AGAINST THE CURRENT: CHARTING A NEW COURSE FOR HUMAN RIGHTS IN SUSTAINABLE FISHERIES MANAGEMENT

James H. Stitt[*]

[*] Executive Editor, Cardozo International & Comparative Law Review; J.D. Candidate, 2024, Benjamin N. Cardozo School of Law; B.S. 2018, University of Mississippi. I would like to thank my faculty advisor, Professor Jocelyn Getgen Kestenbaum, for her thoughtful suggestions and edits.

I. INTRODUCTION

The narrative of global fisheries extends beyond mere management of fish stocks to broader complexities of biodiversity, socio-economic dynamics, and cultural traditions. Escalating pressures of

overfishing and destructive practices show that reassessing our approaches to fisheries management is urgent. The fisheries sector has long been governed by Western-centric regulatory measures, which often overlook the traditional wisdom and sustainable practices of Indigenous and coastal communities, whose lives have been inextricably linked to the sea for generations. As we explore the world of fisheries management, we must remember that we are not only dealing with legal and policy aspects but also traversing a landscape enriched by human experiences and traditional knowledge. The international community must forge a path that aligns sustainable development, biodiversity conservation, and social justice, and create an effective regulatory framework that considers these intertwined narratives.

The crux of our discourse, therefore, must shift from a purely regulatory perspective to a more holistic one. Recently, recognition of the immense value of Indigenous knowledge systems has grown, emphasizing a "two-eyed seeing"[1] approach in which such knowledge can be used in tandem with Western knowledge.[2] Rethinking Western relationships with Indigenous communities, empowering Indigenous peoples and governments by giving them sovereignty over fisheries resources, and training Western scientists to engage respectfully with Indigenous knowledge are vital steps.[3] These diverse, profound Indigenous perspectives must be harmonized with modern management frameworks, thereby fostering a respectful dialogue between different knowledge systems. Such an approach is not just an academic exercise, but an essential step towards safeguarding the biological richness

1 As contemplated by Elder Dr. Albert Marshall, two-eyed seeing embraces "learning to see from one eye with the *strengths* of Indigenous knowledges and ways of knowing, and from the other eye with the *strengths* of Western knowledges and ways of knowing, and to using both these eyes together, for the benefit of all." Cheryl Bartlett, Murdena Marshall & Albert Marshall, *Two-Eyed Seeing and Other Lessons Learned Within a Co-Learning Journey of Bringing Together Indigenous and Mainstream Knowledges and Ways of Knowing*, 2 J. ENV'T STUD. & SCIS. 331, 335 (2012).

2 Steven J. Cooke, Elizabeth A. Fulton, Warwick H. H. Sauer, Abigail J. Lynch, Jason S. Link, Aaron A. Koning, Joykrushna Jena, Luiz G. M. Silva, Alison J. King, Rachel Kelly, Matthew Osborne, Julia Nakamura, Ann L. Preece, Atsushi Hagiwara, Kerstin Forsberg, Julie B. Kellner, Ilaria Coscia, Sarah Helyar, Manuel Barange, Elizabeth Nyboer, Meryl J. Williams, Ratana Chuenpagdee, Gavin A. Begg & Bronwyn M. Gillanders, *Towards Vibrant Fish Populations and Sustainable Fisheries that Benefit All: Learning from the Last 30 Years to Inform the Next 30 Years*, 33 REVS. FISH BIOLOGY & FISHERIES 317, 336 (2023).

3 *See id.*

of our oceans and the socio-cultural fabric of the fishing communities that rely on them.

Covering 71% of the earth's surface[4] and comprising 95% of the biosphere,[5] oceans are vital to both planetary and human health. They provide food, climate regulation, oxygen, commercial opportunities, economic development, recreation, livelihood, and cultural benefits. Fisheries, defined as geographic regions for commercial, recreational, or subsistence harvesting of aquatic life, represent a primary way that humans interact with marine resources.[6] Fish, as a renewable natural resource, have significant value due to their crucial role in aquatic ecosystems and contributions to human health and well-being, creating a source of exchange and ensuring food security, particularly in developing countries.[7] Responsible management of fisheries is thus crucial.[8] Unchecked exploitation of marine resources and degradation

4 Robert Costanza, *The Ecological, Economic, and Social Importance of the Oceans*, 31 ECOLOGICAL ECON. 199, 200 (1999).

5 U.N. OFF. OF LEGAL AFFS., THE SECOND WORLD OCEAN ASSESSMENT, at 1, 5, U.N. Sales No. E.21.V.5 (2021) [hereinafter *Second World Assessment*], https://www.un.org/regularprocess/sites/www.un.org.regularprocess/files/2011859-e-woa-ii-vol-i.pdf [https://perma.cc/5VCP-ZEAC].

6 U. HAWAII MANOA, *Food Resources and Fisheries Science*, S.E.A., https://manoa.hawaii.edu/sealearning/grade-5/earth-and-space-science/food-resources-and-fisheries-science [https://perma.cc/782M-78HL] (last visited Feb. 3, 2023). Fisheries worldwide contribute significantly to the life, health, and prosperity of present and future generations through food supply, employment, recreation, trade, and economic security. United Nations (@UN), TWITTER (June 4, 2022, 9:03 PM), https://twitter.com/UN/status/1533253016517844993 [https://perma.cc/Y567-L6A8].

7 Ussif Rashid Sumaila, William Cheung, Andrew Dyck, Kamal Gueye, Ling Huang, Vicky Lam, Daniel Pauly, Thara Srinivasan, Wilf Swartz, Reginald Watson & Dirk Zeller, *Benefits of Rebuilding Global Marine Fisheries Outweigh Costs*, 7 PLOS ONE 1, 1 (2012). The crucial roles that fish play are well-established in and protected by the international community. *See* United Nations Convention on the Law of the Sea, art. 61, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter LOSC]. Fisheries management must aim to sustainably maintain and restore populations of harvested species, while considering relevant environmental and economic factors, such as the needs of coastal fishing communities and developing countries. *See id.* Management efforts must also consider the effects on species associated with or dependent upon the harvested species to ensure their reproduction is not seriously threatened. *See id.*

8 *See* CODE OF CONDUCT FOR RESPONSIBLE FISHERIES, FOOD & AGRIC. ORG. OF THE U.N. 1 (1995) [hereinafter 1995 CODE OF CONDUCT], https://www.fao.org/3/v9878e/v9878e.pdf [https://perma.cc/U7JA-TZTK]; Anthony Charles, *Small-Scale Fisheries: On Rights, Trade and Subsidies*, 10 MARITIME STUD. 85, 87 (2011) ("[S]ince small-scale fisheries . . . are susceptible to over-exploitation, limitations on use of the fishery, in order to achieve environmental

of marine ecosystems can devastate the communities and populations dependent on these aquatic habitats.[9] Protection of coastal ecosystems and biodiversity is essential for preserving the cultural heritage, livelihood, and food security of those who rely on these systems.[10]

One-third of fisheries worldwide are severely overexploited,[11] leading to adverse ecological consequences like deterioration of marine ecosystems and drastic changes in fish species composition.[12] Overconsumption of marine resources is commonly, and unfairly, linked solely to the Global South's resource depletion and population growth.[13] In reality, the utilization of marine resources in the Global

sustainability, is necessary for long-term food security, poverty alleviation and other development objectives.").

9 *Migration, Environment, Climate Change (MECC) and Oceans*, U.N. ENV'T MIGRATION PORTAL, https://environmentalmigration.iom.int/migration-and-oceans [https://perma.cc/R3GS-Z8TN] (last visited Feb. 22, 2023).

10 *See* THE STATE OF WORLD FISHERIES AND AQUACULTURE 2020: SUSTAINABILITY IN ACTION, FOOD & AGRIC. ORG. OF THE U.N. 138 (2020) [hereinafter STATE OF WORLD FISHERIES], https://www.fao.org/documents/card/en/c/ca9229en [https://perma.cc/Q7QP-MLZF]. Marine and freshwater biodiversity both directly and indirectly support food security, nutrition, and livelihoods for millions of people worldwide. *Id.* This biodiversity is an important source of critical nutrients for marginalized and impoverished people. *Id.* The health of marine ecosystems is critical for meeting the nutritional demands of an increasing global population in a sustainable manner. *Id.*

11 *Id.* at 47 (34.2% in 2017); *see also* Stephen Floyd, *Fishing for Answers: Illegal Fishing, Depleted Stocks, and the Need for WTO Fishing Disciplines*, 52 GEO. J. INT'L L. 797, 797 (2021). Overfishing rates differ across regions, ranging "from <20% in the northeast and eastern central Pacific and eastern Indian Ocean, to >40% in the southeast Pacific, southwest Atlantic and across the eastern and western central Atlantic and 59% in the Mediterranean and Black Sea." Julia L. Blanchard, Reg A. Watson, Elizabeth A. Fulton, Richard S. Cottrell, Kirsty L. Nash, Andrea Bryndum-Buchholz, Matthias Büchner, David A. Carozza, William W. L. Cheung, Joshua Elliott, Lindsay N. K. Davidson, Nicholas K. Dulvy, John P. Dunne, Tyler D. Eddy, Eric Galbraith, Heike K. Lotze, Olivier Maury, Christoph Müller, Derek P. Tittensor & Simon Jennings, *Linked Sustainability Challenges and Trade-Offs Among Fisheries, Aquaculture and Agriculture*, 1 NATURE ECOL. & EVOL. 1240, 1241 (2017); *see also* Sara Curran, Anuradha Kumar, Wolfgang Lutz & Meryl Williams, *Interactions Between Coastal and Marine Ecosystems and Human Population Systems: Perspectives on How Consumption Mediates this Interaction*, 31 AMBIO 264, 264-65 (2002) (stating that coastal fish stocks in the Asian region have declined to between 10% and 30% of their previous biomass due to heavy fishing in the last three decades); U. Rashid Sumaila, Ahmed S. Khan, Andrew J. Dyck, Reg Watson, Gordon Munro, Peter Tydemers & Daniel Pauly, *A Bottom-Up Re-Estimation of Global Fisheries Subsidies*, 12 J. BIOECONOMICS 201, 202 (2010) [hereinafter Sumaila et al., *Bottom-Up Re-Estimation*].

12 Curran et al., *supra* note 11, at 265.

13 *Id.* at 264.

South primarily caters to markets in the Global North.[14] Therefore, policy interventions must address "free rider costs,"[15] which manifest as, in the context of this global consumption imbalance, the Global North's no-cost consumption of the Global South's primary resources.[16]

This Note scrutinizes existing sustainable fisheries models, considering the implications of fishery management and regulation on small-scale, artisanal fishers, coastal communities, and Indigenous peoples,[17] particularly in developing nations. It argues for a human rights-based framework in which all stakeholders and Indigenous peoples collaborate to achieve comprehensive social, ecological, and economic sustainability. It further proposes management and regulatory policies that promote inclusion of all relevant participants, incentivize sustainable practices, and penalize activities causing environmental degradation, loss of livelihood, loss of cultural practice, and human rights violations. As neither customary international law nor the Convention on the Law of the Sea currently safeguards Indigenous

14 *Id.*

15 Free rider costs describe a situation where certain entities gain advantages from shared resources without proportionally contributing to their sustainability or maintenance. William Nordhaus, *Climate Clubs: Overcoming Free-Riding in International Climate Policy*, 105 AM. ECON. REV. 1339, 1339 (2015). In the context of global fisheries, they can relate to institutions or nations utilizing marine resources from developing regions without bearing the corresponding responsibilities, analogous to the reliance on others' emission reductions in international climate-change policy. *Id.*

16 Curran et al., *supra* note 11, at 264.

17 Indigenous peoples are often characterized by their strong attachment to specific geographic locations and ancestral territories; their desire to remain culturally distinct from the dominant society; their preservation of their own socio-cultural, economic, and political ways of living and knowing; and their self-identification as "Indigenous" or "tribal." LIDIJA KNUTH, THE CODE OF CONDUCT FOR RESPONSIBLE FISHERIES AND INDIGENOUS PEOPLES: AN OPERATIONAL GUIDE 3 (2009) (citing JOSÉ R. MARTÍNEZ COBO, SPECIAL RAPPORTEUR OF THE SUB-COMMISSION ON PREVENTION OF DISCRIMINATION AND PROTECTION OF MINORITIES, STUDY OF THE PROBLEM OF DISCRIMINATION AGAINST INDIGENOUS POPULATIONS: CONCLUSIONS, PROPOSALS, AND RECOMMENDATION, U.N. Sales No. E.86.XIV.3 (1987)), https://www.fao.org/3/i0840e/i0840e.pdf [https://perma.cc/44JL-E6MM]. Indigenous people's knowledge, customs, and beliefs and their understanding of biodiversity conservation must be safeguarded by ensuring their autonomy and the ability to control their own future and the ways in which they utilize their resources. Madhav Gadgil, Fikret Berkes & Carl Folke, *Indigenous Knowledge for Biodiversity Conservation*, 22 AMBIO 151, 155 (1993).

peoples' rights,[18] this Note proposes a globally applicable framework, influenced by and considering the shortcomings of prior global initiatives. While international law regarding fisheries management has gradually shifted its focus towards sustainability and human rights concerns, even the most recent agreements fall short of establishing a truly human rights-based framework. This underlying gap emphasizes the need for a reassessment of current practices that takes into consideration the diverse perspectives of Indigenous and coastal communities.

Part II of this Note introduces the realities of small- and large-scale fisheries and discusses sustainability considerations unique to each. Part III conducts a historical overview of international law and regulatory bodies that are pertinent to fisheries management and regulation. Part IV discusses sustainable management and regulation of fisheries, considering the unique needs of all stakeholders. Part V proposes a comprehensive human rights-based framework for fisheries management. Part VI concludes.

II. SMALL- AND LARGE-SCALE FISHERIES: SUSTAINABILITY CONSIDERATIONS

A. Small-Scale Fisheries

Small-scale fisheries[19] play a pivotal role in fulfilling human rights. Nearly half-a-billion individuals rely on these fisheries for sustenance and livelihood. The fisheries significantly bolster the welfare of coastal communities globally by providing food and income sources.[20] Accounting for more than 90% of the world's fishing

18 Charlie Watt, *Inuit Rights to the Arctic*, LAWNOW (May 7, 2015), https://www.lawnow.org/inuit-rights-to-the-arctic/ [https://perma.cc/L4RD-TRNM].

19 For the purposes of this Note, the global fishing industry is divided into two sub-sectors: "small-scale fisheries," encompassing subsistence, artisanal, and Indigenous peoples' fishing, and "large-scale fisheries," encompassing industrial and semi-industrial fishing.

