding Article 197 UNCLOS and its implications leaves discretion to legal scholars to interpret evolving developments. However, Cliquet et al.'s

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<sup>191</sup> UNCLOS, *supra* note 32, at Art. 197; Anastasia Telesetsky, *Active Marine Restoration and Law*, in *TRANSFORMING THE OCEAN LAW BY REQUIREMENT OF THE MARINE ENVIRONMENT CONSERVATION* (Chaumette Patrick ed. 2019), 226.

<sup>192</sup> Cliquet et al., *supra* note 153, at 4.

<sup>193</sup> UNCLOS, *supra* note 32, at Art. 197; Telesetsky, *supra* note 191.

<sup>194</sup> Nguyen, *supra* note 183, at 420.

<sup>195</sup> *Ibid.*

<sup>196</sup> Cliquet, *supra* note 153, at 3.

<sup>197</sup> *Ibid.*, 4.

<sup>198</sup> e.g. Peter Valentine, *ECOLOGICAL RESTORATION FOR PROTECTED AREAS: PRINCIPLES, GUIDELINES AND BEST PRACTICES* (IUCN 2012).

<sup>199</sup> e.g. McDonald et al., *supra* note 187.

viewpoint is subject to debate for several reasons. Primarily, the CBD lacks a mechanism to create GAIRS,<sup>200</sup> and the IMO is the main body recognized for such purpose, as underlined by Argüello.<sup>201</sup> Moreover, even if the CBD were to establish such a mechanism, creating a protocol would require significant political will, potentially presenting a hurdle despite the UN Decade on Ecosystem Restoration. A protocol is a supplementary agreement that the entirety of the COP must adopt.<sup>202</sup> Therefore, CBD's parties must agree on the proposal and enactment of such a protocol, which seems like an enormous step for ecological restoration as it currently stands.

Additionally, ecological restoration varies depending on local ecosystem conditions and scientific knowledge. These variables pose challenges – albeit not insurmountable – to define as a clear GAIRS concept binding on UNCLOS state parties. Furthermore, the rule of reference is absent in provisions relating to the conservation of living resources, indicating its limitation to shipping and pollution matters. As emphasized by Barnes, while the rule of reference allows for adaptation, it is confined to specific areas, suggesting that advancing ecological restoration through GAIRS may not be the optimal solution.<sup>203</sup> Alternative techniques, such as treaty interpretation rules, could incorporate ecological restoration within UNCLOS, representing another avenue for adaptation.

Secondly, as Harrison argues, ecological restoration obligations could be inferred from existing provisions within UNCLOS.<sup>204</sup> UNCLOS exhibits remarkable adaptability, evident in its provisions where implicit obligations lie, some advocated by scholars and others acknowledged by tribunals and informed by the broader *corpus* of international environmental law. Harrison contends that these forms of adaptability lead to an implicit duty to restore within Article 192, a potential strong argument for the proposed legal developments. He draws on the *South China Sea* case, where the Tribunal affirmed that Article 192 entails a negative and positive obligation to 'maintain and improve' the marine environment.<sup>205</sup> As highlighted by the Tribunal, the negative aspect demands abstention from activities that could degrade the marine environment, while the positive component necessitates proactive measures protecting and

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<sup>200</sup> Cliquet, *supra* note 153, at 4.

<sup>201</sup> Gabriela Argüello, *Regime Interaction and GAIRS*, in *MARITIME LAW IN MOTION* (Proshanto K. Mukherjee, et al. eds., 2020), 18.

<sup>202</sup> United Nations, Convention on biological diversity (June 1992), Art. 28.

<sup>203</sup> Richard Barnes, *The Continuing Vitality of LOSC*, in *LAW OF THE SEA. UNCLOS AS A LIVING TREATY* (Jill Barrett & Richard Barnes eds., 2016), 479.

<sup>204</sup> James Harrison, *The Protection of Species, Ecosystems and Biodiversity Under UNCLOS in Light of the South China Sea Arbitration: An Emergent Duty of Marine Ecosystem Restoration?*, EDINBURGH SCHOOL OF LAW RESEARCH PAPER (2019).

<sup>205</sup> *The South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China)*, (Permanent Court of Arbitration (PCA), 2016), [Hereinafter, *The South China Sea Arbitration*], para. 941.

enhancing it, including the obligation to 'maintain and improve' its present state.<sup>206</sup> Although the Tribunal refrained from extensively exploring the latter aspect, Harrison argues that it paves the way for interpreting UNCLOS to include a “duty to rehabilitate or restore degraded marine ecosystems”.<sup>207</sup> This extension of the duty to protect and preserve aligns with the evolving principle of due diligence,<sup>208</sup> requiring proactive measures and vigilance in enforcement.<sup>209</sup> However, whereas the principle of due diligence does not identify the appropriate measures to be adopted, the Tribunal may interpret implicit duties out of existing UNCLOS obligations, as done in the *South China Sea* case.<sup>210</sup> Therefore, in light of the evolving principle of due diligence and the unfolding interpretation of the Tribunal, it would not be surprising if the restoration obligations were interpreted as part of Article 192. Moreover, it is not contrary to other provisions of UNCLOS to interpret such duty from Article 192. As Harrison argues, Article 61 UNCLOS, mandating measures to maintain or restore populations of harvested species,<sup>211</sup> and Article 194(5) UNCLOS, implying restoration obligations by requiring measures to protect habitats of depleted species, are in line with restoration objectives.<sup>212</sup>

To complement this strong argument, Harrison points to the broader corpus of international environmental law, which informs the content of Article 192. The Tribunal established in the *South China Sea* case that the dynamic treaty interpretation of UNCLOS integrates principles from the broader corpus of international environmental law, shaping the content of Article 192.<sup>213</sup> This allows for the interpretation and application of UNCLOS with principles and obligations from other international agreements, such as the CBD,<sup>214</sup> as supported by Article 237 of UNCLOS<sup>215</sup> and the systematic integration of treaties in Article 31(3)(c) of the Vienna Convention on the Law of Treaties.<sup>216</sup> According to Harrison, Article 8(f) of the CBD, addressing the rehabilitation and restoration of degraded ecosystems, supports the Tribunal's interpretation of a restoration obligation under UNCLOS.<sup>217</sup>

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<sup>206</sup> *ibid.*

<sup>207</sup> Harrison, *supra* note 204, at 4 and 10.

<sup>208</sup> ILA Study Group on Due Diligence in International Law, Second Report. (July 2016), 3 and 47.

<sup>209</sup> *The South China Sea Arbitration*, *supra* note 205, at para. 944 referring to *Request for an Advisory Opinion submitted by the Sub-Regional Fisheries Commission (SRFC)*, Advisory Opinion, (ITLOS, 2015), para. 131.

<sup>210</sup> *Ibid.*, para. 941.

<sup>211</sup> UNCLOS, *supra* note 32, at Art. 61(4).

<sup>212</sup> Harrison, *supra* note 204, at 11.

<sup>213</sup> *The South China Sea Arbitration*, *supra* note 205, at para. 941.

<sup>214</sup> See the *ITLOS Advisory Opinion on the Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law* (Request for Advisory Opinion submitted to the Tribunal), (ITLOS).

<sup>215</sup> *The South China Sea Arbitration*, *supra* note 205, at para. 942.

<sup>216</sup> United Nations, VCLT *supra* note 114.

<sup>217</sup> Harrison, *supra* note 204, at 11.

Thus, Article 192 entails a general obligation of due diligence, mandating states to exert "all reasonable efforts" to restore and rehabilitate degraded ecosystems.<sup>218</sup> These arguments hold firm ground in the challenges experienced in the current environment. However, as suggested by Harrison, states are not bound by a duty of specific outcomes.<sup>219</sup> Harrison claims that objective standards, including state practice and decisions of relevant bodies such as the Conference of the Parties to the CBD, could restrict the state's discretion in implementing measures.<sup>220</sup> An example proposed by Harrison would be to impose on states a duty to conduct an "ecosystem restoration assessment"<sup>221</sup> to identify suitable areas and measures for ecosystem restoration. This interpretation holds significance in addressing contemporary environmental challenges, although it does not entail specific actions or measurable outcomes. Therefore, whereas this duty to restore within Article 192 is a feasible and appropriate legal development, it remains to be seen whether state measures and successful outcomes would follow it.

In conclusion, the two legal developments advocating for designating ecological restoration within UNCLOS through GAIRS<sup>222</sup> and contending that an implicit obligation to restore already exists within existing provisions of UNCLOS<sup>223</sup> offer an interesting basis for legal development towards ecological restoration. These proposals, if implemented, could have a significant impact on the marine ecosystems, underscoring their importance. While the former proposal may appear ambitious, the latter ensures coherence with UNCLOS's existing legal structure and norms. Indeed, the latter perspective emphasizes clarity regarding states' obligations to protect and preserve the marine environment, leveraging the global applicability of UNCLOS as the primary legal framework governing ocean affairs.

#### 2.4.4. Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ Agreement)

Another technique for incorporating new developments into UNCLOS, which has yet to be discussed, is through implementing agreements.<sup>224</sup> These are international legally binding

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<sup>218</sup> *Ibid.*, 12.

<sup>219</sup> *Ibid.*

<sup>220</sup> *Ibid.*

<sup>221</sup> *Ibid.*, 19.

<sup>222</sup> e.g. Cliquet, *supra* note 153; Anastasia Telesetsky, *Ecscapes: The Future of Place-Based Ecological Restoration Laws*, 14 VERMONT JOURNAL OF ENVIRONMENTAL LAW (2013).

<sup>223</sup> Harrison, *supra* note 204.

<sup>224</sup> Nguyen, *supra* note 183, at 442.

instruments adopted under UNCLOS to regulate matters not foreseen in the Convention but gaining international relevance, such as the new BBNJ Agreement.<sup>225</sup> This Agreement, adopted in June 2023, focuses on the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction (Article 3 BBNJ Agreement), encompassing the seabed (Part XI jo. Article 1(1)(1) UNCLOS) and the high seas (Article 86 UNCLOS) governed by the principle of the freedom of the high seas (Articles 87 and 116 UNCLOS). In areas beyond national jurisdiction, no state may establish sovereignty (Article 89 UNCLOS), and all states have a duty to cooperate regarding the conservation of living resources (Article 118 UNCLOS). This cooperation can be achieved via RFMOs, as further assessed in section 3.1.1. Although RFMOs, as international organizations, are not formally part of the BBNJ Agreement, they are influenced by it due to their member states' commitment to the Agreement. The BBNJ Agreement expressly recognizes that parties have an obligation to promote its objectives, which include the conservation and sustainable use of marine biological diversity (Article 2), when “participating in decision-making under other relevant legal instruments, frameworks, or global, regional, subregional, or sectoral bodies” (Article 8(2)). Furthermore, RFMOs are often directly involved through references in several articles relating to cooperation with “relevant legal instruments and frameworks and relevant global, regional, subregional, and sectoral bodies” within the BBNJ Agreement.<sup>226</sup> Given the relevance of the BBNJ Agreement to RFMOs, this section analyzes the significance of the Agreement for ecological restoration and fisheries.

The BBNJ Agreement recognizes the need for a “comprehensive legal regime”<sup>227</sup> to regulate the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction. The general principles and approaches guiding the state parties to the Agreement include the concepts of “ecosystem resilience” and “ecosystem integrity”, both of which are crucial for ecological restoration.<sup>228</sup> The Agreement explicitly aims to restore ecosystems to enhance the carbon sequestration services provided by the ocean.<sup>229</sup> This restoration objective is accompanied by the possibility for the CoP to establish a fund to finance ecological restoration (Article 52(5)). This funding opportunity is an essential development to restoration efforts as one of the main barriers to ecological restoration in deep sea areas is the

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<sup>225</sup> United Nations, BBNJ Agreement, *supra* note 33. Articles are analyzed as they currently stand as of April 30<sup>th</sup> 2024.

<sup>226</sup> e.g. *Ibid.*, Art. 8(1), Art. 25(3), Art. 29(1).

<sup>227</sup> *Ibid.*, preamble para 4.

<sup>228</sup> *Ibid.*, Art. 7(h).

<sup>229</sup> *Ibid.*

cost.<sup>230</sup> Additionally, by establishing a framework for ABMTs (Part III), including Marine Protected Areas (MPAs), the BBNJ plays a crucial role in the passive restoration approach.<sup>231</sup> ABMTs aim to restore biodiversity and ecosystems, enhance productivity and health, increase resilience to stressors, and establish a network of MPAs (Article 17(c)). The objective of restoration is therefore made explicit. Parties can propose ABMTs to the COP, which considers advice from the Scientific and Technical Body and consults relevant stakeholders before deciding whether to establish the ABMTs (Articles 19 and 21). Parties unwilling to adhere to the ABMTs can opt-out if they provide justified reasons and propose alternative measures (Article 23(4)).<sup>232</sup> However, even parties that opt-out and non-parties to the BBNJ are still obligated under Article 118 UNCLOS to cooperate in areas beyond national jurisdiction.<sup>233</sup> This provision helps to reduce the opportunities for free-ridership and ensures a more inclusive approach to international cooperation in these areas.

While the BBNJ Agreement strongly mandates passive restoration measures through advancing MPAs, a *caveat* arises concerning fisheries. To avoid undermining existing frameworks and bodies (Article 5(2)), the Agreement exempts fisheries, as well as fish and any living marine resources taken in fishing-related activities, from the marine genetic resources (MGRs) provisions (Part II, Article 10(2)). This exception leaves MGRs relating to fisheries management under UNCLOS and other relevant instruments, which conflicts with the ecosystem approach and leaves many species unprotected and unregulated.<sup>234</sup> Despite negotiations, the "not-undermining" rule (Article 5(2)) prevailed, leading to a gap in protection for species related to fisheries activities.

However, MGR is the only area from which fisheries are excluded. In other components of the BBNJ Agreement, fisheries are implicitly included through numerous references to international cooperation with "relevant legal instruments and framework and relevant global, regional, subregional and sectoral bodies".<sup>235</sup> Part III explicitly addresses this cooperation, where ABMTs are discussed. Here, the objective of coordinating with such regional and

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<sup>230</sup> Schwarte, *supra* note 4, at 1 and 6.

<sup>231</sup> Stephen Minas, *The Ocean-Climate Nexus in the Unfolding Anthropocene: Addressing Environmental Challenges Through International Law and Cooperation*, in CHARTING ENVIRONMENTAL LAW FUTURES IN THE ANTHROPOCENE (Michelle Lim ed. 2019), 92; Daniel Kachelriess, *The High Seas Biodiversity Treaty: An Introduction to the Agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*, (IUCN 2023), 15.

<sup>232</sup> *Ibid.*, 18.

<sup>233</sup> *Ibid.*

<sup>234</sup> Arne Langlet & Alice B. M. Vadrot, *Not 'undermining' who? Unpacking the emerging BBNJ regime complex*, 147 MARINE POLICY (2023), 8.

<sup>235</sup> United Nations, BBNJ Agreement, *supra* note 33, at e.g. Arts. 8(1), 17(b),

sectoral bodies is made clear (Article 17(b)). Additionally, these bodies play a role in providing data regarding proposals to establish areas (Article 19(2) jo. Article 19(4)(i)), must be consulted and invited to submit their views on proposals (Article 21(2)(b)), and the measures adopted must be compatible with their own (Article 22(1)(b)). Moreover, concerning environmental impact assessments, the BBNJ Agreement mandates collaboration with relevant bodies regulating activities or protecting the marine environment in Areas Beyond National Jurisdiction (Article 29(2)-(4)), including fisheries.<sup>236</sup>

Thus, the BBNJ Agreement does not provide protection to fisheries within MGRs, a factor that poses significant challenges to the ecosystem approach. However, the Agreement's inclusion of RFMOs in potential measures for cooperation in areas such as ABMTs and environmental impact assessments is a notable aspect, highlighting its relevance within the ocean governance framework and its potential impact on the restoration of marine biodiversity and fisheries management.

#### 2.4.5. The EU: Nature Restoration Law

In addition to the global perspective, it's interesting to delve into the European context concerning marine ecosystem restoration and its intricate ties to the fisheries sector. This subsection uncovers key initiatives such as the EU Biodiversity Strategy for 2030, the proposed EU Nature Restoration Law, and the regulation within the Common Fisheries Policy, underlining the acknowledged interplay between marine ecosystem restoration and fisheries management in the EU. Subsequently, the existing legal framework governing marine restoration in the EU is delineated, encompassing the Birds Directive,<sup>237</sup> Habitats Directive,<sup>238</sup> Water Framework Directive<sup>239</sup> and Marine Strategy Framework Directive.<sup>240</sup> This sets the stage for examining the proposed EU Nature Restoration Law, which is currently blocked in the legislative process in the Council,<sup>241</sup> identifying its potential implications regarding marine restoration efforts.

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<sup>236</sup> Ecologic Institute, *Marine and coastal ecosystem restoration*. (August 2023), 20.

<sup>237</sup> EU, Birds Directive, *supra* note 110.

<sup>238</sup> EU, Habitats Directive, *supra* note 51.

<sup>239</sup> EU, Water Strategy Framework Directive, *supra* note 112.

<sup>240</sup> EU, Marine Strategy Framework Directive, *supra* note 113.

<sup>241</sup> International Fund for Animal Welfare, *The EU Nature Restoration Law: a closer look at the compromises and challenges* (17 April 2024), available at <https://www.ifaw.org/international/journal/eu-nature-restoration-law-compromises-and-challenges> (last accessed 30<sup>th</sup> May 2024).

#### 2.4.5.1. Fisheries-marine restoration nexus at the EU level

The European Union, renowned for its leadership in environmental protection legislation,<sup>242</sup> has emerged as a pioneer by introducing the first-ever Nature Restoration Law.<sup>243</sup> This legislative instrument finds its roots in the EU Biodiversity Strategy for 2030, which advocates for recovering Europe's biodiversity.<sup>244</sup> Within the Strategy and the proposed Nature Restoration Law, a connection between ecosystem restoration and fisheries management is underscored through the governing regulation relating to the fisheries sector: the EU Common Fishery Policy (CFP). Albeit the latter does not explicitly cover ecosystem restoration, some aspects within the CFP can be interpreted to support such an objective. Hereunder, the relationship between restoration and fisheries in the EU within the EU Biodiversity Strategy for 2030, the proposed Nature Restoration Law and the CFP is laid down.