20 University of British Columbia, *Subsidies Promote Overfishing and Hurt Small-Scale Fishers Worldwide*, PHYS ORG (June 1, 2017) [hereinafter *Subsidies Promote Overfishing*], https://phys.org/news/2017-06-subsidies-overfishing-small-scale-fishers-worldwide.html [https://perma.cc/6RVK-2J2L]; *see also* Kathleen Auld & Loretta Feris, *Addressing Vulnerability and Exclusion in the South African Small-Scale Fisheries Sector: Does the Current Regulatory Framework Measure Up?*, 21 MARITIME STUD. 533, 546 (2022) (arguing that small-scale fisheries should be prioritized over large-scale fisheries because of small-scale fisheries' contribution to poverty reduction). The significance of small-scale fisheries cannot be

workforce,[21] over 97% of fishers employed in small-scale fisheries are from developing countries.[22] Within coastal communities, most of the fish caught by small-scale fisheries are consumed locally.[23] While these fisheries are significant for their economic contributions, their impact goes far beyond mere economic aspects, encompassing social, relational, and historical networks.[24]

Historically, sustainable fishing policies and dialogues have generally overlooked small-scale fisheries.[25] This trend, however, is shifting as attention is increasingly drawn towards these fisheries' difficulties and their substantial contribution to global welfare.[26]

overstated as they are vital in enhancing the accessibility of nutritious food in local, national, and international markets, while also generating a valuable source of income for those employed in the industry, both directly and indirectly. Megan Atcheson, *Large vs Small Scale Fishing – Which Is More Sustainable?*, MARINE STEWARDSHIP COUNCIL (Oct. 13, 2016, 8:19 AM), http://blog.msc.org/blog/2016/10/13/large-vs-small-scale-fishing-sustainable/ [https://perma.cc/4SW5-8LFX].

21 STATE OF WORLD FISHERIES, *supra* note 10; Sarah L. Smith, Willow Battista, Nicole Sarto, Rod Fujita, Denise Choy Stetten, Rachel Karasik & Merrick Burden, *A Framework for Allocating Fishing Rights in Small-Scale Fisheries*, 177 OCEAN & COASTAL MGMT. 52, 52 (2019); Atcheson, *supra* note 20.

22 STATE OF WORLD FISHERIES, *supra* note 10, at 133. Small-scale fishers and their communities frequently experience poverty, marginalization, and a lack of political influence. Smith et al., *supra* note 21, at 52.

23 Atcheson, *supra* note 20; *see also Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication*, FOOD & AGRIC. ORG. OF THE U.N., at v (2015) [hereinafter *SSF Guidelines*], https://www.fao.org/3/i4356en/i4356en.pdf [https://perma.cc/8XBS-GYK8].

24 Small-scale fisheries are deeply woven into the cultural, social, and historical tapestry of many communities, particularly in developing countries. *See* Raymond K. Ayilu, Michael Fabinyi, Kate Barclay & Mary Ama Bawa, *Blue Economy: Industrialisation and Coastal Fishing Livelihoods in Ghana*, 33 REV. FISH BIOLOGY & FISHERIES 801, 801-03 (2023). Their value cannot be fully captured by economic metrics alone, as they play a critical role in sustaining social structures, cultural heritage, and ecological balance. *See id.*

25 Jake Rice, *Achieving and Maintaining Sustainable Fisheries*, U.N. CHRON. (May 2017), https://www.un.org/en/chronicle/article/achieving-and-maintaining-sustainable-fisheries [https://perma.cc/M2KB-WJ97].

26 *Id.*; *see also* Francisco J. Marí, *SDG 14: Sustainable Fishery or Blue Economy?*, *in* SPOTLIGHT ON SUSTAINABLE DEV'T 2018: EXPLORING NEW POLICY PATHWAYS 150, 150 (Barbara Adams, Roberto Bissio, Chee Yoke Ling, Kate Donald, Jens Martens, Stefano Prato & Sandra Vermuyten eds., 2018), https://www.2030spotlight.org/sites/default/files/spot2018/Spotlight_2018_web.pdf [https://perma.cc/4DPQ-J2WA] ("The representatives of small-scale fisher communities are enjoying more and more recognition world-wide . . . . They are now accepted as an independent sector of fishery and can participate as holders of rights on an equal par with other actors and government representatives in developing international and national law on governing and managing fishing

Recently, global support for small-scale fisheries has significantly increased. According to the United Nations, the average global composite score, which measures the availability of supportive frameworks, practical aids, and the degree of small-scale fishers' participation in decision-making, rose from 3 out of 5 in 2018 to a perfect score of 5 out of 5 in 2022.[27] Yet, wealthy corporations that operate large-scale fisheries still receive a significant portion of the governmental assistance.[28]

Small-scale fisheries often lack the resources and capabilities of larger commercial operations, and, as a result, they are often more vulnerable to the impacts of overfishing, climate change, and other threats.[29] Addressing the specific challenges that small-scale fisheries encounter enables the development of more resilient and effective strategies that facilitate adaptation to changing conditions, ensure long-term sustainability, and maintain support for dependent communities. Support strategies for these fisheries might include capacity-building, technical assistance, and financial aid, which would aim to promote sustainable practices and adapt to restricted fishing opportunities among small-scale fishers.[30] Implementing community-based

grounds, coasts and seas."); FAO Regional Office for Asia and the Pacific, Rep. of the APFIC/FAO Regional Consultative Workshop on Securing Sustainable Small-scale Fisheries: Bringing Together Responsible Fisheries and Social Development, RAP Publication 2010/19, at 3 (2010) [hereinafter Rep. of the APFIC/FAO Regional Consultative Workshop] ("There is growing international and national recognition of the critical role small-scale fisheries play in food security and poverty alleviation and the well being of rural fishing communities.").

27 U.N. DEP'T OF ECON. & SOC. AFFS., STAT. DIV., THE SUSTAINABLE DEVELOPMENT GOALS REPORT 2022, at 55, U.N. Sales No. E.22.I.2 (2022), https://unstats.un.org/sdgs/report/2022/The-Sustainable-Development-Goals-Report-2022.pdf [https://perma.cc/UJG4-XVPD].

28 *See, e.g.*, *Subsidies Promote Overfishing*, *supra* note 20 (stating that most governmental subsidies go to large-scale fisheries); Nancy J. Turner, Fikret Berkes, Janet Stephenson & Jonathan Dick, *Blundering Intruders: Extraneous Impacts on Two Indigenous Food Systems*, 41 HUM. ECOLOGY 563, 566 (2013) (arguing that catch quotas and harvesting rights disadvantage Indigenous and coastal communities).

29 Ratana Chuenpagdee & Svein Jentoft, *Small-Scale Fisheries: Too Important to Fail*, *in* THE FUTURE OF OCEAN GOVERNANCE AND CAPACITY DEVELOPMENT: ESSAYS IN HONOR OF ELISABETH MANN BORGESE (1918-2002) 349, 351 (Dirk Werle, Paul R. Boudreau, Mary R. Brooks, Michael J.A. Butler, Anthony Charles, Scott Coffen-Smout, David Griffiths, Ian McAllister, Moira L. McConnell, Ian Porter, Susan J. Rolston & Peter G. Wells eds., 2018).

30 *See* Rep. of the APFIC/FAO Regional Consultative Workshop, *supra* note 26, at 2.

and rights-based approaches could also enhance the influence and participation of small-scale fishers in local resource management.[31]

B. Large-Scale Fisheries

Large-scale commercial fisheries often use high-capacity boats exceeding 130 meters in length, which are equipped with onboard facilities for processing seafood at sea and can hold over 2,000 tons.[32] These vessels have large crews and can stay at sea for extended periods, enabling them to cover vast areas.[33] The same features that provide advantages to these vessels also make it difficult for management authorities to monitor their activities.[34] In certain fishing management authorites, regulations mandate the installation of vessel-monitoring systems ("VMS") on larger fishing vessels.[35] VMS technologies serve as comprehensive tools that promote greater transparency and adherence to sustainable practices.[36]

In the past half-century, industrial fishing has overexploited biodiversity in marine systems.[37] Industrial fisheries operate in at least 55% of the world's oceans, and are particularly concentrated in the northeast Atlantic, northwest Pacific, and upwelling zones off the South American and West African coasts.[38] The surge in industrial fishing has strained ocean resources, and overexploitation may cause devastating economic effects for the entire fishing sector. Since the 1980s, fish catches have declined globally.[39]

Worldwide, large-scale fisheries receive subsidies four times higher than small-scale fisheries, and up to 60% of these funds

31 *See id.* at 23.

32 Atcheson, *supra* note 20.

33 *Id.* Note that the size of the boat does not necessarily determine the number of fish it can catch, but rather the need for necessary facilities to stay at sea for longer. *Id.*

34 *Id.*

35 Philip Christiani, Julien Claes, Elin Sandnes & Antoine Stevens, *Precision Fisheries: Navigating a Sea of Troubles with Advanced Analytics*, MCKINSEY & CO. (Dec. 20, 2019), https://www.mckinsey.com/industries/agriculture/our-insights/precision-fisheries-navigating-a-sea-of-troubles-with-advanced-analytics [https://perma.cc/K4WK-JEPT].

36 *Id.*

37 Ayilu et al., *supra* note 24.

38 *Id.*

39 Daniel Pauly, *Unsustainable Marine Fisheries*, 7 SUSTAINABLE DEV. L. & POL'Y 10, 10 (2006).

contribute to excessive fishing practices.[40] Though small-scale fisheries give jobs to over 22 million people and help ensure food security,[41] they only received 19% of global fisheries subsidies in 2018.[42] Furthermore, large-scale operations cause significant environmental degradation. Industrial fisheries abandon 640,000 tons (more than one billion pounds) of fishing equipment in the ocean each year.[43] This equipment, called "ghost gear" or "ghost nets," can remain in the ocean for 600 years before it decomposes.[44] Studies demonstrate that this equipment causes serious harm to coral reefs, ensnares and entraps various marine life such as whales and dolphins, and adds to the already substantial amount of waste found in the ocean.[45]

Overexploitation heightens pressure on the fishing industry to sustain yields and safeguard profit margins by using high-capacity vessels or larger nets at the potential cost of sustainability.[46] Despite the potential negative environmental impact of large-scale operations,[47] onboard observers and satellite tracking can promote responsible and sustainable fishing.[48] Large commercial fishing operations

40 *Subsidies Promote Overfishing*, *supra* note 20; *see also* Roger Martini, *Many Government Subsidies Lead to Overfishing. Here's a Solution.*, ORG. ECON. COOP. & DEV. (Feb. 28, 2019), https://www.oecd.org/agriculture/government-subsidies-overfishing/ [https://perma.cc/RG8T-GR5R] ("Access to [subsidies for cheaper fuel, gear, and shipping vessels] increases fishing activities and ultimately leads to depletion of fish stocks, lower fishing yields, and decreased incomes for fishers. These kinds of subsidies also tend to favour larger fishers, not the smaller, traditional fishers who are considered most vulnerable.").

41 *Subsidies Promote Overfishing*, *supra* note 20.

42 Anna Schuhbauer, Daniel J. Skerritt, Naazia Ebrahim, Frédéric Le Manach & U. Rashid Sumaila, *The Global Fisheries Subsidies Divide Between Small- and Large-Scale Fisheries*, FRONTIERS IN MARINE SCI. 1, 4, 7 (2020). Regional analysis reveals that African countries provide the highest proportion of support to small-scale fisheries at 34%. *Id.* at 5.

43 Erin Murphy, *Unsustainable Fishing Practices and Their Long-lasting Effects on Marine Life*, INT'L MARINE MAMMAL PROJECT (May 15, 2019), https://savedolphins.eii.org/news/unsustainable-fishing-practices-and-their-long-lasting-effects-on-marine-li [https://perma.cc/8826-VR39].

44 *Id.*

45 *Id.*

46 ALEXANDER PROELß, INTERNATIONALES UMWELTRECHT 658 (Kristin Bartenstein, Felix Beck, Wolfgang Durner, Astrid Epiney, Malte Gutt, Hagen Krüger, Till Markus, Nele Matz-Lück, Alexander Proelß, Götz Reichert, Kirsten Schmalenbach, Peter-Tobias Stoll & Silja Vöneky eds., 2d ed. 2022).

47 Atcheson, *supra* note 20.

48 *See* Tony Long, *Track and Trace: Transparent and Digitized Fishing Data Is Crucial to Ocean Resilience*, WORLD ECON. F. (June 4, 2020), https://www.weforum.org/agenda/2020/06/track-and-trace-transparent-and-digitized-fishing-data-is-crucial-to-ocean-resilience/ [https://perma.cc/S69K-KXF7] ("New AI-powered

can enhance their sustainable fishing practices by adapting to technology innovations, scientific advancements, and expert advice.[49]

C. Sustainability: Social, Economic, and Ecological Considerations

Sustainability refers to the ability to provide goods and services to human communities while balancing environmental, social, and economic factors.[50] The knowledge of local individual fishers and Indigenous fishing cultures can be useful for the decision-making of both large- and small-scale fisheries and should be incorporated into fisheries regulation at all levels to address unsustainable practices.[51] To prevent currently sustainable fisheries from becoming unsustainable, governments must be constantly vigilant.[52] Reducing overall fishing levels emerges as the simplest way to maintain sustainability.[53] If overall fishing pressure were reduced, all fisheries would be more resilient to challenges like ocean pollution, climate change, and other factors, enabling overfished populations to recover.[54] The results of decreasing overall fishing pressure also align with recommendations

electronic monitoring systems can play a vital role in maintaining data pipelines, especially where observer programs are vulnerable to disruption, and they can be scaled up to allow coverage on vessels that do not yet have observers onboard."); *see also* Christiani et al., *supra* note 35, at 6-7.

49 Atcheson, *supra* note 20.

50 Ray Hilborn, Elizabeth A. Fulton, Bridget S. Green, Klaas Hartmann, Sean R. Tracey & Reg A. Watson, *When Is a Fishery Sustainable?*, 72 CAN. J. FISHERIES & AQUATIC SCIS. 1433, 1433 (2015). The U.N. Convention on the Law of the Sea "establishes a delicate balance between the need for economic and social development through the use of the ocean and its resources and the need to conserve and manage those resources in a sustainable manner and to protect and preserve the marine environment." *Second World Assessment*, *supra* note 5, at 22. The relationship between economics and the idea of sustainability is noteworthy, particularly in light of the emergence of the idea of sustainable development, which aims to establish a stronger connection between environmental sustainability and economic growth, particularly in less developed countries. *See* Richard Stafford, Commentary, *Sustainability: A Flawed Concept for Fisheries Management?*, 7 ELEMENTA: SCI. ANTHROPOCENE 1, 2 (2019).

51 Rice, *supra* note 25. "Integrated" means both "horizontal – across economic sectors and government agencies; and vertical – of different levels of government from local to international, across land and sea, across scientific disciplines, and across the research, planning, and management spectrum." Curran et al., *supra* note 11, at 265 (arguing that "demographic knowledge, policy, and analysis skills are rarely listed among the capacity needs").

52 Rice, *supra* note 25.

53 *Id.*

54 *Id.*

for ocean preservation, such as the proposal to designate 30% of the ocean as marine protected areas.[55]

Sustainability in fisheries encompasses more than just maintaining fish populations and their ecosystems.[56] Fisheries serve multiple vital purposes: they generate revenue from market sales; provide subsistence for the workers; and critically, supply food for communities,[57] especially in less developed countries and coastal regions.[58] For instance, in Cambodia, a nation classified as a "least developed country" by the United Nations, the catch from local fishers is essential to the national economy and serves as the primary source of animal protein for the population.[59] Consequently, even if fish populations were

55 *Id.*

56 *See id.*

57 Rice, *supra* note 25. In the least-developed nations, fish is responsible for around 29% of the total animal protein consumed, while in other developing countries, approximately 19%. Sheryl L. Hendriks, *Sustainable Small-Scale Fisheries Can Help People and the Planet*, 606 NATURE 650, 650 (2022). Around 3 billion individuals rely on capture fisheries and aquaculture for nearly 20% of their average per capita animal protein consumption, while 1.3 billion individuals depend on them for nearly 15% of their per capita consumption, and in some countries, it can be more than 50%. Rep. of the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, *Sustainable Fisheries and Aquaculture for Food Security and Nutrition*, at 13 (2014) [hereinafter Rep. on Food Security and Nutrition].

58 *Threats: Unsustainable Fishing and Farming*, OUR SHARED SEAS [hereinafter OUR SHARED SEAS], https://oursharedseas.com/threats/threats-unsustainable-fishing-and-farming/ [https://perma.cc/75ZF-GSZS] (last visited Nov. 25, 2022). Small-scale fisheries have a notable impact on people's livelihoods worldwide, as they contribute around 50% of global fish catches, a significant portion of which is consumed in developing countries. Smith et al., *supra* note 21, at 52.

59 In 2016, Cambodians had an average consumption of 63 kg of fish per person per year, and "fisheries contributed 6 % to 8 % gross domestic product or around 34.7 % of products from the agriculture, forestry, and fisheries sector." Thuch Panha, *Fisheries Country Profile: Cambodia (2018)*, SE. ASIAN FISHERIES DEV. CTR. (Apr. 4, 2019), http://www.seafdec.org/fisheries-country-profile-cambodia-2018/. More recently, "[i]n 2021, the gross domestic product from fisheries was 7-8 %, and the fish available for consumption was 52.4kg/capita." *Fisheries Country Profile: Cambodia*, SE. ASIAN FISHERIES DEV. CTR. (Sept. 9, 2022), http://www.seafdec.org/fisheries-country-profile-cambodia/. In 2006, Cambodia strengthened its fisheries laws and included measures that take into account social, economic, and environmental factors while aiming to ensure sustainable fisheries management. *Fishing Policy and Administration*, OPEN DEV. CAMBODIA [hereinafter OPEN DEV. CAMBODIA], https://opendevelopmentcambodia.net/topics/fishing-policy-and-administration/ [https://perma.cc/9GFU-UGET] (Sept. 30, 2015); Law on Fisheries, NS/RKM/506/011, arts. 59-63 (2007) (Unofficial Translation, as of Mar. 20, 2007), https://faolex.fao.org/docs/pdf/cam82001.pdf [https://perma.cc/47ZK-PJNU]. The Law on Fisheries creates "community fisheries" that guarantee the rights of local

to recover, simply curbing fishing could lead to unsustainable social and economic impacts to local fish-reliant communities, except in rare cases typically linked with a history of chronic overfishing.[60]

Likewise, if the only negative consequences of reducing fishing were related to financial implications, then market interventions and economic policies could lessen some of the negative consequences on revenue.[61] However, the reality is more complex. Encouraging higher capital investment through market interventions and economic policies could lead to an oversupply of fishing fleets.[62] Many coastal communities, particularly in less-developed nations, would suffer from a loss of fishing-based livelihoods due to limited social support resources and alternate employment options.[63] A decline in fishing could even wipe out entire communities, as small-scale fisheries often employ multiple family generations with both genders playing significant roles.[64] Hence, efforts to enhance conditions and

communities to utilize fishery resources for traditional, religious, and livelihood purposes. *See* OPEN DEV. CAMBODIA.

60 Rice, *supra* note 25; *see also* U.N. CONF. ON TRADE & DEV., REVIEW OF MARITIME TRANSPORT 2020, at 131-32, UNCTAD/RMT/2020, U.N. Sales No. E.20.II.D.31 (2020).

61 Rice, *supra* note 25.

62 *Id.*

63 *Id.*

64 *Id.*; *see also* NILANJANA BISWAS, TOWARDS GENDER-EQUITABLE SMALL-SCALE FISHERIES GOVERNANCE AND DEVELOPMENT: A HANDBOOK, FOOD & AGRIC. ORG. OF THE U.N., at 7 (2017), https://www.fao.org/3/i7419e/i7419e.pdf [https://perma.cc/5BTR-79MH] (approximately 47% of workers in the fisheries supply chain are women); *see also* STATE OF WORLD FISHERIES, *supra* note 10, at 133. This Note acknowledges women's significant and crucial role in the fishing industry. While necessary, a deeper examination of women and gender-nonconforming individuals' roles is beyond the scope of this Note. For further discussion on this subject, see Lana Brandt, *Fishing for Gender Equality and Women Empowerment in the Seafood Industry*, FISHWISE (Mar. 5, 2020), https://fishwise.org/fishing-for-gender-equality/ [https://perma.cc/XA3S-GVA4] ("Women make a tremendous contribution to the seafood industry, and yet they continue to be undervalued, vulnerable to some of the worst working environments, and even sexual victims in their seafood roles."); *Why Gender Equality Matters in Fisheries and Aquaculture*, WORLDFISH https://www.worldfishcenter.org/pages/why-gender-equality-matters-fisheries-aquaculture/ [https://perma.cc/9WZL-8PSK] (last visited Feb. 5, 2023) ("Gender equality is central to realizing the potential of fisheries and aquaculture to increase fish production, and to improve livelihoods and enhance nutrition security, especially for the most nutritionally vulnerable."); Sangeeta Mangubhai & Sarah Lawless, *Exploring Gender Inclusion in Small-Scale Fisheries Management and Development in Melanesia*, 123 MARINE POL'Y 1, 9 (2021) (asserting that incorporating gender equality in small-scale fisheries management needs a systemic transformation of institutions, challenging existing norms and power dynamics, and fostering dialogues to redefine gender roles and organizational values).

fairness across the fisheries industry's value chain could lead to broad societal benefits and equitable social development.[65]

For a more sustainable future in the fishing industry, an integrated approach is required—one that is cognizant of social, economic, and ecological outcomes and that places the rights and knowledge of small-scale fishers and Indigenous peoples at the heart of policymaking and management strategies.[66] Consequently, it is crucial to frame the fishery rights discourse within the broader context of human rights, [67] particularly with regard to small-scale fisheries that often confront human rights issues.[68] Implementing a rights-based management approach, entailing specific fishery access rights such as catch quotas and decision-making authority, can have many positive effects.[69] With appropriate allocation, these rights can achieve a balance of diverse goals—encompassing social, cultural, spiritual, economic, and environmental dimensions—which include reducing conflict, enhancing food security, improving livelihoods for small-scale fishers and their communities, and contributing to the preservation of local ecosystems.[70]

III. INTERNATIONAL REGULATORY FRAMEWORKS AND BODIES FOR FISHERIES MANAGEMENT

Fishing rights have long been subject to transnational agreements and dispute settlements, traditionally focusing more on delimiting and expanding state sovereign rights for exclusive exploitation

65 STATE OF WORLD FISHERIES, *supra* note 10, at 128. The National Oceanic and Atmospheric Administration (NOAA) of the United States provides an example for sustainable fisheries with the goals of providing livelihoods, recreation, and the maintenance of coastal communities. *Socioeconomics*, NOAA FISHERIES, https://www.fisheries.noaa.gov/topic/socioeconomics [https://perma.cc/9LGT-DTDV] (last visited Sept. 19, 2022). By considering and studying both the social and economic facets of fishing, NOAA promotes policies that increase societal benefits from ocean resources. *Id.*

66 Rice, *supra* note 25.

67 Rep. of the APFIC/FAO Regional Consultative Workshop, *supra* note 26.

68 *See* Charles, *supra* note 8.

69 *Id.*

70 *See* Rep. of the APFIC/FAO Regional Consultative Workshop, *supra* note 26. *But see* Charles, *supra* note 8, at 86 ("However, while human rights are 'universal', a human rights perspective does not imply 'universal' access to fisheries, and unlimited exploitation. That would be counter to the fundamental reality that since small-scale fisheries (like all others) are susceptible to over-exploitation, limitations on use of the fishery, in order to achieve environmental sustainability, is necessary for long-term food security, poverty alleviation and other development objectives.").

than conservation and sustainable management.[71] However, the landscape of international law concerning fisheries management and sustainability has evolved, gradually giving more attention to sustainability and human rights concerns, underpinned by significant international jurisprudence. This journey towards centralizing human rights and sustainability in the fisheries management conversation began with the 1958 Convention on Fishing and the Conservation of Living Marine Resources of the High Seas ("1958 Law of the Sea").[72] This Convention marked the beginning of international cooperation to conserve and manage fisheries, and the world has since seen a growing awareness of the necessity of sustainable practices. Despite its name, the 1958 Law of the Sea viewed conservation in terms of maximizing food supply for human consumption rather than maintaining sustainable fish populations.[73] As a result, this Convention failed to provide a comprehensive framework for sustainable fisheries management, which is evident from the subsequent decline in global fish stocks.[74] Nevertheless, the international community has made significant strides towards ocean conservation, despite the ongoing challenges in sustainably managing the ocean economy and ensuring that local communities can reap social and economic benefits.[75]

This Section aims to dive deeper into the evolution and current state of the international agreements, guidelines, conventions, and bodies that oversee fisheries management. It begins with the United Nations Convention on the Law of the Sea, which signified a major shift in the global approach towards marine conservation and sustainability.

71 PROELß, *supra* note 46, at 658.

72 Convention on Fishing and the Conservation of Living Resources of the High Seas, Apr. 29, 1958, 17 U.S.T. 138, 559 U.N.T.S. 285 [hereinafter 1958 Law of the Sea].

73 PROELß, *supra* note 46, at 658; *see also* 1958 Law of the Sea, *supra* note 72, art. 2.

74 Despite isolated positive examples, the legal regulation as a whole was deficient with regard to sustainable management. PROELß, *supra* note 46, at 658.

75 Nathan Andrews, Nathan J. Bennett, Philippe Le Billon, Stephanie J. Green, Andrés M. Cisneros-Montemayor, Sandra Amongin, Noella J. Gray & U. Rashid Sumaila, *Oil, Fisheries and Coastal Communities: A Review of Impacts on the Environment, Livelihoods, Space and Governance*, 75 ENERGY RSCH. & SOC. SCI. 1, 2 (2021).

A. United Nations Convention on the Law of the Sea

The United Nations Convention on the Law of the Sea ("LOSC" or "the Convention"), often referred to as the "constitution for the oceans," was adopted and signed by 119 countries on December 10, 1982, at the Third United Nations Conference on the Law of the Sea ("UNCLOS").[76] This event was significant not only because it was the first time an international convention had garnered so many signatures on its opening day, but also because of the diverse representation among the signatories, including nations from various geographic and economic contexts, including coastal, landlocked, and geographically disadvantaged countries.[77] Notably, over a decade elapsed before the LOSC came into force on November 16, 1994, and since then, it has provided the predominant legal framework for guiding fisheries management.[78]

The LOSC grants coastal states sovereignty over the natural resources within their exclusive economic zones ("EEZs") and requires them to conserve fish stocks and cooperate with other nations in managing shared fish populations.[79] Since the Convention's inception, the international community has grown increasingly concerned about overfishing, habitat and ecosystem destruction, biodiversity loss, pollution, and climate change impacts.[80] The Convention also represents customary international law in many ways.[81] It provides a

76 Tullio Treves, *United Nations Convention on the Law of the Sea: Introductory Note*, U.N. AUDIOVISUAL LIBR. OF INT'L L. (2008), https://legal.un.org/avl/ha/uncls/uncls.html [https://perma.cc/N6Z9-TTQR] (Judge Tullio Treves was a judge of the International Tribunal for the Law of the Sea from 1996 to 2011).

77 *See* Tommy T.B. Koh, 'A Constitution for the Oceans': Remarks by Tommy T.B. Koh, of Singapore, at xxxiii https://www.un.org/depts/los/convention_agreements/texts/koh_english.pdf [https://perma.cc/Z6XR-Z3MZ] (adapted from statements by the President of the Third United Nations Conference on the Law of the Sea on Dec. 6 and 11, 1982, at the final session of the Conference at Montego Bay). The LOSC is also considered one of the most comprehensive international documents ever adopted. Martin Lishexian Lee, *The Interrelation Between the Law of the Sea Convention and Customary International Law*, 7 SAN DIEGO INT'L L.J. 405, 406, 409 (2006).

78 Bleuenn Guilloux, *The International Laws for Ocean and Climate*, *in* OCEAN AND CLIMATE PLATFORM: SCIENTIFIC FACT SHEETS 106, 106 (2019).

79 James W. Houck, *The Opportunity Costs of Ignoring the Law of Sea Convention in the Arctic*, HOOVER INST.: ARCTIC SEC. INITIATIVE 6 (2013).

80 Guilloux, *supra* note 78, 106.

81 Lee, *supra* note 77, at 406, 409, 419, 420 (arguing that the LOSC's provisions are binding on all states). For example, the United States is not a party to the Convention, but it "support[s] and observe[s] principles of established customary international law reflected in the Convention." THE WHITE HOUSE, NATIONAL STRATEGY

general framework that encourages multilateral approaches to sustainable fisheries management but does not specify exact methods for state parties to follow.[82]

Notwithstanding these provisions, the LOSC has limitations as a fisheries management framework. One key issue is the Convention's potential to marginalize Indigenous communities, since it does not guarantee Indigenous involvement in maritime law matters, especially those directly impacting their rights.[83] A revision of the framework that accounts for significant advancements in international law and Indigenous rights is thus necessary to prevent such marginalization.[84] The Convention's failure to integrate Indigenous interests underscores the need for supplementary regulations and instruments that specifically ensure the rights and participation of Indigenous communities in marine resource governance, setting the stage for the Code of Conduct for Responsible Fisheries.

B. Code of Conduct for Responsible Fisheries

International organizations frequently use voluntary measures to tackle critical public issues because countries are often hesitant to cede sovereign powers to these bodies.[85] A prime example is the Food and Agriculture Organization's Code of Conduct for Responsible Fisheries ("CCRF" or "the Code"), adopted in 1995.[86] The Code, though its recommendations are voluntary, provides guidance for managing and conducting fisheries. How its voluntary nature affects the practical implementation of its provisions remains uncertain, however.[87] Were it a mandatory instrument, its language might not retain

FOR THE ARCTIC REGION 10 (2013), https://obamawhitehouse.archives.gov/sites/default/files/docs/nat_arctic_strategy.pdf [https://perma.cc/332W-UY3C].

82 Houck, *supra* note 79, at 6.

83 Watt, *supra* note 18.

84 *Id.*

85 Jürgen Friedrich, *Legal Challenges of Nonbinding Instruments: The Case of the FAO Code of Conduct for Responsible Fisheries*, 9 GERMAN L.J. 1540, 1540 (2008).