The EU Biodiversity Strategy for 2030 prioritizes the restoration of various ecosystems, with marine ecosystems taking centre stage due to their critical importance.<sup>245</sup> The Strategy unequivocally asserts the *nexus* between marine ecosystem restoration and fisheries, emphasizing the need to restore the "good environmental status" of marine ecosystems as outlined in the Marine Strategy Framework Directive.<sup>246</sup> Special attention is directed towards carbon-rich ecosystems and areas crucial for fish spawning and nursing, with the Strategy advocating for establishing strictly protected areas and implementing fisheries management measures within these zones.<sup>247</sup> Moreover, the Strategy highlights various fisheries practices requiring regulation, such as by-catch, fishing gears, and bottom-trawling, advocating for sustainable harvesting and elimination of illegal activities through the full enforcement of the CFP.<sup>248</sup> This reference to the CFP is also found in the Nature Restoration Law (NRL) proposal.

The proposal acknowledges the importance of the CFP<sup>249</sup> and incorporates concrete fisheries measures aimed at restoration (as detailed in Annex VII). These elements underscore the significance of the connection between restoration efforts and fisheries management, particularly when safeguarding marine habitats necessitates the regulation of fishing activities. The integration of the CFP is further highlighted in the guidelines provided for Member States in developing their national restoration plans. These plans must consider conservation measures

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<sup>242</sup> Zabey, *supra* note 41.

<sup>243</sup> European Commission, *supra* note 59.

<sup>244</sup> European Commission, EU biodiversity strategy for 2030 – Bringing nature back into our lives (2021).

<sup>245</sup> *Ibid.*, section 2.2.6

<sup>246</sup> *Ibid.*

<sup>247</sup> *Ibid.*

<sup>248</sup> *Ibid.*

<sup>249</sup> European Commission, Proposal for a Regulation of the European Parliament and of the council on nature restoration (22 June 2022), [Hereinafter, European Commission, Nature Restoration Law] preamble 38.



adopted under the CFP (Article 11(7)(g)), implying that measures implemented under the CFP contribute significantly towards achieving restoration targets.

The CFP focuses primarily on restoring fish stocks to achieve maximum sustainable yield, centralizing its efforts on fisheries management.<sup>250</sup> However, despite this primary focus, the CFP advocates for an ecosystem-based approach to mitigate the impact of fishing activities on marine ecosystems and prioritizes the prevention of environmental degradation.<sup>251</sup> Furthermore, the CFP integrates conservation measures mandated under directives such as the Marine Strategy Framework Directive, Birds Directive, and Habitats Directive within marine protected areas, underscoring their relevance in fisheries management (Article 11). This integration establishes a relationship between the ecological restoration of marine ecosystems and fisheries within the EU's legislative framework and policy objectives. As underlined by Barnes, this development is considered notable, particularly in light of the prevailing productivity overhaul when advancing conservation measures under Article 11 CFP.<sup>252</sup> However, this emphasis contrasts with the conservation aims within MPAs primarily emphasized through Article 11.<sup>253</sup> Despite this recognition, the practical implementation of the interaction between ecological restoration of marine ecosystems and fisheries management remains to be seen.

Including the CFP in both the Biodiversity Strategy and the proposed Nature Restoration Law, alongside its emphasis on an ecosystem-based approach, underscores the recognition granted to fisheries in achieving environmental protection objectives, including marine restoration. With this comprehensive evaluation of the fisheries-marine restoration *nexus* at the EU level, analyzing the existing legislation concerning marine restoration and the legal proposal for the Nature Restoration Law becomes imperative.

#### 2.4.5.2. *Current legal frameworks aimed at restoring habitats and species*

Prior to the implementation of the EU Nature Restoration Law,<sup>254</sup> the legal framework governing marine ecosystem restoration encompassed various instruments, including the Birds

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<sup>250</sup> EU, Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC (EU ed., 2013), Art. 2(2).

<sup>251</sup> *Ibid.*, Art. 2(3).

<sup>252</sup> Richard Barnes, Legal Study on the Relationship between Certain Aspects of the Common Fisheries Policy Basic Regulation and Key Provisions of the Nature Restoration Regulation: Including an Evaluation of Existing Options on Improving the Joint Recommendation Procedure and Proposal of Additional Options. An Opinion Prepared for ClientEarth. (4 May 2023), 9.

<sup>253</sup> *Ibid.*, 2.

<sup>254</sup> European Commission, Nature Restoration Law, *supra* note 249, at Art. 23.

and Habitats Directive, the Water Framework Directive, and the Marine Strategy Framework Directive. These directives are the cornerstone of the EU's conservation biodiversity policy, delineating the protection of species and habitats and designating areas for safeguarding within the Natura 2000 network.

While neither the Birds nor the Habitats Directive explicitly define restoration or elucidate principles pertinent to it, their objectives underline its significance in achieving favourable conservation status across species and habitats.<sup>255</sup> Both directives have jurisdiction over EU member states' maritime areas, including EEZs.<sup>256</sup> Nevertheless, while the Birds Directive covers all wild bird species (Art. 1), including marine species, as evidenced in its annexes, the Habitats Directive covers only some marine species and habitats listed in Annex IV. Thereby, the scope of the Habitats Directive has faced some criticism. For example, critics concerning its perceived narrowness regarding marine species, such as seals and invertebrates marine species within the Annexes, have been highlighted by Trouwborst et al.<sup>257</sup>

Despite these gaps, the aim to restore habitats and species to a favourable status is explicitly mentioned under the Habitats Directive (Articles 1(a) and 2(2)). The implementation of measures to maintain or restore the favourable conservation status of listed species and habitats is articulated through the creation of the Natura 2000 network (Articles 2(2) and 3(1)). The Directive includes criteria for the selection of a site as Natura 2000 (Annex III) and highlights restoration possibilities within these designated areas (Annex III.A(c) and B(b)).

Furthermore, as Schoukens argues, the Habitats Directive entails a non-regression clause, which could be a driver for restoration within Natura 2000 areas.<sup>258</sup> The latter claims that if steps to avoid deterioration have to be taken in accordance with Article 6, restoration has a solid ground to be conducted to abide by the obligation.<sup>259</sup>

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<sup>255</sup> EU, Habitats Directive, *supra* note 51, at Art. 2(2); EU, Birds Directive, *supra* note 110, at preamble 8 and Arts. 1-2, generally interpreted as implying such purposes e.g. see Arie Trouwborst & Harm M Dotinga, *Comparing European Instruments for Marine Nature Conservation: The OSPAR Convention, the Bern Convention, the Birds and Habitats Directives, and the Added Value of the Marine Strategy Framework Direct*, 20 EUROPEAN ENERGY AND ENVIRONMENTAL LAW REVIEW (2011), 136; Paulina Ramírez-Monsalve AAU, et al., *Marine Ecosystem Restoration in Changing European Seas MERCES - D6.3: Review on restoration, conservation and recovery of marine ecosystems in the four regional EU seas*, 210.

<sup>256</sup> *Case C-6/04 Commission v UK*, I-9017, (ECR, 2005), para. 117.

<sup>257</sup> Arie Trouwborst & Harm M Dotinga, *Comparing European Instruments for Marine Nature Conservation: The OSPAR Convention, the Bern Convention, the Birds and Habitats Directives, and the Added Value of the Marine Strategy Framework Direct*, 20 EUROPEAN ENERGY AND ENVIRONMENTAL LAW REVIEW (2011), 137.

<sup>258</sup> EU, Habitats Directive, *supra* note 51, at Art. 6(2); Hendrik Schoukens, *Ecological restoration as new environmental paradigm: a legal review of opportunities and challenges within the context of EU environmental law, with a particular focus on the EU Nature Directives* (2017), 127.

<sup>259</sup> *Ibid*, 127 and following pages.

In conjunction with these directives, the Water Framework Directive (WFD) imposes obligations on Member States to attain "good ecological status" for all water bodies (Article 4 and according to Annex V), extending to coastal waters<sup>260</sup> through management plans incorporating protection and restoration measures (Article 4(1)(a)(ii) and (b)(ii)). However, in the WFD, restoration is only mentioned in articles on management plan measures, and no definition or explanation of what it entails is found.

Next to this WFD, which covers primarily inland water, the Marine Strategy Framework Directive (MSFD) is an essential scheme for assessing marine ecosystem restoration. The MSFD aims to govern the state of marine ecosystems (Article 3(1) jo. Article 2) and assumes significance in assessing marine ecosystem restoration by aiming for the "good environmental status" of EU seas.<sup>261</sup> The ecosystem-based approach is applied to fulfil such an objective,<sup>262</sup> and the restoration of the marine ecosystem is used to "achieve or maintain good environmental status in the marine environment".<sup>263</sup> However, while restoration is mentioned as a means to achieve or maintain such status, its importance appears secondary to protection and prevention efforts. This is seen from the qualification accompanying restoration, such as "where practicable", "in areas where they have been adversely affected",<sup>264</sup> and "where appropriate"<sup>265</sup>. Nevertheless, the MSFD underscores the coherence between legislative fields, particularly regarding fisheries, and acknowledges the need for measures under the CFP to restore spawning, nursery, and feeding grounds.<sup>266</sup>

Despite the notable policy emphasis on ecological restoration, existing legal frameworks often regard restoration as a measure of last resort, only considered after protection and prevention measures have proven ineffective.<sup>267</sup> As underlined by the EU, restoration efforts are frequently perceived as limited in scale and implementation, with enforcement of legislation deemed insufficient.<sup>268</sup> Moreover, the current legal frameworks for restoring habitats and species need definitions<sup>269</sup> and historical benchmarks for ecological restoration, which are

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<sup>260</sup> EU, Water Strategy Framework Directive, *supra* note 112, at Art. 1.

<sup>261</sup> Defined in EU, Marine Strategy Framework Directive, *supra* note 113, at Art. 3(5).

<sup>262</sup> *Ibid.*, Art. 1(3).

<sup>263</sup> *Ibid.*, Art. 1(1).

<sup>264</sup> *Ibid.*, Art. 1(2)(a).

<sup>265</sup> *Ibid.*, Art. 13(5).

<sup>266</sup> *Ibid.*, preambles 9 and 39.

<sup>267</sup> Paulina Ramírez-Monsalve, et al., *Marine Ecosystem Restoration in Changing European Seas MERCES - D6.3: Review on restoration, conservation and recovery of marine ecosystems in the four regional EU seas*, 94.

<sup>268</sup> European Commission, EU biodiversity strategy for 2030 – Bringing nature back into our lives (2021), section 2.

<sup>269</sup> *Ibid.*

currently lacking.<sup>270</sup> The Institute for European Environmental Policy (IEEP) highlights the scarcity of marine ecosystem restoration initiatives, exemplified by the limited designation of MPAs within the EU regarding number, scale, and ecological representation.<sup>271</sup> Additionally, Schoukens critiques the ambiguity surrounding current legal instruments on restoration, noting their inconsistent application across different habitats and purposes,<sup>272</sup> as well as the lack of clarity regarding the supported forms of restoration (active or passive) and methodologies for implementation.<sup>273</sup> Schoukens proposes enacting an EU Restoration Law to address these challenges and inconsistencies.<sup>274</sup> Such legislation, aiming at harmonizing and clarifying restoration practices across various legislative acts,<sup>275</sup> aligns with the objectives outlined in the EU Biodiversity Strategy for 2030 and the European Commission's proposal for the EU Restoration Law adopted on June 22nd, 2022. This legislative initiative seeks to provide a comprehensive and coherent framework for ecological restoration within the EU, bridging existing gaps and advancing biodiversity conservation efforts.

#### *2.4.5.3. Comprehensive and coherent framework for ecological restoration within the EU: The proposed EU Nature Restoration Law*

Seen as a stepping stone in the restoration of Europe's biodiversity, the EU Nature Restoration Law (NRL) proposal aims to contribute to the recovery of biodiversity by restoring different ecosystems (Article 1(2)). Nevertheless, the law's adoption faced a setback despite the agreement on the NRL by the European Parliament, Commission and Council on the 9<sup>th</sup> of November 2023.<sup>276</sup> The Council failed to garner the necessary qualified majority for its enactment.<sup>277</sup> Thus, the future of the NRL is still being determined. However, since the NRL is attractive regarding ecological restoration, specifically addresses marine areas, and sets ambitious restoration targets for the latter, the proposal is assessed in this section.

The NRL consists of a set of restoration targets and obligations along with obligatory national restoration plans. Jurisdictionally speaking, the NRL applies to all waters where Member States exercise sovereign rights (Article 2), establishing a comprehensive framework for restoration measures. It, therefore, applies to the territorial waters of the Member States.

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<sup>270</sup> Jørgensen, *supra* note 54, at 2981; Richardson, *supra* note 103.

<sup>271</sup> Ecologic Institute, *supra* note 6, at 2.

<sup>272</sup> European Commission, Nature Restoration Law, *supra* note 249, at preamble 37.

<sup>273</sup> Schoukens, *supra* note 258, at 10.

<sup>274</sup> *Ibid.*, 340.

<sup>275</sup> *Ibid.*

<sup>276</sup> International Fund for Animal Welfare, *supra* note 241.

<sup>277</sup> *Ibid.*

Regarding marine areas, the NRL underlines the aim to reach a restoration target of 20% of the marine areas by 2030 and achieve 90%-100% restoration of those ecosystems by 2050 (art. 5(1)).<sup>278</sup> The proposal aims to build upon the protections afforded by the Habitats Directive.<sup>279</sup> For instance, the Annex referred to in the latter article is closely inspired by the Habitats Directive, listing different habitat types requiring protection.<sup>280</sup> Moreover, Article 5 of the NRL is dedicated to restoring marine ecosystems covering additional marine areas beyond those the Directive addresses. The close alignment between the NRL and the Habitats Directive ensures a complementary approach to habitat conservation.<sup>281</sup>

Restoration is defined in the proposal as the following:

*Process of actively or passively assisting the recovery of an ecosystem towards or to good condition, of a habitat type to the highest level of condition attainable and to its favourable reference area, of a habitat of a species to a sufficient quality and quantity, or of species populations to satisfactory levels, as a means of conserving or enhancing biodiversity and ecosystem resilience. (Article 3(3))*

This definition is complemented by three types of obligations regarding marine ecosystems: one obligation to continuously (Article 5(6)) improve habitats not in good condition (Article 5(1) jo. Annex II), one obligation to continuously (Article 5(6)) reestablish the habitats types (Article 5(2) jo. Annex II) and one obligation to enact restoration measures for species listed in specific Annexes of the Habitats Directive and in the Birds Directive to enhance the quality and quantity of their habitats (Article 5(3)). In addition, the NRL emphasizes the creation of a network of protected habitat types (Article 5(5)) and imposes obligations to prevent deterioration (Article 5(7)). Relating to the obligation of non-deterioration, the NRL highlights that restoration has to be paired with protection and maintenance, which are essential to ensure the avoidance of deterioration of ecosystems before and/or after restoration.<sup>282</sup> The restoration obligations are accompanied by clear temporal and quantitative obligations ensuring accountability (Articles 2(1) and 2(2)), with definitions for "good condition" and "sufficient quality and quantity" provided in Articles 3(4-6) to minimize interpretation discrepancies.

In addition to these clear and framed obligations, the proposal introduces National Restoration Plans (NRPs). NRPs must be prepared by the Member States and drafted following a pre-monitoring and pre-research phase conducted to identify the restoration needs (the

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<sup>278</sup> Ecologic Institute, *supra* note 6, at 2.

<sup>279</sup> European Commission, Nature Restoration Law, *supra* note 249, at page 13.

<sup>280</sup> Niels Hoek, *A Critical Analysis of the Proposed EU Regulation on Nature Restoration: Have the Problems Been Resolved?*, 31 EUROPEAN ENERGY AND ENVIRONMENTAL LAW REVIEW (2022), 325.

<sup>281</sup> *Ibid.*, 326.

<sup>282</sup> European Commission, Nature Restoration Law, *supra* note 249, at page 13.

conditions, quality and quantity of the species' habitats listed in the respective annexes – Article 11(2)). Then, Member States must formulate measures necessary to achieve restoration targets (Article 11(1)). NRPs must consider various legislative obligations, including those under the Habitats Directive and the CFP (Article 11(7)), underscoring the importance of fisheries management and fish stock conservation.<sup>283</sup> This emphasis is further exemplified in the proposed measures outlined in Annex VII, underlining different actions for Member States to incorporate into their NRPs (Article 11(8)). These measures encompass a spectrum of actions that the fisheries sector can adopt, comprising active and passive restoration approaches. For instance, Annex VII highlights the construction or rehabilitation of coral reefs to provide essential structures for marine life, representing an active restoration measure. Additionally, fishing gears with reduced impact on the sea floor are highlighted, exemplifying a passive restoration measure to minimize ecological disturbance.

Furthermore, the proposal outlines monitoring, reporting, and assessment mechanisms to ensure the effectiveness of restoration efforts. The European Commission examines the national plans (Article 14), and Member States must assess their plans every ten years (Article 15). Moreover, monitoring and reporting duties are imposed to track progress and compliance (Articles 17 and 18).

Through this legislation, the EU seeks to lead ecological restoration efforts,<sup>284</sup> underlining the need “to do more and better for nature”.<sup>285</sup> However, concerns remain despite the proposed EU Nature Restoration Law representing a significant stride towards marine ecosystem restoration.<sup>286</sup> Vera Coelho, Oceana's Senior Director, criticizes the legislation for not addressing key challenges, particularly regarding fisheries management.<sup>287</sup> Coelho highlights current flaws in EU fisheries management, describing it as "defective" and enabling Member States to obstruct meaningful conservation measures.<sup>288</sup> Indeed, while the proposal emphasizes the restoration or re-establishment of marine habitats, it must be acknowledged that the fisheries sector remains a primary driver of marine biodiversity decline.<sup>289</sup> To ensure the proposal's effectiveness, addressing the challenges within the fisheries sector in parallel with

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<sup>283</sup> *Ibid*, preambles 38-39.

<sup>284</sup> European Commission, EU biodiversity strategy for 2030 – Bringing nature back into our lives (2021), section 2.2.

<sup>285</sup> *Ibid*, section 2.1.

<sup>286</sup> European Commission, Nature Restoration Law, *supra* note 249, at 13.

<sup>287</sup> Seas at Risk, *EU nature law could be gamechanger for marine biodiversity, but will be meaningless if fisheries not properly addressed – NGO reaction* (22 June 2022), available at <https://seas-at-risk.org/press-releases/eu-nature-law-could-be-gamechanger-for-marine-biodiversity-but-will-be-meaningless-if-fisheries-not-properly-addressed-ngo-reaction/>

<sup>288</sup> *Ibid*.

<sup>289</sup> Schwarte, *supra* note 4.

the restoration framework is imperative. As articulated in the proposal’s preamble and the EU Biodiversity Strategy for 2030, the pivotal role of fisheries in marine ecosystem protection is recognized.<sup>290</sup> Indeed, preamble 38 and 39 and Article 12(3) of the proposal highlight the importance of considering fisheries measures pursued under the CFP. Moreover, the Commission, underlining the need for action towards the restoration of marine ecosystem restoration and conservation of fisheries resources, is mandated to propose a new action plan to integrate these concerns.<sup>291</sup> It, therefore, signals a concerted effort to align restoration initiatives with fisheries management objectives.

In conclusion, by enacting a clear definition of restoration in law and setting legal targets and binding obligations, the EU has paved the way for significant legal advancements in ecological restoration. Compared to the SER definition, the EU's definition of restoration encompasses both passive and active approaches. It also considers ecosystems, habitat types and habitats of species, and species populations across various assessment criteria (e.g., highest attainable condition, sufficient quality and quantity). Moreover, the final goal of restoration — to conserve or enhance “biodiversity and ecosystem resilience”<sup>292</sup> — clarifies the purpose, reducing ambiguity in interpretation. The targets and obligations set by the NRL are revolutionary, as they impose enforceable duties on states, making them accountable in courts.

Therefore, whether the process depicted in the NRL contributes to further ecological restoration remains to be seen. Moreover, while the EU Nature Restoration Law represents a significant step forward, addressing concerns within the fisheries sector is essential for its success. By recognizing the intertwined nature of restoration and fisheries management, the EU can foster a holistic approach to marine conservation that ensures marine ecosystems’ long-term health and resilience. With several Member States withdrawing their support,<sup>293</sup> the critical and final step for the law's enactment remains to be determined.

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<sup>290</sup> European Commission, Nature Restoration Law, *supra* note 249, at preambles 38-39 and Art. 12; European Commission & Directorate-General for Environment, EU biodiversity strategy for 2030 – Bringing nature back into our lives (Publications Office of the European Union 2021), section 2.2.

<sup>291</sup> European Commission, Nature Restoration Law, *supra* note 249, at preamble 36.

<sup>292</sup> *Ibid.*, Art. 3(3)

<sup>293</sup> The Guardian, *New EU nature law will fail without farmers, scientists warn* (30 April 2024), available at <https://www.theguardian.com/environment/2024/apr/26/eu-must-work-with-farmers-if-new-nature-restoration-law-is-to-succeed-say-experts-aoe> (last accessed 30<sup>th</sup> May 2024).

### 3. Interweaving of ecological restoration and ocean fisheries governance

Various statistics and observations depicting ecosystem degradation underscore the lack of restoration efforts in marine ecosystems.<sup>294</sup> As explored in the previous section, this deficiency can be partly attributed to the absence of legal definitions and the gaps in the international legal framework concerning restoration.<sup>295</sup> Mansourian contends that a fundamental element for successful restoration is a proper governance framework, emphasizing that ecosystem degradation often stems from governance deficiencies.<sup>296</sup> Restoration efforts, therefore, cannot thrive without addressing governance failures.<sup>297</sup>

As commonly recognized, a governance framework encompasses laws, institutions, and mechanisms for implementation.<sup>298</sup> Inadequate support for ecosystem restoration projects can result from various factors, such as the absence or ineffectiveness of regulations, lack of representative institutions, poor participation, and enforcement gaps.<sup>299</sup> Given the significant impact of the fisheries sector on marine ecosystems and the interest of the fisheries sector in benefiting from healthy marine ecosystems,<sup>300</sup> the latter becomes an interesting subject of analysis concerning ecological restoration. The ocean fisheries governance framework boasts a well-established structure, including different laws, institutions, monitoring, reporting, and enforcement mechanisms, which renders the framework legally attractive to address the gaps of ecological restoration.

Despite limitations and issues of ocean fisheries governance, RFMOs hold promise for contributing to ecological restoration efforts and addressing the current deficiencies in ecological restoration governance. Section 3 addresses the main research question: "To what extent can regional fisheries management organizations enhance ecological restoration?" This section overviews the ocean fisheries governance framework and introduces RFMOs (section 3.1). It then examines three reasons why RFMOs could play a role in marine ecosystem restoration: their application of ecosystem-based management principles to fisheries (section

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<sup>294</sup> Ecologic Institute, *supra* note 6.

<sup>295</sup> Stephanie Mansourian, Governance and Restoration, in ROUTLEDGE HANDBOOK OF ECOLOGICAL AND ENVIRONMENTAL RESTORATION (Stuart K. Allison & Stephen D. Murphy eds., 2017), 405.

<sup>296</sup> *Ibid.*

<sup>297</sup> *Ibid.*

<sup>298</sup> Coral Triangle Initiative, *supra* note 15.

<sup>299</sup> Mansourian, *supra* note 295, at 411.

<sup>300</sup> Limin Dong & Peiqing Guo, *The Practice of Ecosystem Approach to Fisheries on the High Seas: Challenges and Suggestions*, 14 SUSTAINABILITY (2022), 6-7; Schwarte, *supra* note 294.



3.2.1), range of competencies and enacted measures (section 3.2.2), and enforcement mechanisms (section 3.2.3). However, barriers and challenges exist at the interface between RFMOs and ecological restoration, underlined in Section 3.3. These include the lack of definitions hindering the development of ecological restoration within RFMOs' competencies, the opt-out procedure for conservation and management measures, the lack of scientific knowledge, and RFMOs' primary focus on productivity rather than nature conservation. Nonetheless, these challenges are surmountable hurdles. Notably, collaboration and inspiration from existing regional bodies such as OSPAR can guide RFMOs to play a role in the ecological restoration of marine ecosystems, as explained in Section 3.4.

### 3.1. Ocean Fisheries Governance

Ocean governance encompasses three key components: a legal framework, institutional structures, and implementation mechanisms.<sup>301</sup> Similarly, ocean fisheries governance operates within this framework, consisting of international, national, and local laws, both binding and soft, and established institutions, policies, and mechanisms. Below, an array of established instruments and institutions of the ocean fisheries governance framework are explained, underscoring its well-established and recognized nature.

UNCLOS serves as the overarching legal framework for ocean fisheries governance.<sup>302</sup> Among its implementing agreements, the United Nations Fish Stocks Agreement (UNFSA)<sup>303</sup> addresses specific challenges in fisheries management, namely transboundary fishery resources requiring cooperation between states. Both Conventions underline important principles and institutions relevant to ecological restoration, as analyzed in section 2.4.3. and below. Additionally, binding FAO agreements such as the Agreement on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated (IUU) Fishing<sup>304</sup> aim to combat IUU fishing by imposing obligations on relevant states. In the context of ecological restoration, IUU fishing poses a significant threat to marine restoration projects. Specifically,

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<sup>301</sup> Coral Triangle Initiative, *supra* note 15.

<sup>302</sup> UNCLOS, *supra* note 32.

<sup>303</sup> United Nations, 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 (8 September 1995) [Hereinafter, UNFSA].

<sup>304</sup> FAO, Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (Port State Measures Agreement) (22 November 2009).

when it comes to fish stock enhancement initiatives, the effectiveness of these projects is hindered by IUU fishing activities.<sup>305</sup>

Complementing binding laws, soft law also plays a significant role in regulating fisheries management. Annually, the United Nations General Assembly adopts a Sustainable Fisheries Resolution, addressing various fisheries-related issues and outlining the focal points for the upcoming year.<sup>306</sup> The Food and Agriculture Organization (FAO) provides guidance on best practices for sustainable fisheries management,<sup>307</sup> including the FAO Code of Conduct for Responsible Fisheries<sup>308</sup> and the FAO International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing.<sup>309</sup> These soft laws, procedures by bodies that underline the current concerns and aim to develop guidelines on how the fisheries sector could adapt to or mitigate threats,<sup>310</sup> contribute to the comprehensive approach to fisheries governance.

In addition to these international instruments, states establish national laws and regulations governing fisheries management and conservation within their EEZs and territorial waters. Furthermore, regional sea initiatives, such as the UN Regional Seas Programme entailing regional mechanisms to conserve marine and coastal ecosystems,<sup>311</sup> contribute significantly to ocean governance.<sup>312</sup>

The institutional framework mentioned above is accompanied by the primary organization tasked with managing fisheries resources in specific regions or areas beyond national jurisdiction: RFMOs.<sup>313</sup> RFMOs are a subset of regional fisheries bodies (RFBs). Currently 50 worldwide,<sup>314</sup> RFBs are categorized into regional fisheries advisory bodies (RFABs) or regional fisheries management organizations (RFMOs).<sup>315</sup> The advisory bodies do

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<sup>305</sup> Yimin Ye & John Valbo-Jørgensen, *Effects of IUU fishing and stock enhancement on and restoration strategies for the stellate sturgeon fishery in the Caspian Sea*, 131 FISHERIES RESEARCH (2012).

<sup>306</sup> FAO, *Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017*. (1 April 2020), 2.

<sup>307</sup> Syma A. Ebbin, et al., *A SEA CHANGE: THE EXCLUSIVE ECONOMIC ZONE AND GOVERNANCE INSTITUTIONS FOR LIVING MARINE RESOURCES* (Springer Dordrecht 2005), 7.

<sup>308</sup> FAO, *Code of Conduct for Responsible Fisheries (CCRF)* (31 October 1995).

<sup>309</sup> FAO, *International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA)* (2001).

<sup>310</sup> Xiyan Zhu & Jianye Tang, *The interplay between soft law and hard law and its implications for global marine fisheries governance: A case study of IUU fishing*, AQUACULTURE AND FISHERIES (2023), 1.

<sup>311</sup> UN Environmental Programme, *Regional Seas Programme*, available at <https://www.unep.org/topics/ocean-seas-and-coasts/regional-seas-programme> (last accessed 30<sup>th</sup> May 2024).

<sup>312</sup> Bowman, *supra* note 160, at 159.

<sup>313</sup> Haas, *supra* note 17, at 1.

<sup>314</sup> FAO, *Regional fishery bodies (RFB)* (2024), available at <https://www.fao.org/fishery/en/collection/organization> (last accessed 30<sup>th</sup> May 2024).

<sup>315</sup> FAO, *Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017*. (1 April 2020), 1.

not have the authority to enact measures upon their state parties, which differentiate them from RFMOs. RFMOs, on the other hand, have the power to establish and enforce regulations for the conservation and sustainable use of fish stocks in their respective areas. While both guide states with expertise, RFMOs are more concerned with the political interest of their members.<sup>316</sup> Moreover, most RFABs' areas of competencies are limited in the national waters, which is different for RFMOs.<sup>317</sup> Given that RFABs lack regulatory authority,<sup>318</sup> this paper focuses on RFMOs, which wield more significant influence in protecting marine ecosystems within fisheries management.

Thus, the governance framework for fisheries is well established, with overarching legal instruments and various institutions contributing to developing fisheries management laws and policies. However, ecological restoration is not a priority within fisheries governance, which predominantly focuses on production rather than the conservation of marine ecosystems.<sup>319</sup> This is evident from the differing objectives of institutions and instruments they employ, and the lack of references to restoration in fisheries instruments. Nonetheless, ecological restoration is relevant within fisheries' governance. For example, the Chesapeake Bay oyster restoration program is a NOAA fisheries initiative that aims to restore marine ecosystems within the context of fisheries governance.<sup>320</sup> Similar initiatives, particularly by institutions responsible for adopting conservation and management measures in various maritime zones of the ocean, such as RFMOs, could highlight the importance of ecological restoration within fisheries' governance.

### 3.1.1. RFMOs: why are they relevant

FAO qualify RFMOs as “the most important building blocks of fisheries management” due to their authority to adopt conservation and management measures binding on the parties of the RFMOs and on anyone wishing to fish in the areas governed by the organizations.<sup>321</sup> RFMOs are created to fulfil the cooperation obligations set in several international treaties.<sup>322</sup> They are

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<sup>316</sup> *Ibid*, 65.

<sup>317</sup> *Ibid*, 65.

<sup>318</sup> Bradford E. Brown, *Regional fishery management organizations and large marine ecosystems*, 17 ENVIRONMENTAL DEVELOPMENT (2016), 204.

<sup>319</sup> Dong, *supra* note 300, at 6.

<sup>320</sup> NOAA Fisheries, *Chesapeake Bay: Oyster Restoration*, available at <https://www.fisheries.noaa.gov/topic/chesapeake-bay/oyster-restoration> (last accessed 30th May 2024).

<sup>321</sup> FAO, *Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017*. (1 April 2020), 7.

<sup>322</sup> FAO, *supra* note 314.

recognized by the international sphere as strengthening the governance of shared fish stocks<sup>323</sup> and have been mandated through the UN or the FAO<sup>324</sup> to enact conservation and management measures, ranging from area closures to regulations on fishing techniques and gear.<sup>325</sup>

There are two main categories of RFMOs: generic RFMOs, mandated to enact Conservation and Management Measures (CMMs) in specific areas, and species-specific RFMOs, focusing on particular species like tuna, anadromous stocks, or cetaceans.<sup>326</sup> Some RFMOs, such as the International Whaling Commission (IWC), the Indian Ocean Tuna Commission (IOTC), and the Inter-American Tropical Tuna Commission (IATTC), have the authority to regulate within territorial waters.<sup>327</sup> Others, like the Northwest Atlantic Fisheries Organization (NAFO) and the North-East Atlantic Fisheries Commission (NEAFC), cover both EEZs and the high seas but are only empowered to regulate in Areas Beyond National Jurisdiction or within EEZs with the explicit consent of coastal states.<sup>328</sup> However, most RFMOs have jurisdiction over both EEZs and areas beyond national jurisdiction, as exemplified by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the International Commission for the Conservation of Atlantic Tunas (ICCAT).<sup>329</sup> Therefore, the difficulties in enforcing measures on the high seas, caused by the absence of a single governing authority, are mitigated by RFMOs as the latter have the competence to monitor access and enforce their measures to their mandated areas through their state members.<sup>330</sup>

One may wonder why RFMOs are better suited than their member states to enact CMMs if the enforcement of such measures ultimately falls on the member states.<sup>331</sup> Indeed, as discussed further in section 3.2.3, the enforcement means of RFMOs rely on their member states, potentially rendering CMMs inefficient if these states fail to ensure proper monitoring and enforcement. Nevertheless, RFMOs are better equipped to set standards regarding CMMs

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<sup>323</sup> FAO, Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017. (1 April 2020), 1.

<sup>324</sup> FAO, Code of Conduct for Responsible Fisheries (CCRF) (31 October 1995), art. 6(12); Ebbin, *supra* note 307, at 125.

<sup>325</sup> Schwarte, *supra* note 4, at 21; FAO, Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017. (1 April 2020), 1.

<sup>326</sup> FAO, Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017. (1 April 2020), 8.

<sup>327</sup> *Ibid.*, 9.

<sup>328</sup> *Ibid.*

<sup>329</sup> James Harrison, *Fishing and the Conservation of Marine Living Resources*, in *SAVING THE OCEANS THROUGH LAW - THE INTERNATIONAL LEGAL FRAMEWORK FOR THE PROTECTION OF THE MARINE ENVIRONMENT* (James Harrison ed. 2017), 183-384.

<sup>330</sup> Gjerde, *supra* note 21.

<sup>331</sup> UNFSA, *supra* note 303, at Art. 19.

for several reasons. Firstly, RFMOs have the authority to enact binding CMMs, which assert a degree of control over areas extending beyond national jurisdiction.<sup>332</sup> These measures embody a regional and ecosystem-based approach to a variety of issues, ensuring broader protection and a higher impact on ecosystems due to the collective nature of these measures. The mandates of RFMOs to enact uniform measures across all member states ensure a coordinated approach that individual states might struggle to achieve independently. Moreover, RFMOs benefit from pools of scientific resources, a result of the UNCLOS obligation imposed on states to share available scientific information.<sup>333</sup> This sharing ensures that state-of-the-art sciences and technologies are utilized to advance RFMO objectives.<sup>334</sup> In contrast, individual states are limited in regulating their vessel-based activities beyond national jurisdiction<sup>335</sup> and are constrained by their own resources. Thus, this paper highlights RFMOs, rather than individual member states, as crucial players in protecting marine ecosystems. Their capacity to enact binding, scientifically informed, and regionally coordinated CMMs positions them as essential entities for effective marine conservation.<sup>336</sup>

Despite the diminished role of regional fisheries organizations following the introduction of EEZs in UNCLOS III,<sup>337</sup> their significance was revitalized when the management of straddling and highly migratory fish stocks became a pressing issue, leading to the development of the UN Fish Stocks Agreement (UNFSA).<sup>338</sup> This Agreement aimed at regulating fishing practices in the high seas that were previously unregulated,<sup>339</sup> aligning with UNCLOS cooperation obligations for the management of straddling (Article 63 UNCLOS), highly migratory (Article 64 UNCLOS), marine mammals (Article 65 UNCLOS) fish stocks in the EEZ (Part V UNCLOS) and in the high sea (Part VII, notably, Article 118 UNCLOS). While these organizations operate within the legal framework provided by UNCLOS, they are not bound by substantive rules created by the Convention; rather, UNCLOS serves as the foundation for their operations.<sup>340</sup> To align with UNCLOS, UNFSA reinforces cooperation obligations for states parties to the Convention by promoting regional fisheries organizations

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<sup>332</sup> *Ibid*, Art. 3.

<sup>333</sup> UNCLOS, *supra* note 32, at Art. 61(5).

<sup>334</sup> e.g. Haas, *supra* note 17, at 2.

<sup>335</sup> e.g. UNCLOS, *supra* note 32, at Art. 94.

<sup>336</sup> Gjerde, *supra* note 21.

<sup>337</sup> Ebbin, *supra* note 307, at 121.