86 *Illegal, Unreported and Unregulated (IUU) Fishing: Code of Conduct for Responsible Fisheries*, FOOD & AGRIC. ORG. OF THE U.N. [hereinafter *IUU Fishing*], https://www.fao.org/iuu-fishing/international-framework/code-of-conduct-for-responsible-fisheries/en/ [https://perma.cc/RVK2-XVZF] (last visited Feb. 11, 2023).

87 *See Evaluations of Compliance with the FAO (UN) Code of Conduct for Responsible Fisheries*, 14 FISHERIES CENTRE RSCH. REPS., no. 2, 2006, at 3.

the same clarity and strength.[88] The Code is globally recognized as providing essential guidance for the fishing industry's future,[89] addressing all facets of fisheries and aquaculture.[90] Its principles have inspired several national and international initiatives[91] such as the European Community Council Regulation 2371/2002,[92] Canada's Oceans Act,[93] and the U.S. Commission on Ocean Policy.[94]

The Code's purpose is to provide international standards for responsible practices in fisheries and aquaculture; it seeks to conserve, manage, and develop living aquatic resources while preserving ecosystems and biodiversity.[95] The Code's adaptable standards can be applied by national, subregional, and regional actors to encourage more responsible behavior in the fishing industry, ultimately leading to long-term sustainability.[96] The Code acknowledges the significant role of small-scale fisheries in employment, income, and food security, and urges States to safeguard fishers' rights, especially those in subsistence, small-scale, and artisanal fisheries.[97] Small-scale fishery protection should ensure a secure and just livelihood and, when suitable, preferential access to traditional fishing grounds and resources.[98]

The Code's first objective is to set guidelines that are consistent with applicable international legal norms, promote responsible fishing practices, and consider pertinent biological, technological,

88 Fortunately, the clear language makes it possible to assess compliance with its provisions. *Id.*

89 Charles, *supra* note 8, at 86.

90 *IUU Fishing*, *supra* note 86.

91 Marta Coll, Simone Libralato, Tony J. Pitcher, Cosimo Solidoro & Sergi Tudela, *Sustainability Implications of Honouring the Code of Conduct for Responsible Fisheries*, 23 GLOB. ENV'T CHANGE 157, 157 (2013).

92 Council Regulation 2371/2002, 2002 O.J. (L 358).

93 Oceans Act, S.C. 1996, c 31 (Can.).

94 U.S. COMMISSION ON OCEAN POLICY, AN OCEAN BLUEPRINT FOR THE 21ST CENTURY (2004), https://oeab.noaa.gov/wp-content/uploads/2020/Documents/us-commission-report.pdf [https://perma.cc/3YDV-2AZH].

95 *IUU Fishing*, *supra* note 86.

96 *Id.*

97 1995 CODE OF CONDUCT, *supra* note 8, art. 6.18; *see Evaluations of Compliance with the FAO (UN) Code of Conduct for Responsible Fisheries*, *supra* note 87, at 5 ("The Code's overall goal is intrinsically linked to food security for the world's poor and to sustainable economic benefits. It was evident to those who drafted the Code that fundamental structural changes to the ways in which fisheries operate were required if the benefits to human society of fisheries were to be sustainable.").

98 1995 CODE OF CONDUCT, *supra* note 8, art. 6.18.

economic, social, environmental, and commercial factors.[99] The Code states that fishing privileges obligate fisheries to conduct fishing operations in a responsible manner and to sustainably preserve and manage the aquatic resources.[100] It outlines strategies that approach the complexities and unknowns of fisheries management with caution and endeavors to minimize the unintended consequences of fishing, such as bycatch[101] and damage to marine habitats.[102]

The Code recognizes the unique challenges that developing countries face in meeting proposed standards.[103] It suggests that countries adopt measures like financial and technical support, technology transfer, training, and scientific cooperation to develop their fishing industries and engage in high seas fishing.[104] While the Code admirably focuses on conservation and sustainability, it fails to adequately consider the needs and interests of Indigenous peoples; it does not call for the full participation of Indigenous peoples in the management and regulation decision-making processes.[105] The Code only once addresses the unique needs and interests of Indigenous peoples.[106] It acknowledges, in Article 7.6.6, that decision-making on the use, conservation, and management of fishery resources should recognize the

99 *Id.* at Intro.; *Evaluations of Compliance with the FAO (UN) Code of Conduct for Responsible Fisheries*, *supra* note 87, at 5 (The Code "was designed to ensure the benefits of fisheries for future generations by encouraging responsible fishing practices.").

100 M.R. Boopendranath, *FAO Code of Conduct for Responsible Fishing Operations*, *in* FISH HARVESTING SYSTEMS FOR RESOURCE CONSERVATION 71, 73 (2012).

101 "Bycatch" is any non-target animal that is caught during fishing operations. *See* Murphy, *supra* note 43. This can include "marine animals like whales, dolphins, turtles, seals, birds and . . . sharks that accidentally got in the way." *Id.* Bycatch amounts to approximately 40% of global annual catch. *Id.*

102 Rice, *supra* note 25.

103 1995 CODE OF CONDUCT, *supra* note 8, art. 5.

104 *Id.*

105 However, in 2003 a report was produced with respect to the Code of Conduct's implementation in the Pacific Islands that stresses the participation of Indigenous peoples. *See* Rep. of the Workshop on the Implementation of the 1995 FAO Code of Conduct for Responsible Fisheries in the Pacific Islands: A Call to Action, Legal Considerations and Issues Relating to the 1995 FAO Code of Conduct for Responsible Fisheries, ¶ 23 (2004). Pacific Island countries recognized the significance of legislating the requirement for stakeholder participation in decision-making to ensure effective fisheries management and implementation of legislation. *Id.* Stakeholder participation could be facilitated through membership in advisory committees or community-based fisheries management. *Id.* It was observed that certain countries already engaged stakeholders in creating and assessing fishery management plans. *Id.*

106 *See* 1995 CODE OF CONDUCT, *supra* note 8, art 7.6.6.

traditional practices, needs, and interests of Indigenous peoples and local fishing communities that heavily rely on these resources for their livelihood.[107] Recognition and acknowledgement are a step in the right direction, but they fail to ensure that Indigenous peoples have "a seat at the table."[108]

C. The Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication

The Code broadened the scope of sustainable fisheries management to include social, economic, and food security aspects, addressing both small- and large-scale fisheries. Building on the Code, the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication ("SSF Guidelines") provided further focus on the challenges faced by small-scale fisheries, particularly in developing nations.[109] These Guidelines were developed by the Food and Agriculture Organization ("FAO") through a collaborative and consultative method, engaging small-scale fishing communities, government representatives, regional organizations, civil society organizations, and other stakeholders.[110] The SSF Guidelines are the first effort by an international organization devoted to the crucial, yet previously under-recognized, small-scale fishing sector.[111] Beyond fishery management, the SSF Guidelines also consider gender equality, social progress, job opportunities, and the effects of climate change.[112]

The SSF Guidelines aim to enhance the role of small-scale fisheries in global food security and nutrition; facilitate equitable development and poverty eradication in small-scale fishing communities; and achieve sustainable, responsible fishery resource management in line with the CCRF.[113] An essential part of the SSF Guidelines is the acknowledgment and safeguarding of local customs and

107 *Id.*

108 Telephone interview with Kadi Bizyayeva, Fisheries Dir., Natural Res. Dep't, Stillaguamish Tribe of Indians (Aug. 4, 2023) (notes on file with author).

109 *See SSF Guidelines*, *supra* note 23, at ix.

110 *Id.* at xi.

111 *See generally id.*

112 *Policy Support and Governance Gateway: Sustainable Small-Scale Fisheries*, FOOD & AGRIC. ORG. OF THE U.N. [hereinafter *Policy Support and Governance Gateway*], https://www.fao.org/policy-support/policy-themes/sustainable-small-scale-fisheries/en/ [https://perma.cc/YMY9-LCKJ] (last visited Sept. 1, 2023).

113 *SSF Guidelines*, *supra* note 23, at 1.

practices.[114] Particularly, the Guidelines stress the importance of recognizing and protecting the customary or preferential access to fisheries resources and land by small-scale fishing communities, including Indigenous peoples and ethnic minorities, in ways that align with international human rights law.[115]

Furthermore, the SSF Guidelines emphasize that national governments should prioritize small-scale fishers' access to national waters, a move designed to foster equitable outcomes and encourage reforms that redistribute resources.[116] They also endeavor to promote the economic, social, and environmental sustainability of small-scale fisheries; guide stakeholders in implementing environmentally responsible and participatory policies; and increase public awareness of the importance of small-scale fisheries.[117] To achieve these objectives, the SSF Guidelines advocate for a human rights-based approach.[118]

While the SSF Guidelines provide a comprehensive and valuable framework for addressing the concerns of small-scale fisheries, they are voluntary and lack the legally binding force of an international treaty. Their success, therefore, relies heavily on the goodwill and commitment of governments and other stakeholders. Nevertheless, their influence has been instrumental in shaping other international initiatives. For instance, the United Nations' Sustainable Development Goals ("SDGs"), agreed upon by all 193 member states, reflect the influence of the SSF Guidelines.

D. The 2030 Agenda for Sustainable Development

In September 2015, world leaders established the SDGs, a set of targets on a wide range of sustainability issues, to be reached by 2030.[119] Initiated by the United Nations General Assembly and in effect since January 1, 2016, the SDGs, although not legally binding, require that each U.N. member commits to them.[120] All of the SDGs,

114 *Id.* at 5.

115 *Id.*

116 *Id.*

117 *Id.* at 1.

118 *Id.*

119 G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development (Sept. 25, 2015) [hereinafter 2030 Agenda for Sustainable Development]; *The Sustainable Development Agenda*, U.N. SUSTAINABLE DEV. GOALS, https://www.un.org/sustainabledevelopment/development-agenda-retired/ [https://perma.cc/B9K5-Z652] (last visited Sept. 20, 2022).

120 *Id.*

but particularly numbers 1, 2, 5, 8, 12, 13, and 14, are relevant to global fishery sustainability.

The SDGs aim to promote sustainable and socially responsible production in the fisheries and aquaculture industries, critical sectors for achieving food security and various economic, social, and ecological goals.[121] SDG 14, aimed at conserving and sustainably using oceans, seas, and marine resources for sustainable development,[122] is particularly significant for fishing industries.[123] It affirms the importance of oceanic health in the global agenda, positioning it as a central facet of sustainable development.[124] The global community greatly benefits from the ocean and its ecosystems, which regulate climate, protect coastlines, provide food and jobs, offer recreational opportunities, and contribute to cultural well-being.[125] These benefits heavily depend on maintaining oceanic processes and biodiversity.[126]

SDG 14 outlines actionable objectives requiring international collaboration.[127] Meeting these targets would positively influence the success of related SDGs. The targets include curtailing marine pollution (14.1);[128] safeguarding marine ecosystems (14.2);[129] mitigating

121 STATE OF WORLD FISHERIES, *supra* note 10, at 127.

122 *See 14: Life Below Water*, U.N. DEP'T OF ECON. & SOC. AFFS., https://unstats.un.org/sdgs/report/2017/goal-14/ [https://perma.cc/DVY4-ULAY] (last visited Feb. 3, 2023).

123 STATE OF WORLD FISHERIES, *supra* note 10, at 127.

124 MARJO KRISTINA VIERROS, ASSESSMENT OF THE IMPACTS OF THE UNITED NATIONS OCEAN CONFERENCE VOLUNTARY COMMITMENTS: SUSTAINABLE DEVELOPMENT GOAL 14, at iii (2021), https://sdgs.un.org/sites/default/files/2022-01/DESA-Oceans-VCs.pdf [https://perma.cc/JN5G-LKUH].

125 *Id.*

126 *Id.*

127 *See* STATE OF WORLD FISHERIES, *supra* note 10, at 129.

128 *Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development: Targets and Indicators*, U.N. DEP'T ECON. & SOC. AFFS., [hereinafter *Targets and Indicators*], https://sdgs.un.org/goals/goal14#targets_and_indicators [https://perma.cc/SPY4-VLEV] (last visited Jan. 11, 2024). Marine debris is found in all of the oceans and poses a dangerous threat to the health of ecosystems and biodiversity, resulting in exorbitant economic costs through its effects on public health, tourism, fishing, and aquaculture. *SDG Indicator Metadata*, Target 14.1, § 4.a, https://unstats.un.org/sdgs/metadata/files/Metadata-14-01-01.pdf [https://perma.cc/5J29-L9LW] (July 7, 2022).

129 *Targets and Indicators*, *supra* note 128. The indicator for this target is the "proportion of national exclusive economic zones managed using ecosystem-based approaches." *Conserve and Sustainably Use the Oceans, Seas and Marine Resources*, OUR WORLD IN DATA (July 18, 2023), https://ourworldindata.org/sdgs/life-below-water [https://perma.cc/4KWU-5TRJ]. "Ecosystem-based approaches consider the connections within an ecosystem, focusing on the importance of ecological integrity, biodiversity, social and economic factors and overall ecosystem health." *Id.*

ocean acidification impacts (14.3);[130] regulating harvests and eliminating overfishing (14.4);[131] expanding marine protected areas (14.5);[132] banning subsidies contributing to overfishing (14.6);[133] augmenting the economic benefits to Small Island developing States and least developed countries (14.7);[134] improving ocean health and aiding developing countries by advancing scientific knowledge and transferring marine technology (14.a);[135] ensuring that small-scale fishers have access to both marine resources and market opportunities (14.b);[136] and improving the preservation and sustainable management of oceans and their resources by enforcing international law (14.c).[137]

The SDGs also aim to promote equitable and sustainable economic growth that provides adequate employment and minimizes

130 *Targets and Indicators*, *supra* note 128.

131 *Id.* The indicator for this target is the "proportion of fish stocks within biologically sustainable levels." *Conserve and Sustainably Use the Oceans, Seas and Marine Resources*, *supra* note 129. A fish stock is classified as biologically sustainable if its abundance is equal to or higher than the maximum sustainable yield ("MSY"). *Id.* If its abundance falls below the MSY, it is classified as biologically unsustainable. *Id.* The percentage of global fishery resources that are at biologically sustainable levels has decreased from 90% in 1974 to 71.2% in 2011, Maria Hadjimichael & Troels J. Hegland, *Really Sustainable? Inherent Risks of Eco-Labeling in Fisheries*, 174 FISHERIES RSCH. 129, 129 (2016), to 64.6% in 2019, *Sustainable Development Goals: Indicator 14.4.1 - Proportion of Fish Stocks Within Biologically Sustainable Levels*, FOOD & AGRIC. ORG. OF THE U.N., https://www.fao.org/sustainable-development-goals/indicators/1441/en/ [https://perma.cc/6AP4-VXQN] (last visited Jan. 29, 2023).

132 *Targets and Indicators*, *supra* note 128.