<sup>338</sup> *Ibid*, 122.

<sup>339</sup> *Ibid*.

<sup>340</sup> *Ibid*, 121.

as the main actors responsible for fulfilling these obligations.<sup>341</sup> Indeed, the Agreement, which strengthens the framework for regional fisheries organizations, is the cornerstone treaty regarding RFMOs competence.<sup>342</sup> It specifies that only members of such organizations or states that agree to abide by their CMM may have access to the areas under the authority of the organizations, thereby limiting the freedom of fishing on the high seas found in Article 87 UNCLOS (Article 8(4) UNFSA).<sup>343</sup> Furthermore, the UNFSA underlines that states that are not parties to such regional fisheries organizations or do not agree to their CMM are still bound by their obligation to cooperate, according to UNCLOS and the UNFSA (Article 17(1) UNFSA). As a result, these states may not enact laws contrary to the decisions of the organizations.<sup>344</sup> Therefore, RFMOs have the exclusive authority to regulate access and conditions of catch of specific fish stocks, which is a notable exception from Articles 116-117 UNCLOS.<sup>345</sup>

A remaining gap is that the UNFSA applicability is limited to straddling fish stocks and highly migratory fish stocks, excluding “discrete high seas fish stocks”.<sup>346</sup> However, the UN General Assembly highlighted on numerous occasions that the general principles of UNFSA are also applicable to highly discrete fish stocks and that RFMOs should adopt CMM for these stocks accordingly.<sup>347</sup> Academic support for this notion exists, as many states and RFMOs have been using the principles of the UNFSA to address discrete fish stocks.<sup>348</sup>

### **3.2. RFMOs and ecological restoration: the potential interface**

With the ocean fisheries governance framework and the main elements pertaining to RFMOs being established, the assessment now turns to why RFMOs could play a role in marine ecosystem restoration. The lack of international frameworks for environmental protection in

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<sup>341</sup> UNFSA, *supra* note 303, at Arts. 8(1) and 8(3); Independent Panel, Recommended Best Practices for Regional Fisheries Management Organizations: Report of an independent panel to develop a model for improved governance by Regional Fisheries Management Organizations. (2007), 4.

<sup>342</sup> FAO, Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017. (1 April 2020), 7.

<sup>343</sup> Ebbin, *supra* note 307, at 123.

<sup>344</sup> UNFSA, *supra* note 303, at Art. 17.

<sup>345</sup> Harrison, *supra* note 329, at 178.

<sup>346</sup> FAO, Current legal and institutional issues relating to the conservation and management of high-seas deep-sea fisheries. pt. 113-139 (2007), 113.

<sup>347</sup> UN General Assembly, Report of the resumed Review Conference on the 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 (20 June 2023) [Hereinafter, UN General Assembly, Review Conference A/CONF.210/2023/6].

of Straddling (5 July 2006), Annex, para 16; Gjerde, *supra* note 21, at 165.

<sup>348</sup> Gjerde, *supra* note 21, at 165; Ebbin, *supra* note 307, at 127.

the high seas areas is often seen as a barrier to the effective protection of the maritime zone.<sup>349</sup> This will change with the newly agreed BBNJ Agreement. In addition, RFMOs already have the structure needed to ensure the protection of the ocean. Indeed, in the context of fisheries, RFMOs emerge as crucial institutions regulating fishing activities and the management of living resources. This section aims to demonstrate that, based on three rationales, RFMOs play a critical role in biodiversity conservation, including the restoration of ecosystems within their respective allocated areas. Firstly, RFMO's emphasis on ecosystem management in fisheries, a guiding principle crucial to ecological restoration, is assessed as relevant to ecological restoration. Then, the competencies and implemented measures of RFMOs regarding sustainable fisheries management practices and marine protected areas are outlined. These measures, often falling within the realm of passive ecological restoration, are underscored as key actions toward ecosystem restoration. Lastly, the existing RFMOs' enforcement mechanisms on the high seas, where no other bodies possess such authority, are highlighted. Consequently, due to these three rationales, RFMOs could harness the momentum and emerge as oceanic leaders in the United Nations Decade of Ecosystem Restoration (2021-2030).

### 3.2.1. Principle guiding RFMOs measures: ecosystem approach to fisheries (EAF)

Ecological restoration is often regarded as a subset of ecosystem management practices, underlining their close correlation.<sup>350</sup> Enright and Boteler highlight the ecosystem approach as being directed towards the preservation and restoration of an ecosystem's health or integrity.<sup>351</sup> Moreover, many scholars advocate for an ecosystem-based management approach to define restoration targets and assess project progress.<sup>352</sup> Hence, for RFMOs to effectively contribute to the ecological restoration of marine ecosystems, they must be mandated to implement measures that prioritize ecosystem-based management.

Abelson underscores the importance of considering the interaction between human practices and marine ecosystems, framing them as social-ecological systems.<sup>353</sup> He argues that this interaction should inform the creation and implementation of restoration plans, especially

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<sup>349</sup> Schwarte, *supra* note 4, at 31.

<sup>350</sup> McDonald et al., *supra* note 187.

<sup>351</sup> Sarah Ryan Enright & Ben Boteler, *The Ecosystem Approach in International Marine Environmental Law and Governance: Theory, Tools and Applications*, in ECOSYSTEM-BASED MANAGEMENT, ECOSYSTEM SERVICES AND AQUATIC BIODIVERSITY (Timothy G. O'Higgins, et al. eds., 2020), 336.

<sup>352</sup> Audrey L Mayer & Max Rietkerk, *The dynamic regime concept for ecosystem management and restoration*, 54 BIOSCIENCE (2004), 1018; Abelson, *supra* note 22 at 161.

<sup>353</sup> Abelson, *supra* note 22 at 159.

in areas where ecosystem services are impacted by degradation.<sup>354</sup> In fisheries, RFMOs emerge as crucial institutions regulating fishing activities and managing living resources, which are inherently linked to human practices. Fisheries management thus represents a social-ecological system where the focus cannot solely be on fish stocks and fishing activities, as living resources are inseparable from their marine environment.<sup>355</sup> However, Dong and Guo note that fisheries management often emphasizes fisheries over ecosystems, with RFMOs primarily aiming at fisheries management rather than ecosystem preservation.<sup>356</sup> Nonetheless, conserving and managing fish stocks involves protecting their habitats and, consequently, the marine ecosystem. This perspective is further endorsed by the emerging ecosystem approach to fisheries (EAF), aiming to organize and oversee fisheries operations to meet societal demands while preserving marine ecosystem resources and services for future generations.<sup>357</sup>

While early-established RFMOs primarily focused on management and optimal utilization, more recent ones have incorporated sustainable use and conservation goals into their conventions.<sup>358</sup> This shift is accompanied by a move from single-species management to an EAF,<sup>359</sup> partly influenced by the UNFSA and the FAO Code of Conduct, both of which advocate for the ecosystem approach.<sup>360</sup> The UNFSA explicitly mentions the ecosystem approach in its general principles (e.g., Articles 5(d) and (e)). The reference to the ecosystem approach is also interpreted from provisions where the EAF is considered an essential component, such as in Article 6, which relates to the precautionary approach (Article 5(c) and Article 6)<sup>361</sup> and Article 7, which addresses the compatibility of conservation and management measures.<sup>362</sup> Furthermore, the Review Conference, tasked with assessing the effectiveness of the Agreement,<sup>363</sup> adopted several recommendations to strengthen the EAF under UNFSA and through RFMOs.<sup>364</sup>

Although ecosystem-based management measures are not prevalent in most RFMO conventions,<sup>365</sup> many, including NEAFC, NAFO, the South East Atlantic Fisheries

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<sup>354</sup> *Ibid.*

<sup>355</sup> Dong, *supra* note 300.

<sup>356</sup> *Ibid.*, 6.

<sup>357</sup> FAO, Fisheries management: The ecosystem approach to fisheries (2003), 13.

<sup>358</sup> Schwarte, *supra* note 4, at 21.

<sup>359</sup> Dong, *supra* note 300, at 1.

<sup>360</sup> Haas, *supra* note 17, at 3.

<sup>361</sup> Enright, *supra* note 351, at 343.

<sup>362</sup> UN General Assembly, Review Conference A/CONF.210/2023/6, *supra* note 347, at 11 and 37.

<sup>363</sup> UNFSA, *supra* note 303, at Art. 36.

<sup>364</sup> UN General Assembly, Review Conference A/CONF.210/2023/6, *supra* note 347, at respectively 17 and 30, and 9 and 37.

<sup>365</sup> FAO, Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017. (1 April 2020), 14; Dong, *supra* note 300, at 4.



Organization (SEAFO), and the Western and Central Pacific Fisheries Commission (WCPFC) have adopted the approach in their respective CMM.<sup>366</sup> Despite its need for further development,<sup>367</sup> the ecosystem approach has garnered attention and application within RFMOs, reflecting a growing recognition of its importance in ensuring sustainable fisheries and healthy marine ecosystems.<sup>368</sup> Moreover, as Haas et al. argued, RFMOs have a high number of measures which apply the EAF.<sup>369</sup>

However, the EAF comes with its own set of challenges and complexities.<sup>370</sup> Limin Dong & Peiqing Guo highlight that the EAF is not a "one-size-fits-all" approach; uniformity in measures and clear guidelines may not be suitable as each ecosystem's unique circumstances and peculiarities must be considered before any measures can be taken. This variability in approach is evident in the lack of implementation of the EAF in several RFMOs, partly due to the absence of legal obligations regarding the EAF and RFMOs.<sup>371</sup>

Despite these challenges, several RFMOs have taken significant measures aligned with the ecosystem approach. For instance, seasonal restrictions and the prohibition of bottom trawling,<sup>372</sup> which can be part of the suite of measures in marine protected areas, represent key actions falling within passive restoration measures. These measures contribute to removing threats and damages imposed on the seabed, thereby supporting ecosystem recovery. Additionally, improvements regarding implementing the ecosystem-based management approach to fisheries are advanced through collaborative efforts between RFMOs and other institutions or organizations.<sup>373</sup> For example, establishing Memoranda of Understanding (MoUs), which is further discussed in section 3.4, is advantageous to the ecosystem management approach as it fosters coordination and shared responsibility across different regions and jurisdictions.<sup>374</sup> Through their increasing consideration of the ecosystem approach in their CMMs and opportunities for collaboration, RFMOs could integrate considerations for ecological restoration within their management frameworks.

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<sup>366</sup> Schwarte, *supra* note 4, at 21.

<sup>367</sup> Dong, *supra* note 300, at 2.

<sup>368</sup> *Ibid*, 4 and 6.

<sup>369</sup> Bianca Haas, et al., *Explicit targets and cooperation: regional fisheries management organizations and the sustainable development goals*, 21 INTERNATIONAL ENVIRONMENTAL AGREEMENTS: POLITICS, LAW AND ECONOMICS (2021), 141.

<sup>370</sup> Dong, *supra* note 300, at 6.

<sup>371</sup> F.A.O.U. Nations & W.J. Fletcher, A REVIEW OF THE APPLICATION OF THE FAO ECOSYSTEM APPROACH TO FISHERIES (EAF) MANAGEMENT WITHIN THE AREAS BEYOND NATIONAL JURISDICTION (ABNJ) (Food & Agriculture Org. 2020), x; Haas, *supra* note 17, at 4.

<sup>372</sup> Haas, *supra* note 17, at 4.

<sup>373</sup> Haas, *supra* note 369, at 135.

<sup>374</sup> Haas, *supra* note 17, at 4.

### 3.2.2. RFMOs competences and measures

Enhancing the preservation of marine ecosystems is increasingly seen by experts as reliant on two critical measures: establishing comprehensive networks of MPAs and overhauling unsustainable fisheries management practices.<sup>375</sup> These strategies are considered indispensable safeguards for preserving oceanic biodiversity and sustainability.<sup>376</sup> Fisheries represent the most significant threat to the high seas and deep seabed regions, with excessive harvesting and destructive fishing methods endangering marine biodiversity and surpassing sustainable resource management practices.<sup>377</sup> Several scholars emphasize that reducing the primary stressors damaging ecosystems is a prerequisite for effective restoration efforts.<sup>378</sup> Marc-Philip Buckhout, a marine Policy Officer with Seas At Risk, supports this point, stating:

*Restoring degraded seagrass meadows play a vital role in both mitigating climate change and reversing biodiversity loss. However, there is no point restoring on the one hand, while bottom dredging through them and around them. We need to put in place strict protection measures to prevent these key areas from being destroyed by harmful human activities.*<sup>379</sup>

RFMOs, having a dual mandate to establish marine protected areas<sup>380</sup> and regulate fishing practices, underscore the crucial role they could be embracing as active stakeholders in the United Nations 2021-2030 Decade on Ecosystem Restoration. Both types of measures fall within the ambit of the passive restoration approach as they aim to remove or reduce the threats of overfishing, bycatch and unsustainable fishing techniques impacting the fish stock. Although the jurisdictional limits of RFMOs' measures on the high seas bind solely member states, some provisions under the UNFSA facilitate agreements between RFMOs and non-members to ensure the broad application of their measures.<sup>381</sup> Moreover, the duty to cooperate is an overarching obligation that applies to third parties, even if RFMOs' measures do not bind them.<sup>382</sup> These aspects will be further discussed in section 3.2.3. Hereunder, the two types of measures addressed in the dual mandate are analyzed in relation to ecological restoration.

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<sup>375</sup> Gjerde, *supra* note 21, at 147.

<sup>376</sup> *Ibid.*

<sup>377</sup> Schwarte, *supra* note 4.

<sup>378</sup> Brian Silliman, et al., *Marine ecosystem restoration (MER) - a call for a more inclusive paradigm*, 10 FRONTIERS IN MARINE SCIENCE (2023), 5.

<sup>379</sup> Seas at Risk, *supra* note 287.

<sup>380</sup> see section 3.2.; CBD, Decision VII/5, Marine and coastal biological diversity (13 April 2004), para. 21(b).

<sup>381</sup> UNFSA, *supra* note 303, at Art. 17(1).

<sup>382</sup> *Ibid.*

### 3.2.2.1.1. *Spatial management: marine protected areas (MPAs)*

The concept of MPAs, defined as areas receiving "a higher level of protection than its surroundings" by the CBD Programme of Work on Marine Biodiversity,<sup>383</sup> originated from concerns regarding the impacts of fisheries on marine ecosystems.<sup>384</sup> Fisheries practices can result in fish stock collapses, bycatch, and changes in ecosystems due to bottom-dragging gear,<sup>385</sup> which is inconsistent with international goals and standards outlined in agreements such as the UNFSA (e.g. Articles 5(g) and 5(f)) and the FAO Code of Conduct for Responsible Fishing (e.g. Article 6.6).<sup>386</sup> MPAs are essential tools for enforcing collective responsibilities to prevent the depletion of common fisheries resources and protect marine species and ecosystems.<sup>387</sup> Indeed, MPAs are widely acknowledged for their critical role in fisheries management, biodiversity conservation, and the implementation of ecosystem and precautionary approaches.<sup>388</sup> These MPA measures align with the principles of UNCLOS, which, while affirming the freedom of states in the High Seas (Article 87), also emphasize the general obligation to protect the marine environment (Articles 192 and following), conserve living resources, and promote cooperation among states (Articles 116-120).

Despite the relevance of MPAs in fulfilling obligations under UNCLOS, there is a notable absence of a comprehensive international legal framework governing the identification and management of MPAs in the high seas (this might change with the implementation of the BBNJ Agreement, despite the lack of consideration of fisheries management in MGRs therein as explained in section 2.4.4).<sup>389</sup> However, the international community has consistently urged RFMOs to protect marine ecosystems and fishery habitat zones, particularly vulnerable areas, by creating MPAs.<sup>390</sup> This call for action was reiterated during the UN Fish Stocks Agreement Review Conference 2023, emphasizing the importance of ecosystem-based and precautionary approaches in RFMOs' management measures.<sup>391</sup> Beyond fisheries management, the conservation of biodiversity through MPAs has been advocated by the CBD COP since 2004.<sup>392</sup>

Responding to these calls, several fisheries management bodies have established MPAs within their zones to restore depleted biodiversity and enhance fish populations.<sup>393</sup> MPAs

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<sup>383</sup> CBD, Decision VII/5, Marine and coastal biological diversity (13 April 2004), note 10.

<sup>384</sup> OSPAR Commission, *supra* note 99.

<sup>385</sup> *Ibid.*

<sup>386</sup> Gjerde, *supra* note 21, at 149.

<sup>387</sup> *Ibid.*, 148.

<sup>388</sup> *Ibid.*, 143.

<sup>389</sup> Schwarte, *supra* note 4, at 1.

<sup>390</sup> e.g. UN General Assembly, Resolution A/RES/59/25, *supra* note 78, at paras 66-70.

<sup>391</sup> UN General Assembly, Review Conference A/CONF.210/2023/6, *supra* note 347.

<sup>392</sup> CBD, Decision VII/5, Marine and coastal biological diversity (13 April 2004).

<sup>393</sup> Dover, *supra* note 181; Gjerde, *supra* note 21, at 145.

typically encompass a spectrum of protection levels, ranging from strictly protected zones with no human activity to restricted zones with specific limitations on certain activities or species.<sup>394</sup> The setup and management of MPAs vary depending on the covered zone.<sup>395</sup> Within the fisheries sector, RFMO-established MPAs generally target vital zones for maintaining populations, such as breeding, nursery, migratory, or feeding habitats, and areas with unique or fragile features.<sup>396</sup> These MPAs aim to achieve ecosystem and biodiversity objectives and often involve measures that restrict fishery access during certain periods or limit the use of specific fishing methods within those zones (which is further discussed in the section below).<sup>397</sup> For instance, several RFMOs have prohibited bottom fishing in most of their established MPAs (e.g. SEAFO),<sup>398</sup> while others (e.g. SPRMO)<sup>399</sup> implemented "move-on" rules for bottom fisheries in the high seas.<sup>400</sup> These rules mandate that fishing vessels relocate to another area if encountering certain species to avoid bycatch.<sup>401</sup> Therefore, MPAs are area-based management tools that entail the protection of an area and different area-based conservation measures and seasonal restrictions.<sup>402</sup>

MPAs, in addition to their regulatory functions, can also serve as restoration measures to facilitate the recovery of damaged ecosystems.<sup>403</sup> The IUCN emphasizes restoring protected areas due to their vulnerable or unique features, necessitating the maintenance or recovery of threatened species.<sup>404</sup> Similarly, the Institute for European Environmental Policy highlights MPAs as one of the most effective strategies for conserving, restoring, and alleviating pressure on marine ecosystems.<sup>405</sup> Therefore, MPAs serve towards protection (protecting from ongoing degradation)<sup>406</sup> and restoration (assisting towards recovering an ecosystem that has been

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<sup>394</sup> Gjerde, *supra* note 21, at 143; Schwarte, *supra* note 4, at 6.

<sup>395</sup> Gjerde, *supra* note 21, at 144.

<sup>396</sup> *Ibid.*, 145.

<sup>397</sup> Brian Pentz, et al., *Can regional fisheries management organizations (RFMOs) manage resources effectively during climate change?*, 92 MARINE POLICY (2018), 18.

<sup>398</sup> South East Atlantic Fisheries Organisation (SEAFO), Conservation Measure 30/15 on Bottom Fishing Activities and Vulnerable Marine Ecosystems in the SEAFO Convention Area (03 December 2015);

<sup>399</sup> South Pacific Regional Fisheries Management Organisation (SPRFMO), Conservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area (March 2021), para 27(a).

<sup>400</sup> Dover, *supra* note 181.

<sup>401</sup> *Ibid.*

<sup>402</sup> *Ibid.*

<sup>403</sup> Schwarte, *supra* note 4, at 1.

<sup>404</sup> Nigel Dudley, GUIDELINES FOR APPLYING PROTECTED AREA MANAGEMENT CATEGORIES (IUCN 2008), 11.

<sup>405</sup> Ecologic Institute, *supra* note 6, at 4.

<sup>406</sup> The definition of the general term "protection" is unfound in legal literature. Therefore, the definition in the context of wetlands is used. Latarjet R & Gray LH, *Definition of the Terms 'Protection' and 'Restoration'*, 41 ACTA RADIOLOGICA (1954).

damaged,<sup>407</sup> *inter alia*, through natural rehabilitation)<sup>408</sup> objectives. MPAs primarily aim to remove or reduce present threats and pressures in certain zones, so they fall within the ambit of passive restoration measures.

Challenges persist in creating and implementing MPAs in the high seas. One such challenge is the lack of incentives for restoration through MPAs in these areas.<sup>409</sup> In regions beyond national jurisdictions, fishing vessels have the freedom to relocate to different areas or exploit alternative resources, which can undermine restoration efforts.<sup>410</sup> Significant gaps in scientific knowledge about deep-sea ecosystems and substantial economic costs associated with restoration efforts pose additional challenges.<sup>411</sup>

Despite these challenges, organizations like the IUCN and the World Wide Fund for Nature (WWF) advocate for creating MPA networks in high seas areas.<sup>412</sup> Furthermore, the Foundation for International Environmental Law and Development (FIELD) and the IEEP recognize abundant scientific studies<sup>413</sup> suggesting that restoring marine habitats and vulnerable species in the high seas can only be achieved effectively through a protected area network.<sup>414</sup>

Therefore, MPAs enacted by RFMOs serve as restorative measures facilitating the recovery of damaged ecosystems<sup>415</sup> while also benefiting the fisheries sector by preventing depletion of common fisheries resources.<sup>416</sup> These measures are essential within the interface between ecological restoration and fisheries. Since the establishment of MPAs falls within the objectives of RFMOs, ecological restoration can only benefit from such initiatives. Moreover, to maximize the MPAs' effectiveness, a network of interconnected MPAs that create corridors for the maintenance of biological interactions is needed.<sup>417</sup> This underscores the necessity for international cooperation in managing MPAs in the High Seas, where some RFMOs operate, which will be highlighted in section 3.4.<sup>418</sup> However, as noted by Telesetsky and other scholars, while MPAs can alleviate certain human pressures on ecological systems, they cannot be the

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<sup>407</sup> e.g. FAO, Position Paper on "Ecosystem Restoration" of Production Ecosystems, in the Context of the UN Decade of Ecosystem Restoration 2021-2030. (5 February 2021).

<sup>408</sup> Abelson, *supra* note 22 at 162.

<sup>409</sup> Gjerde, *supra* note 21, at 148.

<sup>410</sup> *Ibid.*

<sup>411</sup> Schwarte, *supra* note 4, at 1 and 6.

<sup>412</sup> *Ibid.*, 30.

<sup>413</sup> *Ibid.*, 28; European Commission, Impact Assessment Report Annex VI-b Accompanying the proposal for a Regulation of the European Parliament and of the Council on nature restoration. (22 June 2022), 434.

<sup>414</sup> Dudley, *supra* note 404.

<sup>415</sup> Schwarte, *supra* note 4, at 1.

<sup>416</sup> Gjerde, *supra* note 21, at 148.

<sup>417</sup> *Ibid.*, 146; Schwarte, *supra* note 4, at 28.

<sup>418</sup> Gjerde, *supra* note 21, at 144.

sole measure to prevent the loss of ecosystems.<sup>419</sup> Moreover, the restriction or prohibition of fishing in established MPAs cannot be extended over the entirety of the RFMOs' area of competence. Therefore, other measures adopted by RFMOs, distinct from MPAs, are presented below as part of fisheries management practices.

#### 3.2.2.1.2. *Fisheries management practices*

Fishing, representing a key sector for food security,<sup>420</sup> cannot feasibly be prohibited or significantly restricted across vast areas through MPAs due to practical economic and social considerations.<sup>421</sup> Nonetheless, persistent threats like overfishing, IUU fishing and insufficient monitoring continue to endanger biodiversity.<sup>422</sup> Given that RFMOs are tasked with regulating fishing activities and conserving living resources within their jurisdiction,<sup>423</sup> measures addressing these pressures are essential. Therefore, complementary strategies are indispensable in areas not encompassed by the protective measures of MPAs.

RFMOs possess a range of CMMs to regulate activities within their areas of competence, many of which align with passive restoration principles. These measures, aimed at achieving sustainable fisheries management, are directly tied to overarching objectives outlined in binding and non-binding instruments such as the UNFSA and the FAO Code of Conduct.<sup>424</sup> Since fisheries management is dedicated to achieving the sustainable and optimal utilization of marine resources, its primary objective is to maintain fish stocks at sustainable levels through various regulations. These regulations directly target fishing mortality rates, while others indirectly influence stocks by controlling access rights, fishing methods, and other factors.<sup>425</sup> Besides MPAs, different fisheries management types illustrate passive restoration measures. For instance, rebuilding fish populations falls within passive restoration measures. It is done by establishing target reference points for sustainable fishing—based on the concept of maximum sustainable yield (MSY) — thereby ensuring responsible fisheries management and supporting sector recovery.<sup>426</sup> MSY aims to provide the most extensive fish stock that can be

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<sup>419</sup> e.g. Telesetsky, *supra* note 191, at 225; Nicole Shumway, et al., *Policy solutions to facilitate restoration in coastal marine environments*, 134 MARINE POLICY (2021), 1.

<sup>420</sup> The High Level Panel of Experts on Food Security and Nutrition, *Sustainable fisheries and aquaculture for food security and nutrition*. (14 May 2014).

<sup>421</sup> Gjerde, *supra* note 21, at 148.

<sup>422</sup> Schwarte, *supra* note 4.

<sup>423</sup> e.g. UN General Assembly, Resolution A/RES/59/25, *supra* note 78, at Art. 9(1)(a) jo. Art. 1(1)(b).

<sup>424</sup> Independent Panel, *supra* note 341, at 21.

<sup>425</sup> FAO, *MPAs, fisheries management and the ecosystem approach*, available at [https://www.fao.org/fishery/en/topic/16200#:~:text=There%20are%20many%20types%20of,or%20retained,%20\(d\)%20gear](https://www.fao.org/fishery/en/topic/16200#:~:text=There%20are%20many%20types%20of,or%20retained,%20(d)%20gear) (last accessed 30<sup>th</sup> May 2024).

<sup>426</sup> Independent Panel, *supra* note 341, at 22-23.

caught without compromising reproduction and future catch,<sup>427</sup> thereby encouraging reproduction by removing overfishing pressure—a passive restoration approach. Another example is the regulation of certain fishing practices, such as prohibiting bottom trawling. The latter helps to mitigate bycatch and the destruction of seabed biodiversity, including habitats crucial to various species. It, thereby, reduces impacts on the seafloor and facilitates recovery.<sup>428</sup> This measure falls within passive restoration, as it reduces or removes the threat of damaging the marine ecosystem by prohibiting harmful practices. Moreover, restricting fishery access during specific periods or the use of certain methods also limits bycatch and habitat damage,<sup>429</sup> minimizing the threat to marine ecosystems.

As observed, most CMM implemented by RFMOs fall within passive restoration. Active restoration efforts face more significant challenges in advancing within RFMOs, primarily due to their focus on fisheries management rather than ecosystem restoration.<sup>430</sup> Consequently, initiatives such as reintroducing specific species or habitat restoration, as Harrison advocates, are rarely prioritized in RFMO negotiations.<sup>431</sup> However, as argued by Abelson, in cases where stressors cannot be removed or reduced or where damages and degradation are too severe for natural rehabilitation, additional active restoration measures become necessary.<sup>432</sup> Hence, despite being far from the current targeted measures of RFMOs, active restoration actions could be advanced to RFMOs to rehabilitate certain species. Efforts towards such a move are already perceived. For instance, a guide drafted by an independent panel on Recommended Best Practices for Regional Fisheries Management Organizations underscores the importance of habitat protection and rehabilitation.<sup>433</sup> While RFMOs do not allocate sufficient importance to habitat management, the panel recommends establishing reference points dedicated to assessing habitat impacts, similar to those created for fish populations.<sup>434</sup> These points would ensure habitats' functionality within their respective ecosystems.<sup>435</sup>

Therefore, while active restoration measures are not currently under consideration by RFMOs, they have been envisioned by several experts and are documented on the Organization

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<sup>427</sup> e.g. FAO, Maximum Sustainable Yield (FAO 2014).

<sup>428</sup> Independent Panel, *supra* note 341, at 23-26.

<sup>429</sup> *Ibid.*

<sup>430</sup> Dong, *supra* note 300, at 6.

<sup>431</sup> Harrison, *supra* note 204, at 13.

<sup>432</sup> Abelson, *supra* note 22 at 162.

<sup>433</sup> Independent Panel, *supra* note 341, at 25.

<sup>434</sup> *Ibid.*, 26.

<sup>435</sup> *Ibid.*, 25.

for Economic Cooperation and Development website.<sup>436</sup> In the meantime, various measures implemented by RFMOs, such as the establishment of MPAs and the regulations applied therein, along with conservation and management measures applied to other areas, including limits on catch quotas, fishing techniques, and gear types, are pertinent for restoration purposes. These measures align with a passive restoration approach, aiming to mitigate threats and reduce impacts on marine ecosystems.

### 3.2.3. RFMOs management and enforcement

The implementation and compliance of the abovementioned measures are essential for their effectiveness, particularly regarding fishing vessels.<sup>437</sup> The pivotal role of flag states in enforcing RFMOs' regulations, as echoed by the UNFSA and FAO Code of Conduct, is a key aspect to highlight. RFMOs, lacking an established institution for enforcement, rely on Member States to assume this responsibility.<sup>438</sup> According to Article 94(1) UNCLOS and Article 18(1) UNFSA, ships on the high seas fall under the jurisdiction of their flag state, granting them the legal authority to enforce CMM enacted by the RFMOs of which they are members (Article 19 UNFSA). RFMOs impose recording and reporting fisheries duties on flag states, commonly utilizing methods such as inspections, observations, vessel monitoring systems, and updated vessel registers, as outlined in the UNFSA (Article 18(3)) and the FAO Code of Conduct (e.g. Article 7.7.3).<sup>439</sup> The flag states, therefore, assume primary responsibility to ensure compliance and enforce RFMOs' CMM on vessels flying their flag on the high seas. However, monitoring, controlling, and surveilling fishing vessels extends beyond flag states alone.<sup>440</sup> Port states, as the entry points for vessels, also play a significant role in enforcing RFMOs' CMM. They can ensure proper vessel monitoring by conducting port inspections (Article 23 UNFSA).<sup>441</sup> In cases where inconsistencies are discovered, port states may impose prohibitions on unloading and enact trade-restriction measures, thereby contributing to the overall enforcement efforts.

Despite these enforcement efforts, RFMOs face several threats to their CMM, including deterrence from non-member vessels and non-compliance from member states. The flag and port states have essential roles in addressing non-member vessel compliance, as UNFSA under

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<sup>436</sup> *Ibid.*

<sup>437</sup> *Ibid.*, 44.

<sup>438</sup> Johanne Fischer, *How transparent are RFMOs? Achievements and challenges*, 136 MARINE POLICY (2022), 2.

<sup>439</sup> Gjerde, *supra* note 21, at 169.

<sup>440</sup> Independent Panel, *supra* note 341, at 44.

<sup>441</sup> Gjerde, *supra* note 21, at 169.



Article 20(7) outlines. Flag states must report any non-member vessels within RFMOs' areas of competence, while port states can inspect vessels before unloading and impose sanctions if necessary.<sup>442</sup> Additionally, confronting non-compliance among RFMO member states is crucial for ensuring the effective enforcement of High Seas MPAs.<sup>443</sup> RFMOs are guided by compliance committees responsible for monitoring and reviewing members' adherence to CMMs and IUU fishing measures.<sup>444</sup> These committees oversee procedures against member infringements and ensure appropriate follow-up actions.<sup>445</sup>

All these enforcement measures are pertinent to the respect of RFMOs' CMMs, which are categorized as passive restoration measures. Enforcement, monitoring, and control are crucial in safeguarding marine ecosystems and promoting sustainable fisheries management. The relationship benefiting both marine ecosystems and the fisheries sector is enhanced by linking enforcement measures to ecological restoration. The reason is that it helps mitigate threats inhibiting ecosystem growth, health, and well-being. In ecological restoration, the positive effects of such measures necessitate long-term assessment, underscoring the necessity for robust enforcement mechanisms to ensure their success.<sup>446</sup> Thus, the established scheme of enforcement, primarily executed by flag and port states, plays a crucial role in controlling compliance with passive restoration measures aimed at facilitating natural recovery. Compliance with CMM is not just a legal obligation but a crucial step towards restoring and maintaining the health of marine ecosystems and ensuring the sustainability of fisheries.

While RFMOs lack direct enforcement capabilities, they aim to “establish appropriate cooperative mechanisms for effective monitoring, control, surveillance and enforcement”.<sup>447</sup> For instance, the NEAFC serves as an exemplary case, having implemented an enforcement scheme outlining requirements and procedures for the RFMO's member states.<sup>448</sup> Other RFMOs similarly adopt monitoring, control, surveillance, and enforcement schemes to ensure compliance with their regulations. Evaluating the applicability of NEAFC's enforcement scheme to ecological restoration would require examining how the enforcement of previously mentioned measures within the passive restoration approach aligns with the NEAFC

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<sup>442</sup> Independent Panel, *supra* note 341, at 62.

<sup>443</sup> Gjerde, *supra* note 21, at 148.

<sup>444</sup> FAO, Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017. (1 April 2020), 15.

<sup>445</sup> *Ibid.*, 65.

<sup>446</sup> OSPAR Commission, *supra* note 99.

<sup>447</sup> UN General Assembly, Resolution A/RES/59/25, *supra* note 78, at Art. 10.

<sup>448</sup> NEAFC, NEAFC Scheme of Control and Enforcement (5 April 2024).

framework. This entails scrutinizing how NEAFC's enforcement mechanisms address passive restoration measures to facilitate natural recovery.

Firstly, flag states can monitor and control MPAs and associated restrictions through surveillance and inspections at sea or via vessel monitoring systems (VMS).<sup>449</sup> VMS, mandatory on most fishing vessels, provides real-time tracking of vessel positions, enabling automatic monitoring of fishing activities within designated zones.<sup>450</sup> Therefore, the system automatically monitors the zones through which the fishing vessels navigate and fish. Secondly, fish quotas can be evaluated for compliance through catch documentation schemes (CDS) and inspections. CDS targets fishing vessels to monitor catch amounts and species, requiring authorities to record and report catches.<sup>451</sup> Inspections by NEAFC inspectors (inspectors of fishery control service of the Contracting Party)<sup>452</sup> or port state authorities verify CDS data,<sup>453</sup> with further measures taken in case of discrepancies.<sup>454</sup> Thirdly, flag states at sea and port states can control fishing techniques and gear upon vessel arrival.<sup>455</sup> Moreover, in addition to NEAFC state parties' enforcement measures, a scheme for cooperating with non-state parties is also in place, thereby enhancing support and compliance with NEAFC's CMM.<sup>456</sup>

### **3.3. Barriers and challenges to implement ecological restoration projects within the jurisdiction of RFMOs**

RFMOs, with their application of the ecosystem-based management principle to fisheries and their broad range of competencies, enacted measures, and enforcement mechanisms, hold immense potential for ecological restoration. However, several barriers currently hinder the inclusion of ecological restoration projects within their competencies.

First, the absence of a clear definition and legal obligations surrounding ecological restoration poses a significant hurdle. To address this, environmental legislation, particularly within treaties relevant to RFMOs, should adopt precise definitions and concepts related to

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<sup>449</sup> *Ibid*, respectively Chapter IV and Arts. 11, 1(o) and Annex VII(c)

<sup>450</sup> *Ibid*, Art. 11 and Annex VII(c); Hrnannar Már Ásgeirsson, et al., *Illegal, Unreported, and Unregulated Fishing: How the North-East Atlantic Fisheries Commission Addresses the IUU Fishing Challenge – Is It Working?*, 34 OCEAN YEARBOOK ONLINE (2020), 380.

<sup>451</sup> NEAFC, NEAFC Scheme of Control and Enforcement (5 April 2024), Art. 9-10 jo. Annex IV.

<sup>452</sup> *Ibid*, Arts. 15(1) and 18.

<sup>453</sup> *Ibid*, Art. 25 jo. Annex XVII.

<sup>454</sup> Ásgeirsson, *supra* note 450.