133 *Id.* In June 2022, World Trade Organization ("WTO") members adopted the Agreement on Fisheries Subsidies at the 12th Ministerial Conference. *Members Submitting Acceptance of Agreement on Fisheries Subsidies*, WORLD TRADE ORG., https://www.wto.org/english/tratop_e/rulesneg_e/fish_e/fish_acceptances_e.htm [https://perma.cc/N6AJ-LVE8] (last visited Feb. 17, 2024). This Agreement "marks a major step forward for ocean sustainability by prohibiting harmful subsidies, which are a key factor in the widespread depredation of the world's fish stocks." WORLD TRADE ORG., THE WTO AGREEMENT ON FISHERIES SUBSIDIES: WHAT IT DOES AND WHAT COMES NEXT, https://www.wto.org/english/tratop_e/rulesneg_e/fish_e/fish_factsheet_e.pdf [https://perma.cc/E79J-4YZK] (last visited Feb. 17, 2024). The Agreement stands out as a landmark success for its members, being the first to fully meet an SDG target (Target 14.6). *Agreement on Fisheries Subsidies*, WORLD TRADE ORG., https://www.wto.org/english/tratop_e/rulesneg_e/fish_e/fish_e.htm [https://perma.cc/7Z7C-TYAK] (last visited Feb. 17, 2024).

134 *Targets and Indicators*, *supra* note 128.

135 *Id.*

136 *Id.*

137 *Id.*

social and gender disparities.[138] The fishing and aquaculture industry presents numerous possibilities for promoting sustainable development and increasing income,[139] particularly in achieving SDG 1 (eradicating poverty in all forms)[140] and SDG 8 (promoting sustained, inclusive and sustainable economic growth with full, productive employment and decent work for all).[141] The fishing industry, encompassing harvesting, processing, and marketing, sustains approximately 250 million jobs globally, playing a vital role in livelihood maintenance, particularly in developing nations.[142]

SDG 2 aims to eradicate hunger, secure food access, improve nutrition, and foster sustainable agriculture.[143] As the global number of undernourished individuals has increased since 2014, the fisheries industry critically supports food security's four pillars: availability, access, utilization, and stability.[144] Fish serve as an affordable, nutritious source of protein, rich in essential micronutrients that are necessary for healthy diets.[145] Coastal communities and Indigenous peoples heavily rely on small-scale and subsistence fishing for sustenance.[146] Hence, diligent management, regulation, policies, practices, and technology in fisheries are indispensable to food security and maintenance of ethical and sustainable practices.[147]

The SDGs highlight the importance of social sustainability, nondiscrimination, gender equality, and inclusive growth for ensuring equitable benefits from natural resources.[148] The Goals particularly emphasize supporting fishing and aquaculture communities and

138 STATE OF WORLD FISHERIES, *supra* note 10, at 128.

139 *Id.*

140 *1: No Poverty*, U.N. DEP'T OF ECON. & SOC. AFFS., https://unstats.un.org/sdgs/report/2017/goal-01/ [https://perma.cc/36W5-6FZZ] (last visited Feb. 10, 2023).

141 *8: Decent Work and Economic Growth*, U.N. DEP'T OF ECON. & SOC. AFFS., https://unstats.un.org/sdgs/report/2017/goal-08/ [https://perma.cc/3F5E-WTQ5] (last visited Feb. 10, 2023).

142 *Id.*

143 *2: Zero Hunger*, U.N. DEP'T OF ECON. & SOC. AFFS., https://unstats.un.org/sdgs/report/2017/goal-02/ [https://perma.cc/WZK9-4NZC] (last visited Feb. 9, 2023).

144 An estimated 821 million people were undernourished in 2018. STATE OF WORLD FISHERIES, *supra* note 10, at 128.

145 *Id.*

146 *SSF Guidelines*, *supra* note 23; OUR SHARED SEAS, *supra* note 58; *Subsidies Promote Overfishing*, *supra* note 20.

147 *See* STATE OF WORLD FISHERIES, *supra* note 10, at 127.

148 *Id.* at 128.

processors, which can contribute to reducing social disparities.[149] SDG 5, aimed at achieving gender equality and empowering all women and girls,[150] reinforces the need to empower women in their dominant roles in the marketing and processing sectors of fisheries.[151]

SDGs 12 and 13 emphasize the need for sustainable natural resource use, advocating for sustainable food systems[152] and climate change mitigation.[153] While fisheries yield lower greenhouse gas emissions than many agricultural food systems, they still grapple with various environmental issues.[154] Environmental degradation caused by unsustainable fishing practices threatens natural aquatic systems that are vital to our future development and survival.[155] Hence, the link between economic growth and environmental damage must be broken, which requires improved natural resource efficiency, sustainable consumption, and sustainable production.[156] Climate change, which exacerbates social, economic, and political tensions, tends to have disproportionately adverse impacts on marginalized and vulnerable groups.[157] Innovative technologies can help reduce food loss and

149 *Id.*

150 *5: Gender Equality*, U.N. DEP'T OF ECON. & SOC. AFFS., https://unstats.un.org/sdgs/report/2017/goal-05/ [https://perma.cc/VYV4-UMA9] (last visited Feb. 10, 2023).

151 STATE OF WORLD FISHERIES, *supra* note 10, at 128.

152 *12: Responsible Consumption and Production*, U.N. DEP'T OF ECON. & SOC. AFFS., https://unstats.un.org/sdgs/report/2017/goal-12/ [https://perma.cc/B27D-N7AZ] (last visited Feb. 3, 2023).

153 *13: Climate Action*, U.N. DEP'T OF ECON. & SOC. AFFS., https://unstats.un.org/sdgs/report/2017/goal-13/ [https://perma.cc/A3NK-V9ZB] (last visited Feb. 3, 2023).

154 STATE OF WORLD FISHERIES, *supra* note 10, at 129.

155 *Goal 12: Ensure Sustainable Consumption and Production Patterns*, U.N. SUSTAINABLE DEV. GOALS [hereinafter *Goal 12*], https://www.un.org/sustainabledevelopment/sustainable-consumption-production/ [https://perma.cc/T388-YNYV] (last visited Nov. 25, 2022).

156 *Id.*

157 Robert Kiel, *The Looming Accelerant: The Growing Links Between Climate Change, Mass Atrocities, and Genocide*, STIMSON (July 11, 2019), https://www.stimson.org/2019/looming-accelerant-growing-links-between-climate-change-mass-atrocities-and-genocide/ [https://perma.cc/6KSY-NLV2]; *see also* Human Rights Council Res. 48/13, A/HRC/RES/48/13, ¶¶ 3, 9, 21 (Oct. 18, 2021) (stating that States have heightened procedural and substantive obligations to those in vulnerable situations); *id.* ¶ 39 (requiring States to have legal and institutional protections specifically for Indigenous peoples). Urgent action must be taken to combat climate change and its impacts to save lives, livelihoods, cultures, and communities. *Goal 13: Take Urgent Action to Combat Climate Change and Its Impacts*, U.N. SUSTAINABLE DEV. GOALS, https://www.un.org/sustainabledevelopment/climate-change/ [https://perma.cc/D7C3-8QJH] (last visited Nov. 23, 2022).

waste along the value chain, thereby enhancing resource use efficiency and decreasing extraction needs.[158] Efficient fisheries management, transportation improvements, and waste reduction strategies are essential to curtail post-harvest losses[159] and lessen the sector's environmental footprint.[160]

E. Regional Fisheries Management Organizations

Fishing activities beyond national jurisdiction, like those in coastal areas and EEZs, are regulated based on the national flag flown by the ship.[161] These activities can be managed by regional fisheries management organizations ("RFMOs") guided by international law.[162] These rules of international law focus on regulating the actions of fishers, but the flag State holds the authority to enforce them.[163] The flag State also has responsibilities to provide information about the fish caught and may have other duties to monitor, control, and surveil the fishing activities.[164]

Article 118 of the LOSC mandates that states collaborate in conserving and managing living resources in the high seas, including negotiating measures for resource conservation and potentially forming subregional or regional fisheries organizations.[165] RFMOs are international organizations formed by countries with fishing interests in specific areas, and they establish legally binding conservation and

158 STATE OF WORLD FISHERIES, *supra* note 10, at 129.

159 Post-harvest losses are "a reduction in quantity, or quality or monetary value of fish in the supply chain." ANSEN WARD & DAVIDE SIGNA, REDUCING POST-HARVEST FISH LOSSES FOR IMPROVED FOOD SECURITY 1 (2014), https://www.fao.org/3/bs226e/bs226e.pdf [https://perma.cc/H89W-H35X]. Globally, an estimated 10-12 million tons of fish—about 10% of total fisheries and aquaculture production—are lost annually due to factors like inadequate handling, lack of producer knowledge, poor infrastructure, and ineffective policies, with losses varying by fish species, fishing methods, and location, particularly in remote areas. *Id.*

160 STATE OF WORLD FISHERIES, *supra* note 10, at 129.

161 *See* JAMES ANDERSON, FRANK ASCHE, RICHARD BARNES, SIMON BUSH, BRAD GENTNER, CHARLES HUFFLETT, GARY LIBECAP, VISHWANIE MAHARAJ, LINDIE NELSON, WEZ NORRIS, GIANSANDRO PEROTTI, UWE TIETZE & KELLY WACHOWICZ, PRINCIPLES FOR FISHERIES MANAGEMENT IN AREAS BEYOND NATIONAL JURISDICTION—THE ESSENTIAL ROLE OF INCENTIVE-BASED APPROACHES 2 (2018), https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/3t3qqft15v_08818_WWF_WB_Report_GloTT_final.pdf [https://perma.cc/TNE3-369M].

162 *Id.*

163 *Id.*

164 *Id.*

165 LOSC, *supra* note 7, art. 118.

management measures for various types of fish, using tools like quotas and spatial restrictions.[166] RFMOs regulate the conservation and sustainable use of fish stocks in areas outside of national jurisdiction.[167] While RFMOs play a critical role in managing fisheries beyond national jurisdictions, a more comprehensive legal framework is needed to address the broader range of human activities impacting the high seas. The BBNJ Treaty, discussed in the following section, aims to fill these governance gaps.

F. Draft Agreement Under the UNCLOS on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction

The Draft Agreement Under the UNCLOS on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction ("BBNJ Treaty" or "Draft High Seas Treaty") further emphasizes the importance of biodiversity conservation in areas beyond national jurisdiction.[168] The treaty strives to ensure the sustainable use and preservation of marine biological diversity beyond national jurisdictions,[169] guided by the principles of the LOSC and enhanced international cooperation.[170]

166 *Oceans and Fisheries: Regional Fisheries Management Organisations (RFMOs)*, EUR. COMM'N, https://oceans-and-fisheries.ec.europa.eu/fisheries/international-agreements/regional-fisheries-management-organisations-rfmos_en [https://perma.cc/9R6U-5T3Q] (last visited Sept. 14, 2023).

167 PROELß, *supra* note 46, at 663.

168 On March 4, 2023, after nearly two decades of conversations, U.N. member countries finalized a text, already being referred to as the "High Seas Treaty" or "BBNJ Treaty," to ensure the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. *UN Delegates Reach Historic Agreement on Protecting Marine Biodiversity in International Waters*, U.N. NEWS (Mar. 5, 2023), https://news.un.org/en/story/2023/03/1134157 [https://perma.cc/8Z28-JCPB]; *see* Intergovernmental Conference on an International Legally Binding Instrument 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: Resumed Fifth Session, *Draft 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*, U.N. Doc. A/CONF.232/2023/4 (June 19, 2023) [hereinafter *Draft High Seas Treaty*].

169 *Draft High Seas Treaty*, *supra* note 168, art. 2. To date, a mere 1% of the high seas has been protected by any established protocol, and only 39% of the ocean is under the national jurisdiction of individual countries. Gemma Parkes, *Why the High Seas Treaty is a Breakthrough for the Ocean and the Planet*, WORLD ECON. F. (Mar. 6, 2023), https://www.weforum.org/agenda/2023/03/a-seamark-deal-for-the-global-ocean-why-the-high-seas-treaty-matters/ [https://perma.cc/DNM2-WZTY].

170 *Draft High Seas Treaty*, *supra* note 168, art. 2.

The draft of the BBNJ Treaty calls for legislative, administrative, or policy measures to ensure that traditional knowledge associated with marine genetic resources beyond national jurisdiction held by Indigenous peoples and local communities should only be accessed with their free, prior, and informed consent ("FPIC") or approval.[171] Indigenous peoples' right to FPIC is only explicitly enumerated three times in the draft treaty, and all three times "with respect to [their] relevant traditional knowledge."[172] However, in the Preamble, it is affirmed "that nothing in this Agreement shall be construed as diminishing or extinguishing the existing rights of Indigenous Peoples, including as set out in the United Nations Declaration on the Rights of Indigenous Peoples."[173]

FPIC obligations in the BBNJ Treaty are only applied to the access of traditional knowledge but not to other instances where Indigenous peoples' rights, resources, or livelihoods are affected, suggesting that their knowledge is being valued primarily for the benefits it provides to external actors, rather than recognizing and respecting the holistic rights and interests of the Indigenous peoples themselves.[174] To avoid an extractivist[175] approach and ensure a more comprehensive and equitable human rights-based management framework, the BBNJ Treaty should expand the application of FPIC to other relevant situations, such as the use of marine resources within Indigenous peoples' territories and decision-making processes that directly affect their livelihoods and cultural practices. Expanding FPIC requirements would help ensure that Indigenous peoples are not

171 *See id.* art. 10 *bis*. FPIC empowers Indigenous communities to have a say in whether projects affecting their territories can proceed. *See Indigenous Peoples: Free, Prior and Informed Consent*, FOOD & AGRIC. ORG. OF THE U.N., https://www.fao.org/indigenous-peoples/our-pillars/fpic/en/ [https://perma.cc/86AG-6BMQ] (last visited Sept. 14, 2023). It also allows Indigenous peoples to be actively involved in guiding how these projects are set up, carried out, and assessed. *Id.*

172 *See Draft High Seas Treaty*, *supra* note 168, arts. 10 *bis*, 46(1)(b), annex II(a)(iii).

173 *Id.* at Preamble; *see infra* Part III(G)(1).

174 Note that the definition of Indigenous knowledge is evolving, moving beyond its perceived usefulness for Western science and its reduction to data points within Western scientific analysis. Andrea J. Reid, Lauren E. Eckert, John-Francis Lane, Nathan Young, Scott G. Hinch, Chris T. Darimont, Steven J. Cooke, Natalie C. Ban & Albert Marshall, *"Two-Eyed Seeing": An Indigenous Framework to Transform Fisheries Research and Management*, 22 FISH & FISHERIES 243, 245 (2021).

175 An extractivist approach typically focuses on the extraction of resources, knowledge, or value from communities, often with little consideration for the long-term well-being and rights of those communities.

marginalized or exploited and that their rights to self-determination, resource management, and participation in decisions that affect them are protected.

States should not be able to derogate from providing participatory mechanisms for Indigenous peoples.[176] When Indigenous peoples may be affected by measures or when impact assessments are conducted, States should be required to consult Indigenous peoples, with the objective to obtain their free, prior, and informed consent.

G. Treaties, Conventions, and Declarations on the Rights of Indigenous Peoples

1. United Nations Declaration on the Rights of Indigenous Peoples

FPIC rights are a manifestation of the right to self-determination enshrined in the United Nations Declaration on the Rights of Indigenous Peoples ("UNDRIP"),[177] adopted by the U.N. General Assembly in 2007.[178] Although UNDRIP is not a legally binding instrument,[179] Article 32 requires obtaining free and informed consent prior to approving any project that could impact Indigenous lands, territories, or resources, especially concerning the development, utilization, or exploitation of minerals, water, and other resources.[180] Article 26 recognizes Indigenous peoples' rights to own, use, develop, and control lands and resources they possess by traditional ownership.[181]

176 "Non-derogable human rights" are absolute rights that may not be "taken away or compromised." *The United Nations Terminology Database*, DEP'T FOR GEN. ASSEMBLY & CONF. MGMT., https://unterm.un.org/unterm2/en/view/d41e72ac-62a9-4e5a-b9aa-28459f21659b [https://perma.cc/6H4L-6TJT] (last visited Mar. 11, 2023).

177 G.A. Res. 61/295, United Nations Declaration on the Rights of Indigenous Peoples (Sept. 13, 2007) [hereinafter UNDRIP].

178 Four countries voted against the Declaration: Australia, Canada, New Zealand, and the United States. ROBERT CHARLES G. CAPISTRANO, INDIGENOUS PEOPLES, THEIR LIVELIHOODS AND FISHERY RIGHTS IN CANADA AND THE PHILIPPINES: PARADOXES, PERSPECTIVES AND LESSONS LEARNED 11 (2010), https://www.un.org/depts/los/nippon/unnff_programme_home/fellows_pages/fellows_papers/capistrano_0910_philippines.pdf [https://perma.cc/CT5Z-S2ZP].

179 While just "soft" international law, UNDRIP acknowledges potential international norms and the ongoing evolution of human rights standards related to indigenous peoples. Megan Davis, *Indigenous Struggles in Standard-Setting: The United Nations Declaration on the Rights of Indigenous Peoples*, 9 MELB. J. INT'L L. 439, 465 (2008).

180 UNDRIP, *supra* note 177, art. 32(2).

181 *Id.* art. 26(2).

Although the final version of Article 26 does not explicitly mention "seas"—an element present in an unadopted draft version of UNDRIP[182]—it still underscores the fundamental rights of Indigenous peoples concerning their traditional lands and resources.[183]

2. International Labor Organization Convention Number 169

The Convention concerning Indigenous and Tribal Peoples in Independent Countries ("ILO Convention No. 169")[184] stipulates that consultation of potentially affected Indigenous peoples is required before private or public entities explore or exploit resources[185] and mandates consultation with Indigenous communities prior to any transfers of Indigenous land to entities outside of the Indigenous community.[186] The Committee of Experts on the Application of Conventions and Recommendations ("CEACR") further expounds on this, asserting Indigenous peoples' right to determine their development priorities through active participation in decision-making processes, especially

182 U.N. Sub-Commission on Prevention of Discrimination and Protection of Minorities, *Draft United Nations Declaration on the Rights of Indigenous Peoples*, U.N. Docs. E/CN.4/1995/2, E.CN.4/Sub.2/1994/56 (Oct. 28, 1994), at 111-12, art. 26 (providing "Indigenous peoples have the right to own, develop, control and use the lands and territories, including the total environment of the lands, air, waters, coastal seas, sea-ice, flora, fauna and other resources which they have traditionally owned or otherwise occupied or used. This includes the right to the full recognition of their laws, traditions and customs, land-tenure systems and institutions for the development and management of resources, and the right to effective measures by States to prevent any interference with, alienation of or encroachment upon these rights").

183 CAPISTRANO, *supra* note 178, at 15.

184 International Labor Organisation (ILO), *Convention Concerning Indigenous and Tribal Peoples in Independent Countries* (ILO Doc. 169), *adopted* June 27, 1989, *entered into force* Sept. 5, 1991, 28 I.L.M. 1382 [hereinafter ILO Convention No. 169].

185 *Id.* art. 15(2).

186 *Id.* art. 17(2).

concerning development models and priorities.[187] The CEACR lacks an enforcement mechanism for its recommendations, however.[188]

Both the ILO Convention No. 169 and UNDRIP recognize the rights of Indigenous peoples, including in the context of fisheries, which had previously been largely overlooked.[189] However, gaps remain in the practical implementation of these rights, including FPIC obligations, and in their integration into mainstream fisheries management frameworks.

3. Convention on Biological Diversity

The Convention on Biological Diversity ("CBD"), effective since December 29, 1993,[190] is an international treaty designed to conserve biodiversity, promote sustainable utilization of its components, and ensure equitable benefits from genetic resource use.[191] With 196 participating countries,[192] the CBD seeks to mitigate threats to biodiversity, including climate change, through scientific evaluations; tool development; incentives; processes; technology transfer; and engagement with stakeholders like Indigenous peoples and local communities, youth, women, NGOs, sub-national entities, and corporate actors.[193] The active contributions of RFMOs[194] and the CBD brought

187 Int'l Labour Conf., 98th Session, Rep. of the Committee of Experts on the Application of Conventions and Recommendations 672 (2009) [hereinafter CEACR], https://www.ilo.org/wcmsp5/groups/public/@ed_norm/@relconf/documents/meetingdocument/wcms_103484.pdf [https://perma.cc/FGG2-JKAU]. The ILO Convention No. 169 "establishes that consultations must be undertaken in good faith and have the goal of consent." Tara Ward, *The Right to Free, Prior, and Informed Consent: Indigenous Peoples' Participation Rights Within International Law*, 10 N.W. J. INT'L HUM. RTS. 54, 65 (2011).

188 Shin Imai, Ladan Mehranvar & Jennifer Sander, *Breaching Indigenous Law: Canadian Mining in Guatemala*, 6 INDIGENOUS L.J. 101, 130 (2007). Additionally, the CEACR's communications mechanism is not a judicial remedy. Ward, *supra* note 187, at 61.

189 *See* ILO Convention No. 169, *supra* note 184; UNDRIP, *supra* note 177, art. 26.

190 Convention on Biological Diversity, *adopted* May 6, 1992, 1760 U.N.T.S. 79 (entered into force Dec. 29, 1993).

191 Conference of the Parties to the Convention on Biological Diversity, *Kunming-Montreal Global Biodiversity Framework*, U.N. Doc. CBD/COP/15/L25. ¶ 26 (Dec. 18, 2022) [hereinafter *Kunming-Montreal Framework*].

192 *List of Parties*, CONVENTION ON BIOLOGICAL DIVERSITY, https://www.cbd.int/information/parties.shtml [https://perma.cc/3EDM-CMV7] (last visited Mar. 11, 2023).

193 *See generally Kunming-Montreal Framework*, *supra* note 191.

194 *See supra* Part III(E).

much-needed regional and biodiversity perspectives to the international fisheries management framework, contributing to a more holistic approach. The CBD recognizes the essential role of traditional knowledge held by Indigenous peoples in conserving and sustainably using biological resources.[195] This recognition positions Indigenous peoples and their traditional knowledge as fundamental in achieving the CBD's goals.[196]

IV. MANAGEMENT AND REGULATION OF FISHERIES CONSIDERING THE UNIQUE NEEDS AND CHALLENGES OF SMALL-SCALE AND INDIGENOUS FISHERS

A. Socioeconomic and Ecological Impacts on Small-Scale Fisheries

Rooted in local communities, traditions, and values, small-scale fisheries are vital for local economies because they provide food, nutrition security, employment, and social support.[197] These small-scale fishers are often self-employed and typically supply fish for personal or community consumption, with women playing a significant role, particularly in post-harvest and seafood processing.[198] Historically, policies and management predominantly focused on large industrial fleets, downplaying small-scale fisheries' importance.[199] Addressing the needs and challenges of small-scale fisheries is vital for full human rights realization for millions of coastal families and communities, however.[200]

Monitoring both small- and large-scale fisheries is essential for sustainable fishing regulation. Lack of proper oversight can lead to distinct environmental hazards.[201] While large-scale industrial fishing has a greater capacity for rapid capture, responsible stock management

195 *The Convention on Biological Diversity and Indigenous Peoples*, CULTURAL SURVIVAL (Mar. 8, 2022), https://www.culturalsurvival.org/news/convention-biological-diversity-and-indigenous-peoples [https://perma.cc/SMJ4-UPPG].

196 Because of this recognition, it can be said that all the CBD's articles are relevant to Indigenous peoples. *Id.* "Nevertheless, the Convention specifically highlights Indigenous Peoples in the Preamble, Article 8(j): Traditional Knowledge, Article 10(c): Customary Sustainable Use of Biodiversity, Article 17: Exchange of Information including its Repatriation, and Article 18(4): Technical and Scientific Cooperation including Indigenous and Traditional Technologies." *Id.*

197 *SSF Guidelines*, *supra* note 23.

198 *Id.* See also *supra* note 64 for sources regarding women's role in fisheries.

199 *Policy Support and Governance Gateway*, *supra* note 112.

200 *Id.*

201 Atcheson, *supra* note 20.

and voluntary practice limitations can often make the industry more environmentally responsible.[202] Conversely, sustainable stock management for small-scale fisheries requires coordination among multiple fisheries.[203] In developing nations, small-scale operations often lack adequate resources for data collection, expert guidance, and access to advanced technologies.[204] Small-scale fisheries can be more efficient than their larger counterparts because almost all subsistence fisheries' catches are consumed, whereas approximately 20% of large-scale fleet catches go to waste due to unwanted bycatch or poor quality.[205] Thus, although large-scale fisheries land a higher overall catch, a greater proportion of small-scale fisheries' catches are actually consumed.[206]

Environmental variability and climate change particularly threaten small-scale fisheries.[207] Small-scale operations depend on marine resources that are vulnerable to environmental fluctuations, ecosystem disturbances, resource depletion, and extreme weather.[208] Additionally, large-scale fisheries can adversely affect coastal communities and small-scale fisheries by exacerbating environmental degradation and biodiversity loss. Large-scale fisheries' pollution, ghost gear, lower biodiversity, and overexploitation of shared fishing waters can negatively impact community health, food sources, and employment.[209]

202 *Id.*

203 *Id.*

204 *Id.*

205 Hendriks, *supra* note 57, at 651. Discard rates can be as high as 70-90% for trawl fisheries. Rep. on Food Security and Nutrition, *supra* note 57, at 14, 41.

206 Hendriks, *supra* note 57, at 651.

207 *See Vulnerability of Small-Scale Fishing Communities: Global Reflections on Lived Experiences*, TOO BIG TO IGNORE (May 14, 2020), http://toobigtoignore.net/vulnerability-of-small-scale-fishing-communities/ [https://perma.cc/HC9G-HGUB].

208 These environmental phenomena are a common concern in several locations worldwide. *Id.* For example, in Peru, El Niño–Southern Oscillation is responsible for altering the distribution and abundance patterns of species such as the Peruvian anchoveta and Peruvian hake, placing a financial burden on small-scale fishers due to increased travel time and fuel consumption. *Id.* In Myanmar, small-scale fishers face a variety of vulnerabilities, such as flooding, storms, high winds, storm surges, and hypoxia in coastal areas that have a detrimental effect on fisheries. *Id.* Coastal erosion frequently destroys the settlements of small-scale fishers in Ghana, Guinea-Bissau, Vanuatu, and Colombia. *Id.*

209 For example, ghost gear poses a significant threat because it has detrimental impacts on fisheries, non-target species (via entanglement of wildlife), habitats, navigational safety, and coastal tourism. KATE KOOKA, ANDREW BROWN & EMANUELA

Other forces beyond environmental factors and the effects of large-scale fisheries can also negatively impact small-scale fisheries. Coastal community fishers feel pressure from both the land and the sea that puts them in a vulnerable position to make a livable income.[210] This situation, known as "coastal squeeze," is intensified by factors like population growth, marine reserves, climate change, overfishing, oil exploration and drilling, conflicts over tourism, and competition for resources, leading to what scholars term "creeping enclosures" that progressively limit access and compound these challenges.[211]

While small-scale fisheries are considerably vulnerable to environmental harms, it is important to note that small-scale fisheries also *contribute* to environmental harms and overfishing.[212] Fishers in tropical developing nations are often impoverished and have limited work alternatives, meaning that once they start their fishing career, they may have no choice but to continue, even if fish stocks sharply decline.[213] "Malthusian overfishing" happens when impoverished fishers, who have no other options for work, experience declining catches and resort to destructive fishing practices in an attempt to sustain their livelihoods.[214] This situation is further exacerbated by the

MIGLIACCO, TOWARDS G7 ACTION TO COMBAT GHOST FISHING GEAR: OECD ENVIRONMENT POLICY PAPER NO. 25 (2021), http://www.g7.utoronto.ca/environment/2021-policy-paper-ghost-gear-report.pdf [https://perma.cc/35F3-RR36]. Due to its prevalence, ghost fishing gear is a significant source of marine pollution, which exacerbates the environmental and health risks associated with plastic pollution. *Id.*

210 Andrews et al., *supra* note 75, at 1-2.

211 *Id.* at 2 (citing Grant Murray, Teresa Johnson, Bonnie J. McCay, Mike Danko, Kevin St. Martin & Satsuki Takahashi, *Creeping Enclosure, Cumulative Effects and the Marine Commons of New Jersey*, 4 INT'L J. COMMONS 367, 367 (2010)).

212 *See, e.g.*, Dan A. Exton, Gabby N. Ahmadia, Leanne C. Cullen-Unsworth, Jamaluddin Jompa, Duncan May, Joel Rice, Paul W. Simonin, Richard K.F. Unsworth & David J. Smith, *Artisanal Fish Fences Pose Broad and Unexpected Threats to the Tropical Coastal Seascape*, 10 NATURE COMMC'NS 1, 7 (2019) (finding that artisanal fish fences "disrupt vital ecological connectivity, remove high quantities of juveniles, exploit hundreds of species, lack traditional economic and social barriers to overfishing and create social conflict among wider stakeholder groups, whilst only benefitting a minority of the stakeholder community").

213 Daniel Pauly, *From Growth to Malthusian Overfishing: Stages of Fisheries Resources Misuse*, 3 SPC TRADITIONAL MARINE RES. MGMT. & KNOWLEDGE INFO. BULL. 7, 10 (1994).