<sup>455</sup> NEAFC, NEAFC Scheme of Control and Enforcement (5 April 2024), respectively, Arts. 17 for surveillance, Art. 18 for inspection at sea and art. 25 jo. Annex XVII for port state inspection.

<sup>456</sup> *Ibid*, Chapter VII jo. Annex XXI.

restoration. Establishing a clear legal framework that obligates or at least promotes restoration efforts constitutes a crucial step forward. One feasible possibility would be the interpretation by the ICJ, through a dispute resolution, of a duty of ecological restoration within the UNCLOS obligation to protect and preserve the environment.<sup>457</sup> The option might appear far-edged for some. However, in light of the blandly new ITLOS Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law,<sup>458</sup> the evolutive applicability of UNCLOS to new issues, such as ecological restoration could be imagined. Such duty would diminish uncertainties regarding responsibilities and advance ecological restoration efforts. Moreover, to grant insight into new development, the NRL proposal, if enacted, could provide invaluable experiences and lessons to the international framework through its definition, targets and obligations framework for ecological restoration.

Secondly, ocean fisheries governance has traditionally prioritized the restoration of harvestable populations over broader biodiversity concerns,<sup>459</sup> a focus that often overlooks the criteria for ecological restoration. This narrow approach tends to concentrate on specific species rather than the holistic recovery of ecosystems. However, scholars emphasize the importance of integrating restoration ecology into marine conservation, natural resource management, and sustainable development efforts.<sup>460</sup> As highlighted in section 3.2.1, the conservation and management of fish stocks inherently involve safeguarding their habitats and, consequently, the marine ecosystem. Marine ecosystems not only support diverse fish species but also provide essential habitats that enhance fishing opportunities.<sup>461</sup> European statistics underscore the significant impact of the fishing sector on the ocean, revealing that 93% of European marine areas face anthropogenic pressures, including fishing activities.<sup>462</sup> Additionally, 40% of European fish stocks are overfished due to persistent exceedance of scientific catch quotas, while 35% of Europe's seabed suffers physical impacts from bottom trawling.<sup>463</sup> Therefore, scientific information regarding the necessity of considering the ecosystem in fisheries management should be regarded as an objective of the measures taken.

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<sup>457</sup> As argued by Harrison, *supra* note 204.

<sup>458</sup> *ITLOS Advisory Opinion on the Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law* (Request for Advisory Opinion submitted to the Tribunal), (ITLOS).

<sup>459</sup> Richardson, *supra* note 103, at 281.

<sup>460</sup> Abelson, *supra* note 22.

<sup>461</sup> Ecologic Institute, *supra* note 6.

<sup>462</sup> *Ibid.*

<sup>463</sup> *Ibid.*

RFMOs' current conservation and sustainable management objectives and measures must evolve to address the ecosystems' unique challenges.<sup>464</sup> As argued by Scovazzi, principles are not immutable, and “any principle, including the apparently sacrosanct principle of freedom of the sea, is to be understood in relation to the evolution of legal systems and in the light of the peculiar circumstances under which it should apply.”<sup>465</sup> Similar to objectives, principles must adapt to advancements in scientific knowledge and the pressing need to safeguard present and future generations, a value echoed in the Sustainable Development Goals.<sup>466</sup>

Thirdly, even if RFMOs were to undertake a mandate on restoration, extensive research on marine restoration is imperative due to the limited available knowledge. Scientific understanding of ecosystems remains scant, particularly in the high seas and deep waters, presenting significant challenges.<sup>467</sup> Yet, while uncertainties may impede progress, management practices have demonstrated the capacity to evolve and adapt with accumulated experience and knowledge.<sup>468</sup> Recent studies conducted in the Northeast Atlantic have illustrated the benefits of implementing area closures alongside efforts to reduce fishing activity. These measures resulted in the prevention of fishing gear damage, increased levels of associated fauna, enhanced habitat complexity, and improved survival rates of fish species.<sup>469</sup>

Also, establishing an MPA network can safeguard ecosystems by preserving vital biological interactions.<sup>470</sup> Such empirical knowledge is indispensable for advancing environmental objectives. In fisheries management, collecting and sharing data is a general principle under Article 5(j) of the UNFSA. Through the collaborative sharing of data concerning fishing activities,<sup>471</sup> an overview of current measures falling within the scope of restoration objectives could be delineated. This data-sharing initiative could facilitate the assessment of the positive impacts and efficacy of such measures. However, given that the positive effects of restoration measures necessitate long-term assessment,<sup>472</sup> sustained monitoring efforts over extended

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<sup>464</sup> Haas, *supra* note 369.

<sup>465</sup> Tullio Scovazzi, *Marine protected areas on the high seas: some legal and policy considerations*, 19 THE INTERNATIONAL JOURNAL OF MARINE AND COASTAL LAW (2004), 6.

<sup>466</sup> UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development* (21 October 2015).

<sup>467</sup> Schwarte, *supra* note 4, at 1 and 6.

<sup>468</sup> Gjerde, *supra* note 21, at 147.

<sup>469</sup> *Ibid.*

<sup>470</sup> *Ibid.*, 146.

<sup>471</sup> UN General Assembly, Resolution A/RES/59/25, *supra* note 78, at Annex I.

<sup>472</sup> OSPAR Commission, *supra* note 99.

periods would be imperative. Such ongoing monitoring would provide valuable insights into the effectiveness and longevity of restoration initiatives.<sup>473</sup>

Fourthly, there are significant hurdles within the framework of RFMO competencies. For instance, within RFMO decision-making processes, member states can declare an opt-out from a CMM, even if it has been decided via consensus.<sup>474</sup> This results in the partial implementation of CMMs, limiting their overall impact. Consequently, specific passive restoration measures may not be applied uniformly. However, some RFMOs have implemented measures to address this issue by establishing a more restrictive approach to the opt-out procedure. This may include requirements for a written explanation and justification, aligning with a predefined set of conditions, and proposing alternative measures with equivalent effects.<sup>475</sup>

Moreover, concerning RFMOs jurisdiction, existing frameworks often lack management competence for species and fisheries in the deep sea.<sup>476</sup> Deep-sea ecosystems, such as seamounts, corals, and sponges, serve as biodiversity reservoirs crucial for marine ecosystems and necessitate protection.<sup>477</sup> An FAO report highlighted that, regarding deep-sea stocks on the high seas, states must cooperate on transboundary resources under customary international law.<sup>478</sup> Therefore, since UNFSA promotes RFMOs to fulfil the cooperation obligations regarding straddling and highly migratory fish stocks, which are transboundary resources, RFMOs could claim competencies regarding transboundary resources. To effectively do so, cooperation between RFMOs and the International Seabed Authority (ISA) would be essential to avoid overlapping competencies and the fragmentation of measures.<sup>479</sup> Such collaboration would promote joint efforts to protect and restore the marine environment effectively.<sup>480</sup>

Fifthly, the decentralized enforcement mechanism of RFMOs' CMM relies on member states' compliance with surveillance, monitoring, and enforcement schemes. If member states fail to uphold their obligations, the passive restoration CMM may be compromised. Despite being reinforced by the UNFSA,<sup>481</sup> the enforcement mechanism of fisheries regulations often

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<sup>473</sup> Benjamin Richardson & Edward Lefroy, *Restoration dialogues: improving the governance of ecological restoration: Restoration dialogues*, 24 RESTORATION ECOLOGY (2016), 671.

<sup>474</sup> Harrison, *supra* note 329, at 184; Haas, *supra* note 17, at 4.

<sup>475</sup> e.g. SEAFO. Harrison, *supra* note 329, at 184.

<sup>476</sup> FAO, Current legal and institutional issues relating to the conservation and management of high-seas deep-sea fisheries. pt. 113-139 (2007), 113.

<sup>477</sup> Gjerde, *supra* note 21, at 152.

<sup>478</sup> FAO, Current legal and institutional issues relating to the conservation and management of high-seas deep-sea fisheries. pt. 113-139 (2007), 117.

<sup>479</sup> Schwarte, *supra* note 4, at 32.

<sup>480</sup> *Ibid.*

<sup>481</sup> Alf Håkon Hoel, *The Evolving Management of Fisheries in the Arctic*, in RESEARCH HANDBOOK ON POLAR LAW (Karen N. Scott & David L. VanderZwaag eds., 2020), 205.

faces challenges due to poor compliance. For instance, over-exploitation persists due to inadequate enforcement of catch limits, reflecting poor compliance with RFMO regulations.<sup>482</sup> However, schemes are in place to ensure parties' compliance with the RFMOs. As highlighted in section 3.2.3, the deterrence from non-member vessels is addressed by the flag state, which must report any non-member vessels within RFMOs' areas of competence. Port states can inspect vessels before unloading and impose sanctions if necessary.<sup>483</sup>

Additionally, non-compliance among RFMO member states is reviewed by competence institutions – compliance committees – responsible for monitoring members' adherence to CMM measures.<sup>484</sup> These committees oversee procedures against member infringements and ensure appropriate follow-up actions.<sup>485</sup> Last but not least, the performance review of RFMOs, mandated by the UN General Assembly to the states parties of the UNFSA, is used to assess the implementation of the Agreement by different RFMOs.<sup>486</sup> A guide for such review has been developed by WWF, Greenpeace International and Deep Sea Conservation Coalition, along with some recommendations.<sup>487</sup> Thus, despite gaps in the state parties' compliance with the RFMOs, processes to assess compliance and act upon failure exist, while assessment of RFMOs' performance can enhance the quality of their enforcement schemes.

Therefore, the absence of a definition and legal obligations regarding ecological restoration, the prioritization of restoration of harvestable populations over ecosystem restoration, the limited scientific knowledge on high sea ecosystems, as well as the hurdles within RFMOs competencies and RFMOs decentralized enforcement mechanism represent barriers to ecological restoration within fisheries management. Nevertheless, as argued, those barriers can be transcended through the different propositions laid down in this section. Moreover, what remains essential throughout the process of RFMOs' mandate evolution to integrate ecological restoration is cooperation as an overarching principle, as highlighted in the next section.

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<sup>482</sup> E. Penas Lado, *The objectives of the CFP, in QUO VADIS COMMON FISHERIES POLICY?* (E. Penas Lado ed. 2019), 36.

<sup>483</sup> Independent Panel, *supra* note 341, at 62.

<sup>484</sup> FAO, *Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017*. (1 April 2020), 15.

<sup>485</sup> Independent Panel, *supra* note 341, at 65.

<sup>486</sup> As requested for example by UN General Assembly, Resolution adopted by the General Assembly on 11 December 2018, 73/125. 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 (15 January 2019), para. 60.

<sup>487</sup> WWF, Greenpeace International, Deep Sea Conservation Coalition, *Performance reviews of regional fisheries management organizations and arrangements*. (28 March 2019).

### 3.4. Collaboration and opportunities to support marine ecosystem restoration efforts through RFMOs

The absence of international frameworks for environmental protection in high seas areas is often cited as a significant barrier to adequate maritime zone protection.<sup>488</sup> However, RFMOs possess the necessary structure to ensure ocean protection, notably through various passive restoration measures, as laid down in previous sections. Additionally, a strength of RFMOs, which has yet to be discussed, lies in their capacity for collaboration and cooperation, both amongst themselves and with other institutions within ocean fisheries governance.<sup>489</sup>

As argued by FIELD, one method to strengthen and ensure the enforcement of area-based measures, such as MPAs under different treaty regimes, is to establish linkages between these treaties to prevent discrepancies.<sup>490</sup> Indeed, protecting biodiversity on the high seas demands coordinated efforts among all management bodies.<sup>491</sup> The advancement of collaboration is also highlighted by the EAF, whose implementation, crossing legally established maritime zones, requires cooperation and coordination.<sup>492</sup>

Since the 2000s, a notable trend has emerged, linking various governance bodies through Memoranda of Understanding (MoUs). MoU aims to facilitate collaboration, enhance information sharing, and increase the effectiveness of implemented area-based management measures common to both parties.<sup>493</sup> This collaborative approach, helps address the interconnected nature of marine ecosystems, facilitating the protection of shared resources and promoting sustainable practices on a larger scale.<sup>494</sup> Furthermore, it enhances the effectiveness of management efforts by leveraging multiple stakeholders' collective expertise and resources,<sup>495</sup> ultimately leading to better outcomes for ecosystem health and resilience. Moreover, RFMOs, through collaboration, are influencing each other's conduct of functions. This influence, advocated to adopt best practices from one another,<sup>496</sup> extends the reach of approaches like ecosystem-based management to several RFMOs.

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<sup>488</sup> Schwarte, *supra* note 4, at 31.

<sup>489</sup> Haas, *supra* note 369, at 135.

<sup>490</sup> Schwarte, *supra* note 4, at 31.

<sup>491</sup> Bowman, *supra* note 160, at 160.

<sup>492</sup> Dong, *supra* note 300, at 7.

<sup>493</sup> NEAFC & OSPAR Commission, Memorandum of Understanding between the North East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission (North East Atlantic Fisheries Commission (NEAFC) and the Commission established by the 1992 Convention for the protection of the marine environment of the North-East Atlantic (OSPAR Commission) April 2008), 2.

<sup>494</sup> Haas, *supra* note 369, at 139-140.

<sup>495</sup> *Ibid.*

<sup>496</sup> Haas, *supra* note 17, at 5.

Many RFMOs have established formal MoUs among themselves to harmonize reporting requirements and enhance coordination.<sup>497</sup> A notable example is the MoU between the South Pacific Regional Fisheries Management Organization (SPRFMO) and WCPFC.<sup>498</sup> The latter aims to establish “consultation, cooperation and collaboration”<sup>499</sup> to further their objectives.<sup>500</sup>

Moreover, some RFMOs cooperate with regional seas programmes and commissions, such as the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Commission. For example, the NEAFC and OSPAR Commission established a MoU to protect the marine environment in the North-East Atlantic in 2008.<sup>501</sup> This MoU was succeeded by the 2014 “Collective Arrangement between competent international organizations on cooperation and coordination regarding selected areas in areas beyond national jurisdiction in the North-East Atlantic”.<sup>502</sup> This arrangement enhanced cooperation by aiming to integrate other organizations with mandates in the North-East Atlantic, such as the International Commission for the Conservation of Atlantic Tunas (ICCAT),<sup>503</sup> the North Atlantic Salmon Conservation Organization (NASCO),<sup>504</sup> the IMO, and the ISA. It represents the evolution of the initial 2008 collaboration into a comprehensive multilateral forum for intersectoral work and dialogue.<sup>505</sup>

Such Cooperation Agreements play a leading role in driving the evolution of conservation practices within RFMOs,<sup>506</sup> notably concerning restoration measures. Through collaborative efforts facilitated by MoUs or Cooperative Agreements, RFMOs can learn from other regional governance bodies’ experiences and best practices, enhancing their ability to implement restoration measures effectively and contribute to marine conservation efforts. For instance, restoration practices can evolve from actions adopted under the auspices of regional seas treaty bodies such as OSPAR, serving as a notable example.

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<sup>497</sup> Haas, *supra* note 369, at 139.

<sup>498</sup> SPRFMO & WCPFC, Memorandum of Understanding between the South Pacific Regional Fisheries Management Organization (SPRFMO) and the Western and Central Pacific Fisheries Commission (WCPFC) (6 August 2020).

<sup>499</sup> *Ibid.*, section 2.

<sup>500</sup> *Ibid.*, section 1.

<sup>501</sup> FAO, Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017. (1 April 2020), 18.

<sup>502</sup> OSPAR Commission & NEAFC, Collective arrangement between competent international organisations on cooperation and coordination regarding selected areas in areas beyond national jurisdiction in the North-East Atlantic (November 2014).

<sup>503</sup> See for more information: International Convention for the Conservation of Atlantic Tunas (14 May 1966); ICCAT, International Commission for the Conservation of Atlantic Tunas: Basic Texts (2019).

<sup>504</sup> See Convention for the Conservation of Salmon in the North Atlantic Ocean (2 March 1982).

<sup>505</sup> OSPAR Commission, *Collective Arrangement available at <https://www.ospar.org/about/international-cooperation/collective-arrangement>* (last accessed 30<sup>th</sup> May 2024).

<sup>506</sup> Haas, *supra* note 369, at 142.



The OSPAR Commission mandates parties to protect marine areas and undertake restoration efforts where damage has occurred.<sup>507</sup> Bound by the treaty, OSPAR member states are tasked with safeguarding the North-East Atlantic area, including its high seas and seabed zones, from pollution.<sup>508</sup> The OSPAR Commission, established under the OSPAR convention, is responsible for enacting measures to protect or restore specific areas or species needing conservation.<sup>509</sup> Guidelines adopted by the OSPAR Commission for the identification and designation of MPAs in the North-East Atlantic emphasize the importance of conducting objective and transparent assessments of areas and management measures before MPA designation.<sup>510</sup> This stepwise approach provides states with guidance for establishing MPAs with explicit recovery and restoration goals.<sup>511</sup> In addition to explicitly mentioning restoration goals in the guidelines, OSPAR highlights the importance of considering the "potential for restoration" when identifying MPAs.<sup>512</sup> This criterion emphasizes the need for areas with a "high potential to return to a more natural state under appropriate management".<sup>513</sup> Therefore, OSPAR not only addresses restoration in a broader context beyond the restoration of harvestable species but also links restoration efforts to MPAs, which are considered among the "most viable solutions for the successful protection of the marine environment".<sup>514</sup> Pertaining to passive restoration, MPAs can also allow damaged ecosystems to recover and thrive.<sup>515</sup>

Therefore, the MoU between the OSPAR Commission – establishing restoration aims within its MPAs – and RFMOs could influence the latter regarding such matters. RFMOs have demonstrated their responsiveness to emerging environmental challenges by updating conventions, adopting new measures, or revising existing ones.<sup>516</sup> OSPAR's expertise-sharing through MoU could encourage RFMOs to adapt their objectives or mandates to incorporate restoration aims within their MPA measures. This approach could foster greater consideration of restoration objectives within fisheries management.

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<sup>507</sup> Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) (22 September 1992), [Hereinafter, OSPAR Convention], Annex V.

<sup>508</sup> Schwarte, *supra* note 4, at 19.

<sup>509</sup> OSPAR Convention, *supra* note 507, at Article 2(1)(a) jo. Annex V.

<sup>510</sup> OSPAR, Guidelines for the Identification and Selection of Marine Protected Areas in the OSPAR Maritime Area (2003), Section 3 and Appendix I.