214 *Id.* at 10. Daniel Pauly coined the phrase "Malthusian overfishing" based on the principles of Thomas Robert Malthus. *Id.* Malthus contended that the production of food can only increase at a fixed rate, whereas the human population grows at an increasing rate. *Id.* at 11 (citing generally T.R. MALTHUS, AN ESSAY ON THE PRINCIPLE OF POPULATION: OR, A VIEW OF ITS PAST AND PRESENT EFFECTS ON HUMAN HAPPINESS (1798)). As a result, in the long term, the production of food will be inadequate for the growing human population. *Id.*

fact that the gear and techniques used by small-scale fisheries are often promoted by fisheries management organizations because of the widely held misconception that this gear has a smaller environmental impact than more modern gear and techniques.[215]

B. Indigenous Worldviews in Managing Fisheries

Indigenous culture and way of life should carry the same weight as economic considerations and should be duly built into the decision-making process.[216] Although social objectives have been largely undervalued in natural resource management, global businesses have increasingly recognized their importance, particularly as businesses acknowledge the need for a social license to operate.[217] Incorporating Indigenous perspectives and ways of life into the decision-making process is crucial. A broader, more inclusive scientific approach that encompasses fisheries, conservation, and multiple uses, is essential to guide complex decision-making.[218]

In the face of escalating human-induced threats to global biodiversity, fostering resilience in social-ecological systems necessitates acknowledging and leveraging a diversity of human-nature relationships and stewardship practices.[219] Indigenous communities, with their rich ecological knowledge and proven stewardship practices, provide a promising model for effective and socially equitable

215 For an in-depth analysis of the environmental impact of small-scale fisheries over several decades and how changes in fishing gear and policies have contributed to this, see Jennifer C. Selgrath, Sarah E. Gergel & Amanda C. J. Vincent, *Shifting Gears: Diversification, Intensification, and Effort Increases in Small-Scale Fisheries (1950-2010)*, 13 PLoS ONE, Mar. 14, 2018 (examining fishing gear dynamics over 60 years (1950-2010) in a Philippine coral reef ecosystem).

216 Éva Elizabeth Plagányi, Ingrid van Putten, Trevor Hutton, Roy A. Deng, Darren Dennis, Sean Pascoe, Tim Skewes & Robert A. Campbell, *Integrating Indigenous Livelihood and Lifestyle Objectives in Managing a Natural Resource*, 110 PROC. NAT'L ACAD. SCIS. U.S. 3639, 3639 (2013).

217 *Id.* at 3641.

218 *Id.*

219 William I. Atlas, Natalie C. Ban, Jonathan W. Moore, Adrian M. Tuohy, Spencer Greening, Andrea J. Reid, Nicole Morven, Elroy White, William G. Housty, Jess A. Housty, Christina N. Service, Larry Greba, Sam Harrison, Ciara Sharpe, Katherine I. R. Butts, William M. Shepert, Elissa Sweeney-Bergen, Donna Macintyre, Matthew R. Sloat & Katrina Connors, *Indigenous Systems of Management for Culturally and Ecologically Resilient Pacific Salmon (*Oncorhynchus *spp.) Fisheries*, 71 BIOSCIENCE 186, 186-87 (2021).

conservation and resource management.[220] Their historical and current involvement in managing vast ecologically intact landscapes and biodiversity-rich areas emphasizes the potential of their capacity for sustainable resource management, as evidenced by several conservation and species recovery efforts.[221]

In the context of fisheries, the value of Indigenous worldviews becomes particularly striking. For instance, Pacific salmon have been sustainably harvested by Indigenous communities spanning from California to Kamchatka and Northern Japan and have been a cornerstone of their social-ecological systems for over 10,000 years.[222] These communities have traditionally developed robust resource management systems rooted in their cultural and spiritual beliefs, effectively preventing overharvesting and population collapse.[223] These resource management systems, despite being disrupted by colonial interventions in the mid-nineteenth century, hold lessons that are highly relevant to sustainable and resilient resource management today.[224]

Given modern fisheries' struggles to provide sustainable social, economic, and ecological benefits, revitalizing Indigenous management systems could contribute significantly to restoring the productivity and resilience of aquatic ecosystems and fisheries.[225] The resurgence of Indigenous culture and knowledge, their increasingly responsible role in fisheries and natural resources management, and

220 There is a growing acknowledgment that Indigenous knowledge and management systems can be valuable contributors to the restoration and resilience of aquatic ecosystems and fisheries. *Id.* at 187.

221 Indigenous communities manage over 40% of Earth's ecologically pristine landscapes, maintaining biodiversity levels akin to parks and protected areas, and their knowledge and jurisdiction have furthered the conservation of various species, such as grizzly bears and Dungeness crabs. *Id.* at 186. As examples, incorporating Indigenous knowledge systems into fisheries research and management has been found to improve selectivity and sustainability of fisheries, enhance forecasting systems for sea conditions, reverse declines in exploited species, provide otherwise unobtainable ecological information, and crucially contribute to the improvement and collective adherence to fisheries policy. Reid et al., *supra* note 174, at 253.

222 Atlas et al., *supra* note 219, at 186.

223 *Id.* at 187, 199.

224 Distinct from conventional resource management systems that typically prioritize short-term profit, Indigenous management approaches, rooted in cultural values and traditional knowledge, emphasize multigenerational sustenance and reciprocity, along with an intimate recognition of the human-ecosystem connection; this is evident in the Pacific Northwest tribes' robust governance structures that protect nonhuman life and in their uniquely tailored stewardship practices, grounded in their rich, geography-specific experiences over millennia. *Id.* at 189-90.

225 *See id.* at 187 (in the context of salmon fisheries in North America).

their unwavering commitment to stewardship of their homelands offer hope for the future.[226]

Therefore, acknowledging the presence and significance of Indigenous worldviews and knowledge systems is crucial for human rights-based fisheries management.[227] Embracing the wisdom of Indigenous resource management practices, especially in the fisheries sector, can foster an equitable and sustainable future.[228] The challenge is in uplifting Indigenous communities, respecting their wisdom, and establishing co-governance models that duly honor their knowledge and rights, rather than treating them as mere data points in a Western framework.[229]

V. HUMAN RIGHTS-BASED FRAMEWORK FOR SUSTAINABLE FISHERIES

While international law and theory has made substantial strides toward a more sustainable and equitable fisheries management framework, challenges remain, particularly with addressing human rights concerns and integrating Indigenous rights and FPIC obligations.[230] This Note's proposed human rights-based approach to fisheries management seeks to address these gaps, building on the foundations laid by existing international instruments. Considering global reliance on marine resources, the sustainable management and conservation of these resources should be recognized as a shared concern and responsibility at the international level.[231] A framework for sustainable fisheries management that addresses social, economic, and ecological factors needs to embrace a human rights-based approach. The following components are essential to ensure the effectiveness and feasibility of such a framework:

- the establishment of governance and regulatory structures, including the formation of international, regional, and national bodies responsible for implementing and enforcing the framework;

226 *Id.*; *see also* Reid et al., *supra* note 174, at 245, 253.
227 Atlas et al., *supra* note 219, at 186.
228 *Id.* at 187; Reid et al., *supra* note 174, at 245.
229 *See* Atlas et al., *supra* note 219, at 187, 198.
230 *See generally supra* Part III(G).
231 PROELß, *supra* note 46, at 658.

- the development of a comprehensive data, monitoring, and surveillance system to track and assess the impact of fishing activities on both human rights and the environment;
- the implementation of measures to ensure sustainable fishing practices, including quota systems, gear restrictions, and sustainable fishing incentives;
- the sunsetting of unsustainable fishing practices, with different timetables for developed and developing countries;
- the limitation or restriction of capacity-enhancing subsidies and other economic incentives that are detrimental to small-scale fishers and Indigenous peoples and the implementation of beneficial subsidies, including fisheries management programs and service subsidies;
- the inclusion of provisions to address the unequal distribution of benefits and power in the fishing industry, particularly in relation to small-scale fisheries, including measures to enhance their capacity to participate in decision-making and benefit from the use of their resources;
- the establishment of a dispute resolution mechanism to resolve conflicts between different actors in the fishing industry, including governments, large-scale fishing operations, and local communities;
- the promotion of cooperation and coordination between different countries, regions, and actors in the fishing industry, with a view to achieving sustainable and equitable use of global fishery resources; and
- regular review and update to reflect new information, emerging trends, and changing conditions in the fishing industry to promote transparency, accountability, and participation.

A. A Human Rights-Based Approach: Legal Recognition of Human Rights

A human rights-based approach in fisheries management that ensures the health of marine environments and upholds the rights of local coastal communities, small-scale fishers, Indigenous peoples, and other stakeholders is grounded in human rights recognition, protection, and fulfillment and principles of participation, accountability, non-discrimination, equality, empowerment, and rule of law.[232] This

232 *See, e.g.*, Smith et al., *supra* note 21, at 54.

commitment to uphold human rights permeates every aspect of the framework.[233]

The proposed framework necessitates an explicit acknowledgment and safeguarding of the human rights of all fishery stakeholders in both national and international laws, policies, and regulations,[234] in alignment with international human rights documents like the International Covenant on Economic, Social, and Cultural Rights ("ICESCR")[235] and the UNDRIP.[236] To ensure a tangible impact on affected stakeholders, this legal recognition of human rights must be action-oriented, translating into effective enforcement mechanisms and practices that safeguard and promote the rights of these stakeholders in the fisheries sector.

Indigenous worldviews provide unique and invaluable outlooks towards alternative legal strategies for safeguarding Earth's ecosystems. [237] While the collaborative development of legal structures considering these worldviews is challenging due to their divergence from conventional Western, Eurocentric, and anthropocentric views, it is critical for lawyers, politicians, academics, and stakeholders to be receptive to these distinct legal frameworks that prioritize the preservation of Earth's systems.[238]

B. Establishing Clear and Effective Governance and Regulatory

233 This framework emphasizes preserving the sustainability of resources and enhancing the ability of communities that rely on them to withstand challenges through an adaptive management strategy that draws significantly on community involvement and methods of the people who use the resources. Rep. of the APFIC/FAO Regional Consultative Workshop, *supra* note 26, at 9-12.

234 *See, e.g.*, FOOD AND AGRIC. ORG. OF THE U.N., A POLICY AND LEGAL DIAGNOSTIC TOOL FOR SUSTAINABLE SMALL-SCALE FISHERIES: IN SUPPORT OF THE IMPLEMENTATION OF THE *VOLUNTARY GUIDELINES FOR SECURING SUSTAINABLE SMALL-SCALE FISHERIES IN THE CONTEXT OF FOOD SECURITY AND POVERTY ERADICATION*, at 4 (2022), https://www.fao.org/3/cb8234en/cb8234en.pdf [https://perma.cc/27VA-7484].

235 International Covenant on Economic, Social and Cultural Rights, Dec. 16, 1966, 993 U.N.T.S. 3.

236 UNDRIP, *supra* note 177.

237 Paola Villavicencio Calzadilla & Louis J. Kotzé, *Living in Harmony with Nature? A Critical Appraisal of the Rights of Mother Earth in Bolivia*, 7 TRANSNAT'L ENV'T L. 397, 424 (2018).

238 *Id.*; *see also* Louis J. Kotzé, Rakhyun E. Kim, Catherine Blanchard, Joshua C. Gellers, Cameron Holley, Marie Petersmann, Harro van Asselt, Frank Biermann & Margot Hurlbert, *Earth System Law: Exploring New Frontiers in Legal Science*, 11 EARTH SYS. GOVERNANCE, Jan. 2022, at 1-2.

Infrastructure

Establishing well-defined governance and regulatory frameworks that align with existing international, regional, and national bodies is necessary to effectively implement and enforce fisheries management and regulations.[239] Governments should focus on creating environments that support and delegate power to local stakeholders.[240] With such regulations in place, the global fishing industry can become more transparent, which will promote better governance, and curb the harmful effects of illegal, unreported, and unregulated ("IUU") fishing on coastal communities.[241]

Relying on a single regulatory instrument, like legislation or a treaty, might not yield the desired outcomes due to the inherent strengths and weaknesses of each and their varying effectiveness in different situations.[242] Combining different regulatory instruments can counterbalance the limitations of each individual instrument and enable targeted action on diverse problem areas and stakeholder groups.[243] For instance, while international agreements can establish the guiding framework and principles, state-specific regulations can enact viable enforcement structures and financial mechanisms can fund the implementation efforts.[244] This multifaceted strategy paves the way for a more thorough and potent regulatory approach.

Effective interventions hinge on leveraging a diverse array of tools and methods.[245] This broad toolkit should span international and transnational legal frameworks like treaties, national regulations, ownership or rights-based measures, contracts, market-oriented solutions,

239 *See* 1995 CODE OF CONDUCT, *supra* note 8, art. 7.1.9 ("States and subregional or regional fisheries management organizations and arrangements should ensure transparency in the mechanisms for fisheries management and in the related decision-making process.").

240 Rep. of the APFIC/FAO Regional Consultative Workshop, *supra* note 26, at 10.

241 In coastal seas and EEZs, whether fishing is limited to a sustainable level and whether appropriate regulations are enforced depends largely on the national regulations of the coastal State. PROELß, *supra* note 46, at 659. Sometimes the short-term economic interests of the coastal State stand in the way, but more often there is a lack of appropriate administrative structures for monitoring, which causes considerable pressure on fish stocks from IUU fishing. *Id.*

242 ANDERSON ET AL., *supra* note 161, at 2.

243 *See id.*

244 *See, e.g.*, 2030 Agenda for Sustainable Development, *supra* note 119, ¶ 39.

245 ANDERSON ET AL., *supra* note 161, at 3.

informal techniques, and financial instruments.[246] Each tool should be designed to function at different geographic scales and engage a diverse range of stakeholders, from States to individuals, taking into consideration the unique aspects of the resource or ecosystem being targeted.[247]

Acknowledging the significance of traditional fishing for subsistence is imperative for a rights-based approach.[248] Integrating this recognition legitimizes laws and regulations by fortifying community support from subsistence and small-scale fishers.[249] To address stakeholder conflicts, regulatory conservation efforts must acknowledge the rights of all relevant actors and recognize potential conflicts among rights-holders, promoting a proactive approach to sustainability rather than a reactive one.[250]

C. Implementing Effective Data, Monitoring, and Surveillance Systems

An essential aspect of this framework involves effective monitoring, control, and surveillance systems, which will ensure compliance with international regulations, and prevent IUU fishing. A standardized fishery data model should be prioritized, which, by streamlining data processing and analysis, allows scientists and managers to readily access contributions from the global scientific community.[251] Optimizing fishery performance in terms of seafood yield, profits, livelihoods, and biodiversity conservation will necessitate the

246 *Id.*

247 *Id.*

248 Gina Zheng, *Human Rights for Conservation: A Rights-Based Approach to Fisheries Governance*, 43 ALT. L.J. 55, 56 (2018).

249 For example, a significant aspect of Fiji's Fisheries Act 1942 is that it lacks customary fishing regulations. *Id.* According to the Act, fisherfolk who fish in their traditional fishing grounds, known as *iQoliqoli*, are not required to have licenses or permits when fishing for trade or business purposes using a line or a spear from the shore, or when fishing for non-commercial purposes using any fishing method. *Id.* This recognition of customary fishing for subsistence rights endorses a rights-based approach and helps to legitimize the law by garnering community support. *Id.* However, with 407 *iQoliqoli* areas and continuous poaching issues among customary communities, the broad licensing regulations in the law raise concerns about sustainability. *Id.*

250 *Id.* at 56-57; *see also Kunming-Montreal Framework*, *supra* note 191, at 9-10 (Targets 5 and 9).