<sup>511</sup> *Ibid.*

<sup>512</sup> OSPAR, Guidelines for the Identification and Selection of Marine Protected Areas in the OSPAR Maritime Area (2003), Appendix II.

<sup>513</sup> *Ibid.*, Appendix II.

<sup>514</sup> Schwarte, *supra* note 4, at 3.

<sup>515</sup> *Ibid.*, 1.

<sup>516</sup> FAO, The state of world fisheries and aquaculture 2018—Meeting the sustainable development goals (2018), 103; Haas, *supra* note 373.

Furthermore, OSPAR explicitly refers to competent fisheries management authorities for the protection, conservation, and restoration measures related to fisheries management.<sup>517</sup> This acknowledgement could inspire RFMOs to take leadership roles. This has been highlighted in Annex V of the OSPAR Convention, protecting and conserving ecosystems and biological diversity in the maritime area and mandating contracting parties to restore degraded marine areas.<sup>518</sup> Indeed, Annex V does not encompass programs or measures related to fisheries management and delegate the matter to fisheries organizations competent in the relevant areas or species types in cases where OSPAR identifies the need for action.<sup>519</sup> Moreover, underscoring the importance of cooperation in biodiversity protection, OSPAR emphasizes its readiness to offer complementarity and support to competent fisheries management authorities.<sup>520</sup> This collaborative approach between OSPAR and RFMOs could enhance the effectiveness of conservation and restoration efforts in marine environments.

As highlighted by Haas et al., cooperation of RFMOs should extend beyond regional sea treaty bodies and target other actors managing activities on the ocean.<sup>521</sup> Additionally, concerning area-based management tools, such as MPAs, the BBNJ Agreement also advances cooperation between different bodies.<sup>522</sup> Regarding such a proposition, various regional agreements can provide valuable inspiration. For instance, in the Baltic Sea region, the Helsinki Commission recognized the importance of MPAs in providing “specific protection to those species, habitats, biotopes and biotope complexes included in the HELCOM Red Lists”.<sup>523</sup> Those elements are critical to the process of selecting the MPA’s site and the implementation of specific conservation and restoration measures to address ecosystem degradation.<sup>524</sup> Similarly, in the Caribbean region, the Protocol concerning Specially Protected Areas and Wildlife uses MPAs to conserve and restore key ecosystems.<sup>525</sup> In the provisions on MPAs, the consideration of ‘habitats and their associated ecosystems critical to [...] the recovery of endangered, threatened or endemic species’ and ‘areas whose ecological and biological processes are essential to the functioning of the Wider Caribbean ecosystems’ is prescribed.<sup>526</sup> In these examples, the restoration of degraded ecosystems is explicitly mentioned, and the

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<sup>517</sup> OSPAR Convention, *supra* note 507, at Annex V, Art. 4.

<sup>518</sup> *Ibid.*, Annex V, Art. 2(1)(a).

<sup>519</sup> *Ibid.*, Annex V, Art. 4; Schwarte, *supra* note 4, at 19.

<sup>520</sup> Schwarte, *supra* note 4, at 20.

<sup>521</sup> Haas, *supra* note 373, at 142.

<sup>522</sup> United Nations, BBNJ Agreement, *supra* note 33, at Arts. 6 and 14(b).

<sup>523</sup> HELCOM, Ecological coherence assessment of Marine Protected Area network in the Baltic Sea (2016), 49.

<sup>524</sup> *Ibid.*

<sup>525</sup> Protocol concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (18 January 1990), Articles 4-9.

<sup>526</sup> *Ibid.*

different elements considered highlight an ecosystem approach to restoration. Moreover, these obligations underscore the expectation that states establish MPAs explicitly aimed at restoring degraded ecosystems. Given that MPAs require a significant degree of cooperation, it is logical for states to fulfil this objective through established cooperation bodies, such as RFMOs. This widespread practice further supports the idea of RFMOs playing a central role in facilitating collaborative efforts for ecosystem restoration on a global scale.

## 4. Conclusion

The United Nations has designated 2021–2030 as the ‘Decade on Ecosystem Restoration’ to address the critical need for rehabilitating degraded ecosystems and advancing the Sustainable Development Goals (SDGs). Among these goals, SDG 14 explicitly targets the restoration of marine ecosystems to ensure the health and productivity of oceans. This paper explored the interface between ecological restoration and ocean fisheries governance within the realm of RFMOs. In light of global challenges marine ecosystems face, such as overfishing, habitat destruction, pollution, and climate change, a severe threat to marine ecosystems and biodiversity is recognized. Within the jurisdiction of RFMOs, there is potential to play a pivotal role in addressing these challenges and promoting the sustainable use of marine resources.

Ecological restoration has been explored through its definitions, rationales, and categorizations as passive or active, as well as international and European legal status. As observed, no definitions have been legally recognized on the international stage – with a notable change on the European side. Nevertheless, SER has conceptualized ecological restoration as a process towards the recovery of degraded marine ecosystems, framing the analysis of the legal provisions applicable to ecological restoration. From an international legal viewpoint, passive restoration measures are interpreted from some instruments mentioning restoration and advocating for marine protected areas. However, active restoration is often left aside due to, *inter alia*, the instruments not being primarily aimed at restoration.

Moreover, whereas marine ecosystems are considered within the scope of applicability of the different instruments relevant to ecological restoration, the explicit link between restoration and the fisheries sector is often lacking internationally. This, however, is different from the European perspective as the proposal on EU Nature Restoration Law proposes both passive and active measures and the critical relationship between marine restoration and fisheries is underlined in the preamble of the proposal, in its articles and in the EU Biodiversity Strategy for 2030 which explicitly highlights the relevance of fisheries management.

Nevertheless, this proposal has yet to enter into force, and doubts regarding its enactment persist. Without this instrument, ecological restoration on marine ecosystems can be qualified as suffering from governance deficiencies in international and European law.

RFMOs, with their extensive jurisdiction covering nearly two-thirds of the global ocean,<sup>527</sup> embody a diverse array of attributes. These range from embodying the EAF principle, which is crucial for ecological restoration, to implementing measures encompassing passive restoration strategies and enforcement mechanisms. This spectrum of functions positions RFMOs as compelling subjects for scrutinizing ecological restoration governance gaps. Leveraging these well-established institutional frameworks is argued to be helpful in this paper for addressing ecological restoration across diverse marine ecosystems. Operating within complex political and legal landscapes, RFMOs must navigate member states' diverse interests and priorities. This requires striking a delicate balance between conservation objectives and economic considerations, all while ensuring compliance with regulations. Therefore, robust governance frameworks, transparency mechanisms, and accountability systems are indispensable. Whereas this governance framework and required elements need to be the subject of another research, this paper concluded on the central component of the effectiveness of ecological restoration within RFMOs: the recognition of their fundamental principle, the duty to cooperate. RFMOs serve as instruments through which states fulfil their obligation to collaborate in the conservation and management of marine resources. This cooperative framework is essential for effective fisheries management, with RFMOs possessing the necessary structure to protect marine ecosystems. Fostering collaboration between RFMOs and other relevant institutions, exemplified by MoUs or Cooperative Arrangements and driven by Article 6 of the BBNJ Agreement, holds significant potential for enhancing their role in ecological restoration. By leveraging their capacity for cooperation, RFMOs can augment their existing functions and contribute substantially to preserving and restoring marine biodiversity.

As highlighted, there is a pressing need for further research into the governance frameworks of RFMOs to ensure the success of ecological restoration efforts. Additionally, exploring the potential collaboration between RFMOs and regional sea bodies, which play a crucial role in marine ecosystem restoration, warrants deeper investigation regarding the content of such cooperation. Consequently, there remains a spectrum of critical elements at the intersection of ecological restoration and ocean fisheries governance, particularly within RFMOs, that demand further study and exploration.

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<sup>527</sup> Dong, *supra* note 300, at 1.

## List of References

### Official sources

Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (Port State Measures Agreement) (22 November 2009).

CBD, Decision VII/5, Marine and coastal biological diversity (13 April 2004).

CBD, Decision X/2: The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (29 October 2010).

CBD, Decision X/29, Marine and coastal biodiversity (29 October 2010).

CBD, Decision X/31: Protected areas (29 October 2010).

CBD, Decision X/9, The multi-year programme of work for the Conference of the Parties for the period 2011–2020 and periodicity of meetings (29 October 2010).

CBD, Decision XI/16, Ecosystem restoration (5 December 2012).

CBD, Ecosystem Services, available at <https://www.cbd.int/undb/media/factsheets/undb-factsheet-ecoserv-en.pdf>.

CBD, Global Biodiversity Outlook 3 (10 May 2010).

CBD, Global Biodiversity Outlook 5 (18 August 2020).

CBD, Jakarta Mandate on Marine and Coastal Biodiversity, including the terms of reference of the Meeting of Experts on marine and coastal biodiversity (30 January 1997).

CBD, Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries (7-9 December 2011).

CBD, Kunming-Montreal Global Biodiversity Framework (19 December 2022).

CBD, Most Used Definitions/Descriptions of Key Terms Related to Ecosystem Restoration (6 September 2012).

CBD, Quick guide to the Aichi Biodiversity Targets Ecosystems restored and resilience enhanced (2 February 2013).

CBD, The Post-2020 Biodiversity Framework: Targets, Indicators, and Measurability Implications at the Global and National Level (13 November 2019).

Convention for the Conservation of Salmon in the North Atlantic Ocean (2 March 1982).

Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) (22 September 1992).

Convention on the Conservation of Migratory Species, Memorandum of Understanding concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa (1 July 1999).

EU, Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (21 May 1992).

EU, Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (23 October 2000).

EU, Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (17 June 2008).

EU, Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (30 November 2009).

EU, Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No

1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC (11 December 2013).

European Commission, EU biodiversity strategy for 2030 – Bringing nature back into our lives (2021).

European Commission, European Climate, Infrastructure and Environment Executive Agency, The implementation of ecosystem-based approaches applied to fisheries management under the CFP (June 2022).

European Commission, Impact Assessment Report Annex VI-b Accompanying the proposal for a Regulation of the European Parliament and of the Council on nature restoration (22 June 2022).

European Commission, Proposal for a Regulation of the European Parliament and of the council on nature restoration (22 June 2022).

FAO, Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (Port State Measures Agreement) (22 November 2009).

FAO, Code of Conduct for Responsible Fisheries (CCRF) (31 October 1995).

FAO, Current legal and institutional issues relating to the conservation and management of high-seas deep-sea fisheries (2007).

FAO, Fisheries management: The ecosystem approach to fisheries (2003).

FAO, In Brief to The State of World Fisheries and Aquaculture 2022 (2022).

FAO, International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA) (2 March 2001).

FAO, Maximum Sustainable Yield (FAO 2014), *available at* <https://www.fao.org/faoterm/viewentry/en/?entryId=98610>.

FAO, Position Paper on "Ecosystem Restoration" of Production Ecosystems, in the Context of the UN Decade of Ecosystem Restoration 2021-2030 (5 February 2021).

FAO, Regional fisheries management organizations and advisory bodies: Activities and developments, 2000–2017 (1 April 2020).

FAO, The state of world fisheries and aquaculture 2018—Meeting the sustainable development goals (2018).

HELCOM, Ecological coherence assessment of the Marine Protected Area network in the Baltic Sea (2016).

ICCAT, International Commission for the Conservation of Atlantic Tunas: Basic Texts (2019).

International Convention for the Conservation of Atlantic Tunas (14 May 1966).

NEAFC, NEAFC Scheme of Control and Enforcement (5 April 2024).

OSPAR, Guidelines for the Identification and Selection of Marine Protected Areas in the OSPAR Maritime Area (2003).

OSPAR Commission & NEAFC, Memorandum of Understanding between the North East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission (North East Atlantic Fisheries Commission (NEAFC) and the Commission established by the 1992 Convention for the protection of the marine environment of the North-East Atlantic (OSPAR Commission) April 2008).

OSPAR Commission & NEAFC, Collective arrangement between competent international organisations on cooperation and coordination regarding selected areas in areas beyond national jurisdiction in the North-East Atlantic (November 2014).

Protocol concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (18 January 1990).



South East Atlantic Fisheries Organisation (SEAFO), Conservation Measure 30/15 on Bottom Fishing Activities and Vulnerable Marine Ecosystems in the SEAFO Convention Area (03 December 2015).

South Pacific Regional Fisheries Management Organisation (SPRFMO), Conservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area (March 2021).

SPRFMO & WCPFC, Memorandum of Understanding between the South Pacific Regional Fisheries Management Organization (SPRFMO) and the Western and Central Pacific Fisheries Commission (WCPFC) (6 August 2020).

UNEP/FAO, Resolution A/RES/73/2841, The UN Decade on Ecosystem Restoration 2021-2030 (1 March 2019).

UN General Assembly, Resolution adopted by the General Assembly on 17 November 2004 on 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 (17 January 2004).

UN General Assembly, Report of the Review Conference on the 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 Fish Stocks and Highly Migratory Fish Stocks of Straddling (5 July 2006).

UN General Assembly, Resolution adopted by the General Assembly on 11 December 2018, 73/125. 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 (15 January 2019).

UN General Assembly, Report of the resumed Review Conference on the 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 (20 June 2023).

UN General Assembly, Transforming our world: the 2030 Agenda for Sustainable Development (21 October 2015).

United Nations, 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 (8 September 1995).

United Nations, Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (19 June 2023).

United Nations, Convention on biological diversity (June 1992).

United Nations, Convention on the Law of the Sea (10 December 1982).

United Nations, Convention on the conservation of migratory species of wild animals (23 June 1979).

United Nations, Convention on wetlands of international importance especially as waterfowl habitat (2 February 1971).

United Nations, International Convention on Civil Liability for Oil Pollution Damage (27 November 1992).

United Nations, Vienna Convention on the Law of Treaties (23 May 1969).

United Nations, Vienna Convention on the Law of Treaties between States and International Organizations or between International Organizations (12 March 1986).

## **Case law**

Case C-6/04 Commission v UK, I-9017, (ECR).

Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua).  
Compensation owed by the Republic of Nicaragua to the Republic of Costa Rica, (ICJ).

Request for an Advisory Opinion submitted by the Sub-Regional Fisheries Commission (SRFC), Advisory Opinion, (ITLOS).

Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law (Request for Advisory Opinion submitted to the Tribunal), (ITLOS).

Southern Bluefin Tuna, New Zealand v Japan, Provisional Measures, (ITLOS).

The South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China), (Permanent Court of Arbitration (PCA)).

## **Literature**

### Reports

Barbara Lausche, Sustainable investing in protected areas and biodiversity: Key enabling conditions in policy, law and institutions §90 (IUCN 2023).

Coral Triangle Initiative, Understanding the Oceans Governance (Widi A. Pratikto ed., 2016).

Daniel Kachelriess, *The High Seas Biodiversity Treaty: An Introduction to the Agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*, (IUCN 2023)

Ecologic Institute, *Marine and coastal ecosystem restoration*. (August 2023).

Ecologic Institute, *Why is nature restoration critical for marine areas?* (2023).

Fourth National Climate Assessment, *Ecosystems, ecosystem services and biodiversity*. (2018).

Gerard Neuman, *International Organizations and Human Rights—the Need for Substance*. (2019).

ILA Study Group on Due Diligence in International Law, *Second Report*. (July 2016).

Independent Panel, *Recommended Best Practices for Regional Fisheries Management Organizations: Report of an independent panel to develop a model for improved governance by Regional Fisheries Management Organizations*. (2007).

Millennium Ecosystem Assessment, *Ecosystem and Human Well-being: Biodiversity Synthesis*. (March 2005).

Paulina Ramírez-Monsalve, et al., *Marine Ecosystem Restoration in Changing European Seas MERCES - D6.3: Review on restoration, conservation and recovery of marine ecosystems in the four regional EU seas*.

Richard Barnes, *Legal Study on the Relationship between Certain Aspects of the Common Fisheries Policy Basic Regulation and Key Provisions of the Nature Restoration Regulation: Including an Evaluation of Existing Options on Improving the Joint Recommendation Procedure and Proposal of Additional Options. An Opinion Prepared for ClientEarth*. (4 May 2023).

The High Level Panel of Experts on Food Security and Nutrition, Sustainable fisheries and aquaculture for food security and nutrition. (14 May 2014).

WWF, Greenpeace International, Deep Sea Conservation Coalition, Performance reviews of regional fisheries management organizations and arrangements. (28 March 2019).

### Journal Articles

An Cliquet, et al., *Upscaling ecological restoration: toward a new legal principle and protocol on ecological restoration in international law*, 30 RESTORATION ECOLOGY (2022).

Anastasia Telesetsky, *Ecoscapes: The Future of Place-Based Ecological Restoration Laws*, 14 VERMONT JOURNAL OF ENVIRONMENTAL LAW (2013).

Arie Trouwborst & Harm M Dotinga, *Comparing European Instruments for Marine Nature Conservation: The OSPAR Convention, the Bern Convention, the Birds and Habitats Directives, and the Added Value of the Marine Strategy Framework Direct*, 20 EUROPEAN ENERGY AND ENVIRONMENTAL LAW REVIEW (2011).

Arne Langlet & Alice B. M. Vadrot, *Not 'undermining' who? Unpacking the emerging BBNJ regime complex*, 147 MARINE POLICY (2023).

Audrey L Mayer & Max Rietkerk, *The dynamic regime concept for ecosystem management and restoration*, 54 BIOSCIENCE (2004).

Avigdor Abelson, et al., *Upgrading Marine Ecosystem Restoration Using Ecological-Social Concepts*, 66 BIOSCIENCE (2015).

Benjamin Richardson & Edward Lefroy, *Restoration dialogues: improving the governance of ecological restoration: Restoration dialogues*, 24 RESTORATION ECOLOGY (2016).

Benjamin Richardson, *The Emerging Age of Ecological Restoration Law*, 25 REVIEW OF EUROPEAN, COMPARATIVE & INTERNATIONAL ENVIRONMENTAL LAW (2016).

Bianca Haas, et al., *Factors influencing the performance of regional fisheries management organizations*, 113 MARINE POLICY (2020).

Bianca Haas, et al., *Explicit targets and cooperation: regional fisheries management organizations and the sustainable development goals*, 21 INTERNATIONAL ENVIRONMENTAL AGREEMENTS: POLITICS, LAW AND ECONOMICS (2021).

Bradford E. Brown, *Regional fishery management organizations and large marine ecosystems*, 17 ENVIRONMENTAL DEVELOPMENT (2016).

Brian Pentz, et al., *Can regional fisheries management organizations (RFMOs) manage resources effectively during climate change?*, 92 MARINE POLICY (2018).

Brian Silliman, et al., *Marine ecosystem restoration (MER) -a call for a more inclusive paradigm*, 10 FRONTIERS IN MARINE SCIENCE (2023).

Catherine Brölmann, *The Legal Nature of International Organisations and the Law of Treaties* 4AUSTRIAN REVIEW OF INTERNATIONAL AND EUROPEAN LAW ONLINE (2000).

Céline Jacob, et al., *Marine ecosystem restoration and biodiversity offset*, 120 ECOLOGICAL ENGINEERING (2017).

Cindy Dover, et al., *Ecological restoration in the deep sea: Desiderata*, 44 MARINE POLICY (2014).

Dan Laffoley, et al., *Eight urgent, fundamental and simultaneous steps needed to restore ocean health, and the consequences for humanity and the planet of inaction or delay*, 30 AQUATIC CONSERVATION: MARINE AND FRESHWATER ECOSYSTEMS (2020).

David M. Martin, *Ecological restoration should be redefined for the twenty-first century*, 25 RESTORATION ECOLOGY (2017).

Dolly Jørgensen, *Ecological restoration in the Convention on Biological Diversity targets*, 22 BIODIVERSITY AND CONSERVATION (2013).

- Ellen Pikitch, et al., *Ecosystem-Based Fishery Management*, 305 SCIENCE (2004).
- F. Stuart Chapin Iii, et al., *Consequences of changing biodiversity*, 405 NATURE (2000).
- Finn Seyersted, *Objective International Personality of Intergovernmental Organizations-Do Their Capacities Really Depend upon the Conventions Establishing Them*, 34 NORDISK TIDSSKRIFT INT'L RET (1964).
- Gregory Rose, *Marine Biodiversity Protection through Fisheries Management*, 8 REVIEW OF EUROPEAN, COMPARATIVE & INTERNATIONAL ENVIRONMENTAL LAW (1999).
- Hanling Wang, *Ecosystem Management and Its Application to Large Marine Ecosystems: Science, Law, and Politics*, 35 OCEAN DEVELOPMENT AND INTERNATIONAL LAW - OCEAN DEV INT LAW (2004).
- Heather Leslie, et al., *Learning from Ecosystem-Based Management in Practice*, 43 COASTAL MANAGEMENT (2015).
- Hrannar Már Ásgeirsson, et al., *Illegal, Unreported, and Unregulated Fishing: How the North-East Atlantic Fisheries Commission Addresses the IUU Fishing Challenge – Is It Working?*, 34 OCEAN YEARBOOK ONLINE (2020).
- Ishtar Kenny, et al., *Aligning social and ecological goals for successful marine restoration*, 288 BIOLOGICAL CONSERVATION (2023).
- J. R. Beddington, et al., *Back-to-the-future: a fresh policy initiative for fisheries and a restoration ecology for ocean ecosystems*, 360 PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B: BIOLOGICAL SCIENCES (2005).
- James A. Harris, et al., *Ecological Restoration and Global Climate Change*, 14 RESTORATION ECOLOGY (2006).
- James Aronson, *What can and should be legalized in ecological restoration?*, 34 REVISTA ÁRVORE (2010).

James Harrison, *The Protection of Species, Ecosystems and Biodiversity Under UNCLOS in Light of the South China Sea Arbitration: An Emergent Duty of Marine Ecosystem Restoration?*, EDINBURGH SCHOOL OF LAW RESEARCH PAPER (2019).

Johanne Fischer, *How transparent are RFMOs? Achievements and challenges*, 136 MARINE POLICY (2022).

Jordan Daci, *Legal Principles, Legal Values and Legal Norms: are they the same or different?*, MMX ACADEMICUS INTERNATIONAL SCIENTIFIC JOURNAL (2010).

Joseph Raz, *Legal principles and the limits of law*, 81 YALE. LJ (1971).

Kees Bastmeijer, *Ecological restoration in international biodiversity law: a promising strategy to address our failure to prevent?*, in RESEARCH HANDBOOK ON BIODIVERSITY AND LAW (Peter Davies Michael Bowman, Edward Goodwin ed. 2016).

Kristina Daugirdas, *How and why international law binds international organizations*, 57 HARV. INT'L LJ (2016).

Kristina M Gjerde, *High seas marine protected areas and deep-sea fishing*, 838 FAO FISHERIES REPORTS (2007).

Lan Ngoc Nguyen, *Expanding the Environmental Regulatory Scope of UNCLOS Through the Rule of Reference: Potentials and Limits*, 52 OCEAN DEVELOPMENT & INTERNATIONAL LAW (2022).

Latarjet R & Gray LH, *Definition of the Terms 'Protection' and 'Restoration'*, 41 ACTA RADIOLOGICA (1954).

Limin Dong & Peiqing Guo, *The Practice of Ecosystem Approach to Fisheries on the High Seas: Challenges and Suggestions*, 14 SUSTAINABILITY (2022).

Lori Ridgeway & JC Rice, *International organizations and fisheries governance*, HANDBOOK OF MARINE FISHERIES CONSERVATION AND MANAGEMENT (2010).



Matías Guerrero-Gatica, et al., *Shifting Gears for the Use of the Shifting Baseline Syndrome in Ecological Restoration*, 11 SUSTAINABILITY (2019).

Matthew D. Taylor, et al., *Fisheries enhancement and restoration in a changing world*, 186 FISHERIES RESEARCH (2017).

Matthias Schröter, et al., *Ecosystem Services as a Contested Concept: a Synthesis of Critique and Counter-Arguments*, 7 CONSERVATION LETTERS (2014).

Md Monirul Islam, et al., *Status and potential of ecosystem approach to fisheries management (EAFM) in Bangladesh*, 219 OCEAN & COASTAL MANAGEMENT (2022).

Megan I. Saunders, et al., *Bright Spots in Coastal Marine Ecosystem Restoration*, 30 CURRENT BIOLOGY (2020).

Na Wang, et al., *Mechanism of action of marine ecological restoration on ecological, economic, and social benefits—An empirical analysis based on a structural equation model*, 248 OCEAN & COASTAL MANAGEMENT (2024).

Nele Matz-Lück, *Chaos or coherence? - Implementing and enforcing the conservation of migratory species by different legal instruments*, 65 ZEITSCHRIFT FÜR AUSLÄNDISCHES ÖFFENTLICHES RECHT UND VÖLKERRECHT (2005).

Nicole Shumway, et al., *Policy solutions to facilitate restoration in coastal marine environments*, 134 MARINE POLICY (2021).

Niels Hoek, *A Critical Analysis of the Proposed EU Regulation on Nature Restoration: Have the Problems Been Resolved?*, 31 EUROPEAN ENERGY AND ENVIRONMENTAL LAW REVIEW (2022).

P. Ramírez-Monsalve, et al., *Ecosystem Approach to Fisheries Management (EAFM) in the EU – Current science–policy–society interfaces and emerging requirements*, 66 MARINE POLICY (2016).

Peter Bridgewater, et al., *Ecological Integrity: A Relevant Concept for International Environmental Law in the Anthropocene?*, 25 YEARBOOK OF INTERNATIONAL ENVIRONMENTAL LAW (2014).

Richard Barnes, *The Continuing Vitality of LOSC*, in LAW OF THE SEA. UNCLOS AS A LIVING TREATY (Jill Barrett & Richard Barnes eds., 2016).

Roberto Danovaro, et al., *Marine ecosystem restoration in a changing ocean*, 29 RESTORATION ECOLOGY (2021).

Sarah E. Lester, et al., *Spatial Planning Principles for Marine Ecosystem Restoration*, 7 FRONTIERS IN MARINE SCIENCE (2020).

Solène Guggisberg, et al., *Transparency in fisheries governance: Achievements to date and challenges ahead*, 136 MARINE POLICY (2022).

Ted McDorman, *Implementing Existing Tools: Turning Words Into Actions – Decision-Making Processes of Regional Fisheries Management Organisations (RFMOs)*, 20 THE INTERNATIONAL JOURNAL OF MARINE AND COASTAL LAW (2005).

Tullio Scovazzi, *Marine protected areas on the high seas: some legal and policy considerations*, 19 THE INTERNATIONAL JOURNAL OF MARINE AND COASTAL LAW (2004).

Virginia Matzek & Kerrie A Wilson, *Public support for restoration: Does including ecosystem services as a goal engage a different set of values and attitudes than biodiversity protection alone?*, 16 PLOS ONE (2021).

Xiyang Zhu & Jianye Tang, *The interplay between soft law and hard law and its implications for global marine fisheries governance: A case study of IUU fishing*, AQUACULTURE AND FISHERIES (2023).

Yimin Ye & John Valbo-Jørgensen, *Effects of IUU fishing and stock enhancement on and restoration strategies for the stellate sturgeon fishery in the Caspian Sea*, 131 FISHERIES RESEARCH (2012).

## Books and book sections

Alf Håkon Hoel, *The Evolving Management of Fisheries in the Arctic*, in RESEARCH HANDBOOK ON POLAR LAW (Karen N. Scott & David L. VanderZwaag eds., 2020).

An Cliquet, *International Law and Policy on Restoration*, in ROUTLEDGE HANDBOOK OF ECOLOGICAL AND ENVIRONMENTAL RESTORATION (Stuart K. Allison & Stephen D. Murphy eds., 2017).

An Cliquet, *Ecological Restoration as a Legal Duty in the Anthropocene*, in CHARTING ENVIRONMENTAL LAW FUTURES IN THE ANTHROPOCENE (Michelle Lim ed. 2019).

Anastasia Telesetsky, *Active Marine Restoration and Law*, in TRANSFORMING THE OCEAN LAW BY REQUIREMENT OF THE MARINE ENVIRONMENT CONSERVATION (Chaumette Patrick ed. 2019).

Christoph Schwarte & Linda Siegele, *MARINE PROTECTED AREAS ON THE HIGH SEAS?* (Foundation for International Environmental Law and Development. 2008).

Door Anastasia Telesetsky et al., *ECOLOGICAL RESTORATION IN INTERNATIONAL ENVIRONMENTAL LAW* (Routledge. 2017).

E. Penas Lado, *The objectives of the CFP*, in *QUO VADIS COMMON FISHERIES POLICY?* (E. Penas Lado ed. 2019).

F.A.O.U. Nations & W.J. Fletcher, *A REVIEW OF THE APPLICATION OF THE FAO ECOSYSTEM APPROACH TO FISHERIES (EAF) MANAGEMENT WITHIN THE AREAS BEYOND NATIONAL JURISDICTION (ABNJ)* (Food & Agriculture Org. 2020).

Gabriela Argüello, *Regime Interaction and GAIRS*, in *MARITIME LAW IN MOTION* (Proshanto K. Mukherjee, et al. eds., 2020).

Geoffrey Garver, *Ecological Integrity in the Anthropocene: Lessons for Law from Ecological Restoration and Beyond*, in *THE ROLE OF INTEGRITY IN THE GOVERNANCE OF THE COMMONS:*

GOVERNANCE, ECOLOGY, LAW, ETHICS (Janice Gray Laura Westra, Franz-Theo Gottwald ed. 2017).

H.G Schermers & N. Blokker, INTERNATIONAL INSTITUTIONAL LAW: UNITY WITHIN DIVERSITY (Martinus Nijhoff Publishers. 2003).

James Harrison, *Fishing and the Conservation of Marine Living Resources*, in SAVING THE OCEANS THROUGH LAW - THE INTERNATIONAL LEGAL FRAMEWORK FOR THE PROTECTION OF THE MARINE ENVIRONMENT (James Harrison ed. 2017).

Michael Bowman, et al., RESEARCH HANDBOOK ON BIODIVERSITY AND LAW (Edward Elgar Publishing Limited. 2016).

Nigel Dudley, GUIDELINES FOR APPLYING PROTECTED AREA MANAGEMENT CATEGORIES (IUCN. 2008).

Olufemi Elias, *Who Can Make Treaties? International Organizations*, in THE OXFORD GUIDE TO TREATIES (2ND EDITION) (Duncan B. Hollis ed. 2020).

Peter Valentine, ECOLOGICAL RESTORATION FOR PROTECTED AREAS : PRINCIPLES, GUIDELINES AND BEST PRACTICES (IUCN. 2012).

Sarah Ryan Enright & Ben Boteler, *The Ecosystem Approach in International Marine Environmental Law and Governance: Theory, Tools and Applications*, in ECOSYSTEM-BASED MANAGEMENT, ECOSYSTEM SERVICES AND AQUATIC BIODIVERSITY (Timothy G. O'Higgins, et al. eds., 2020).

Society for Ecological Restoration International Science & Policy Working Group, THE SER INTERNATIONAL PRIMER ON ECOLOGICAL RESTORATION (Society for Ecological Restoration International. 2004).

Stephanie Mansourian, *Governance and Restoration*, in ROUTLEDGE HANDBOOK OF ECOLOGICAL AND ENVIRONMENTAL RESTORATION (Stuart K. Allison & Stephen D. Murphy eds., 2017).

Stephen Minas, *The Ocean-Climate Nexus in the Unfolding Anthropocene: Addressing Environmental Challenges Through International Law and Cooperation*, in CHARTING ENVIRONMENTAL LAW FUTURES IN THE ANTHROPOCENE (Michelle Lim ed. 2019).

Syma A. Ebbin, et al., *A SEA CHANGE: THE EXCLUSIVE ECONOMIC ZONE AND GOVERNANCE INSTITUTIONS FOR LIVING MARINE RESOURCES* (Springer Dordrecht . 2005).

Tein McDonald, et al., *INTERNATIONAL STANDARDS FOR THE PRACTICE OF ECOLOGICAL RESTORATION—INCLUDING PRINCIPLES AND KEY CONCEPTS* (Society for Ecological Restoration International. 2016).

Thomas Luybaert, et al., *Status of Marine Biodiversity in the Anthropocene*, in YOUMARES 9 - THE OCEANS: OUR RESEARCH, OUR FUTURE (Simon Jungblut, et al. eds., 2020).

Toshinori Tanaka, *Governance for Protected Areas “Beyond the Boundary”—A Conceptual Framework for Biodiversity Conservation in the Anthropocene*, in CHARTING ENVIRONMENTAL LAW FUTURES IN THE ANTHROPOCENE (Michelle Lim ed. 2019).

William Cheung, et al., *PREDICTING FUTURE OCEANS : SUSTAINABILITY OF OCEAN AND HUMAN SYSTEMS AMIDST GLOBAL ENVIRONMENTAL CHANGE* (Elsevier. 2019).

### Thesis

Hendrik Schoukens, *Ecological restoration as new environmental paradigm: a legal review of opportunities and challenges within the context of EU environmental law, with a particular focus on the EU Nature Directives* (2017)

### Dictionary

Cambridge Academic Dictionary, ”Restoration”.

### **Web page**

Dmitry Gonchar, *The implementation of an ecosystem approach to fisheries management in UNCLOS and UNFSA*, available at [https://www.un.org/depts/los/convention\\_agreements/ICSP15/22/presen/DOALOS%20presentation\\_ecosystem%20approach\\_fisheries.pdf](https://www.un.org/depts/los/convention_agreements/ICSP15/22/presen/DOALOS%20presentation_ecosystem%20approach_fisheries.pdf)

European Commission, *Nature Restoration Law*, available at [https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law_en).

European Commission, *Nature restoration success stories*, available at [https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law/success-stories\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law/success-stories_en).

Eva Zabey, *Business leaders: why the EU must adopt the Nature Restoration Law*, World Economic Forum(12 June 2023), available at <https://www.weforum.org/agenda/2023/06/eu-legislation-nature-climate-crisis/#:~:text=Recognized%20as%20a%20global%20leader,protection%20and%20socio%20Deconomic%20priorities>.

FAO, *MPAs, fisheries management and the ecosystem approach*, available at [https://www.fao.org/fishery/en/topic/16200#:~:text=There%20are%20many%20types%20of,or%20retained,%20\(d\)%20gear](https://www.fao.org/fishery/en/topic/16200#:~:text=There%20are%20many%20types%20of,or%20retained,%20(d)%20gear).

FAO, *Regional fishery bodies (RFB)(2024)*, available at <https://www.fao.org/fishery/en/collection/organization>.

International Fund for Animal Welfare, *The EU Nature Restoration Law: a closer look at the compromises and challenges* (17 April 2024), available at <https://www.ifaw.org/international/journal/eu-nature-restoration-law-compromises-and-challenges>.

Ministère de l'enseignement supérieur et de la recherche, *Restoration of deep-sea habitats(2022)*, available at <https://www.horizon-europe.gouv.fr/restoration-deep-sea-habitats-33229>.

NOAA Fisheries, *Chesapeake Bay: Oyster Restoration*, available at <https://www.fisheries.noaa.gov/topic/chesapeake-bay/oyster-restoration>.

OSPAR Commission, *Benthic Habitats Thematic Assessment*(2023), available at <https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/benthic-habitats/>.

OSPAR Commission, *Collective Arrangement* available at <https://www.ospar.org/about/international-cooperation/collective-arrangement>.

The Guardian, *New EU nature law will fail without farmers, scientists warn* (30 April 2024), available at <https://www.theguardian.com/environment/2024/apr/26/eu-must-work-with-farmers-if-new-nature-restoration-law-is-to-succeed-say-experts-aoe>.

UN Decade on Ecosystem Restoration, *Oceans and Coasts*, available at <https://www.decadeonrestoration.org/types-ecosystem-restoration/oceans-and-coasts>.

UN Environmental Programme, *Regional Seas Programme*, available at <https://www.unep.org/topics/ocean-seas-and-coasts/regional-seas-programme>.

Seas at Risk, *EU nature law could be gamechanger for marine biodiversity, but will be meaningless if fisheries not properly addressed – NGO reaction* (22 June 2022), available at <https://seas-at-risk.org/press-releases/eu-nature-law-could-be-gamechanger-for-marine-biodiversity-but-will-be-meaningless-if-fisheries-not-properly-addressed-ngo-reaction/>.