251 Thomas R. Carruthers & Adrian R. Hordyk, *The Data-Limited Methods Toolkit (DLMtool): An R Package for Informing Management of Data-Limited Populations*, 9 METHODS ECOLOGY & EVOLUTION 2388, 2394 (2018).

monitoring, scientific assessment, and management of more fisheries based on data and science.[252] Unfortunately, the vast majority of the world's fisheries are not monitored or managed in this manner.[253]

Current fisheries' regulatory measures like quotas, catch limits, and management plans often prioritize the medium-term maximization of fish catches.[254] This orientation towards short-term or medium-term economic benefits can deplete the fish stock and degrade the environment.[255] Therefore, it is imperative to establish systems that monitor the size and activity of fishing fleets, ensuring their capacity aligns with sustainable fishing levels, especially in light of varying economic conditions that can impact the fishing industry.[256]

The regulatory focus must pivot to a more comprehensive and holistic approach that encapsulates social and ecosystem-based considerations.[257] This shift will entail the consideration of factors beyond mere yield maximization. It calls for an emphasis on the health of the ecosystem, long-term durability of the fishery, and social implications for coastal communities. A comprehensive, balanced approach can potentially foster a more sustainable and equitable fishing industry. More robust monitoring and data collection to better understand the state of the ecosystem can help achieve this shift toward equity and sustainability.[258] This effort will also involve the employment of more precautionary and adaptive management approaches that recognize the scientific uncertainty inherent in fisheries data.[259]

---

252 ROD FUJITA, CHRISTOPHER CUSACK, RACHEL KARASIK, HELEN TAKADE-HEUMACHER & COLLEEN BAKER, TECHNOLOGIES FOR IMPROVING FISHERIES MONITORING 5 (2018).

253 *Id.*

254 J. SAMUEL BARKIN & ELIZABETH R. DESOMBRE, SAVING GLOBAL FISHERIES: REDUCING FISHING CAPACITY TO PROMOTE SUSTAINABILITY 153 (2013).

255 *See, e.g.*, Shijie Zhou, Anthony D. M. Smith, André E. Punt, Anthony J. Richardson, Mark Gibbs, Elizabeth A. Fulton, Sean Pascoe, Catherine Bulman, Peter Bayliss & Keith Sainsbury, *Ecosystem-Based Fisheries Management Requires a Change to the Selective Fishing Philosophy*, 107 PROC. NAT'L ACAD. SCIS. 9485, 9486 (2010) ("Fishers intentionally target particular species and specific components of populations during certain times of the year in selected areas to maximize short term catch rates and profitability.").

256 *See* 1995 CODE OF CONDUCT, *supra* note 8, art. 7.6.3.

257 Zhou et al., *supra* note 255, at 9485.

258 Tracy Cooper, *Picture This: Promoting Sustainable Fisheries Through Eco-Labeling and Product Certification*, 10 OCEAN & COASTAL L.J. 1, 12-13 (2004).

259 "The sheer size of the ocean, the number of species, their mobility, the cost of data collection, changes in oceanic climate conditions, the potential for 'deliberate misreporting or non-reporting' by fishers, and a hundred other factors, make the comprehensive and accurate study of fish species and the collection of data on their

A crucial aspect of this human rights-based framework must be the involvement of Indigenous peoples in monitoring and evaluation systems, thereby allowing the rights and well-being of these communities to be considered while assessing the effectiveness of policies.[260] Such systems must measure not just policy effectiveness, but also the impact on livelihoods, cultural practices, and food security of Indigenous peoples.[261] It is fundamental to collaboratively develop this framework so that the perspectives and experiences of Indigenous peoples are involved in the system design and implementation, ensuring cultural sensitivity, relevance, and effectiveness.[262] In essence, these systems will be pivotal in ensuring the full and equitable collaboration with Indigenous peoples in the fisheries management and regulation framework. This respect for Indigenous peoples' knowledge and traditions can foster justice and sustainability while advancing their rights and well-being.[263]

D. Establishing Measures to Ensure Sustainable Fishing Practices

To ensure sustainable fishing practices, strategies such as the use of marine protected areas, implementation of gear restrictions, and incorporation of bycatch reduction techniques can protect crucial habitats and non-target species.[264] Likewise, market-driven initiatives like eco-labeling and product certification can encourage responsible fishing habits.[265] The design and application of these strategies should

life cycles, behavior, and numbers next to impossible." *Id.* (quoting *The State of Global Fisheries and Aquaculture 2002*, FOOD & AGRIC. ORG. OF THE U.N., at 61 (2002)).

260 *See generally* Atlas et al., *supra* note 219.

261 *See generally* Kamaljit K. Sangha, Andrew Le Brocque, Robert Costanza & Yvonne Cadet-James, *Ecosystems and Indigenous Well-Being: An Integrated Framework*, 4 GLOB. ECOLOGY & CONSERVATION 197, 200-05 (2015).

262 *Id.* Indigenous peoples often hold to a higher reverence things that the West deems as economic resources. *See* Will Atlas, *Indigenous Fishing Practices Hold Promise for Future*, WILD SALMON CTR. (Dec. 9, 2020), https://wildsalmoncenter.org/2020/12/09/indigenous-fishing-techniques-hold-promise-for-future/ [https://perma.cc/JGZ8-FDW6] ("Indigenous salmon management knowledge stems from more than respect for a primary food source. For many communities, salmon are at the center of creation stories, ceremonies, family structures, and cultural identity."); *see also Kunming-Montreal Framework*, *supra* note 191, at 12 (Target 21).

263 *See, e.g.*, Sangha et al., *supra* note 261, at 204-05.

264 Cooper, *supra* note 258, at 6 (explaining that wasteful fishing practices result in excessive bycatch thus burdening fish populations (e.g., "long lining" and "bottom trawling.")).

265 *Id.* at 2-3.

involve an engaged process with coastal communities and Indigenous peoples, facilitating mutual understanding and co-learning. This involvement helps to align these strategies with the genuine interests and needs of these communities. Further, it acknowledges the profound and unique knowledge of Indigenous peoples,[266] accessed with their free, prior, and informed consent.[267] Ensuring FPIC and the representation of Indigenous peoples in all decision-making processes is vital. Failing to do so risks misregulating or unduly restricting traditional fishing stocks, gear, and processing methods, possibly leading to the extinction of these traditional practices, and inflicting irreparable damage on the livelihoods, food security, and cultural and spiritual customs of Indigenous peoples.[268]

1. Marine Protected Areas

Approximately 8.2% of the world's oceans are under some level of marine protection, and merely 2.9% can be classified as "fully" or "highly" protected from the impacts of fishing.[269] As we gain a deeper understanding of the intricate interconnections among ecosystem components—encompassing both ecological and human dimensions—it becomes evident that marine protected areas ("MPAs") are poised to play a significantly enhanced role in comprehensive fisheries management.[270] MPA initiatives aim to increase the

266 Atlas, *supra* note 262 ("[F]or thousands of years, Indigenous communities around the North Pacific maintained sustainable salmon harvests by using in-river and selective fishing tools like weirs, traps, wheels, reef nets and dip nets. Following European contact, these traditional fisheries and governance systems were suppressed, and often outlawed outright, as commercial fishing interests came to dominate fisheries."); *see also Kunming-Montreal Framework*, *supra* note 191, at 12 (Target 21).

267 *See Draft High Seas Treaty*, *supra* note 168, art. 10 *bis*; *Kunming-Montreal Framework*, *supra* note 191, at 12 (Target 21).

268 For two in-depth case studies, the first in West Suriname regarding a proposed protected area on the communities' traditional lands and the second in East Suriname regarding the co-management of an existing protected area, see Bethany Janna Haalboom, Encounters with Conservation and Development in Suriname: How Indigenous Peoples are Trying to Make Things 'Right' through Scalar Politics, Identity Framing, and Hybrid Governance Arrangements, (2009) (Ph. D. dissertation, Duke University).

269 *The Marine Protection Atlas*, MARINE CONSERVATION INST., https://mpatlas.org/ [https://perma.cc/JW6N-EVCR] (Apr. 21, 2023).

270 Jean-Yves Weigel, Kathryn Olivia Mannle, Nathan James Bennett, Eleanor Carter, Lena Westlund, Valerie Burgener, Zachary Hoffman, Alfredo Simão da Silva, Elimane Abou Kane, Jessica Sanders, Catherine Piante, Sukarno Wagimank

volume of fish stocks by designating and enforcing zones free from commercial fishing, thus providing a sanctuary for fish populations to regenerate.[271] This suggests a critical need for policies and regulatory frameworks that better leverage MPAs as tools for sustaining marine biodiversity and securing the livelihoods of communities that depend on these ecosystems.

One of the biggest challenges with MPAs is maintaining them over the long term, considering the substantial costs they incur.[272] Wealthier countries are better positioned to establish MPAs given the significant initial investment required for implementation.[273] To reach current targets,[274] the vast majority of coastal nations must expand their existing MPAs.[275] Sarika Cullis-Suzuki and Daniel Pauly found in their 2021 study that a more economical approach for marine preservation would involve developing a small number of large MPAs, as opposed to numerous smaller ones.[276] Such an approach can

& Ashley Hellman, *Marine Protected Areas and Fisheries: Bridging the Divide*, 24 AQUATIC CONSERVATION: MARINE & FRESHWATER ECOSYSTEMS 199, 201 (2014).

271 U. Rashid Sumaila, Vicky Lam, Frédéric Le Manach, Wilf Swartz, Daniel Pauly, *Global Fisheries Subsidies: An Updated Estimate*, 69 MARINE POL'Y 189, 189 (2016) [hereinafter Sumaila et al., *Global Fisheries Subsidies*]; Sumaila et al., *Bottom-Up Re-Estimation*, *supra* note 11, at 204. The draft of the High Seas Treaty defines "marine protected area" as "a geographically defined marine area that is designated and managed to achieve specific long-term biodiversity conservation objectives and may allow, where appropriate, sustainable use provided it is consistent with the conservation objectives." *Draft High Seas Treaty*, *supra* note 168, art. 1, ¶ 12.

272 This is especially a concern in developing nations. Sarika Cullis-Suzuki & Daniel Pauly, *Marine Protected Area Costs as "Beneficial" Fisheries Subsidies: A Global Evaluation*, 38 COASTAL MGMT. 113, 119 (2010).

273 However, a country's wealth is not the *sole* determinant for the establishment of MPAs. *See id.* at 118-19. Sarika Cullis-Suzuki & Daniel Pauly use Japan, Norway, and Iceland as examples and show that despite their relative wealth and major fishing operations, their MPA investment scores are low. *Id.* at 117-18. Instead, MPA investment could be seen as a potential marker of a country's commitment towards sustainability, especially with regard to their protective measures for fisheries and coastal biodiversity. *Id.* at 119.

274 The existing objective calls for 30% of the world's land and sea to be declared protected areas by 2030. *See* Convention on Biological Diversity, *Kunming-Montreal Global Biodiversity Framework*, U.N. ENV'T. PROGRAMME, (Dec. 19, 2022), https://www.unep.org/resources/kunming-montreal-global-biodiversity-framework [https://perma.cc/8R5D-289V]. This ambitious goal, known as "30 by 30," received broad consensus at the COP15 Convention on Biological Diversity meeting in December 2022. *Id.* Consequently, it was adopted as a key target within the Kunming-Montreal Global Biodiversity Framework. *See Kunming-Montreal Framework*, *supra* note 191, at 9 (Target 3).

275 Cullis-Suzuki & Pauly, *supra* note 272, at 119.

276 *Id.*

considerably reduce global cost projections associated with current targets.[277] Still, every MPA has an optimal size beyond which the problems and costs might exceed their benefits, thereby creating a net negative impact.[278] For example, for MPAs to effectively contribute to fisheries via "spillover"[279]—where protected fish populations overflow into fishing areas—they must not be excessively large.[280] The ratio between a reserve's circumference and its total area decreases as the size of the reserve increases, leading to less overflow of protected fish populations and reduced spillover effect.[281]

While not always a viable solution, some of the financial stress can be alleviated by transitioning jobs from the fisheries sector to different positions in MPA management.[282] MPAs offer alternative income opportunities for fishers, such as employment as park staff, a strategy successfully employed in places like Nabq, Egypt, and the Soufriere Marine Management Association ("SMMA") in St. Lucia.[283] Beyond direct employment, MPAs also foster related industries, like agriculture and tourism, offering more income diversity and resilience.[284] Some displaced fishers can find alternative fishing opportunities or switch to new fish species.[285] However, for MPAs to be effective, the enforcement methods must be appropriate, considering local dependence on fishing for survival.[286] Harsh penalties for illegal

277 *Id.*

278 *Id.*

279 The phenomenon of "spillover" typically occurs in well-managed marine reserves or areas where fishing activities are prohibited. FIONA R. GELL & CALLUM M. ROBERTS, THE FISHERY EFFECTS OF MARINE RESERVES AND FISHERY CLOSURES 6 (2002). Fish populations within these protected zones flourish and often extend beyond the boundaries of the reserve. *Id.* Fishers take advantage of this surplus by positioning their fishing activities around the edges of the reserves, a strategy known as "fishing-the-line." *Id.* This practice allows fishers to benefit from the enhanced fish populations emanating from the reserves. *Id.*

280 *Id.* at 14.

281 *Id.*

282 Cullis-Suzuki & Pauly, *supra* note 272, at 119.

283 The community ranger approach has been proven effective at Nabq in Egypt, where local Bedouin have been employed as park staff, and in the SMMA in St. Lucia, where all the rangers are recruited from the local fishing community. GELL & ROBERTS, *supra* note 279, at 21. The rangers' intimate knowledge of the area has proven invaluable for enforcement. *Id.*

284 For instance, in St. Lucia, fishers utilized their boats as water taxis, reducing pressure on the fishery. *Id.*

285 Loans to help individuals purchase larger boats and engines have been successful because they encourage the fishers to fish for offshore species. *Id.* at 22.

286 *Id.*

fishing, such as the destruction of fishing gear or large fines, can lead to increased poverty.[287] In many areas, social pressure may be a more effective illegal fishing deterrent, taking inspiration from the negative stigma surrounding poaching, which is viewed as cheating the entire community.[288] Compensation, although controversial, can be an effective short-term solution for fishers who have lost significant fishing grounds due to the establishment of MPAs and who have limited options for alternative income.[289] The key, however, is ensuring this is a temporary measure and not a permanent crutch.[290]

Decision-makers must consider the rights of Indigenous peoples when establishing MPAs.[291] The health of ecosystems, often inextricably linked to Indigenous cultural identities, can fluctuate significantly due to the influence of MPAs.[292] Establishing MPAs in collaboration with Indigenous peoples to protect their access rights can simultaneously address social inequalities and foster biodiversity conservation.[293] However, creating MPAs that meet the needs and expectations of all stakeholders involved in the planning process is challenging.[294] As discussed above, a well-designed network of MPAs can serve multiple stakeholders effectively if it covers a significant portion of the managed area and includes reserves of varied sizes and spacings.[295] It is essential to educate stakeholders on the MPA's benefits and limitations, outline clear goals from the beginning, and employ ongoing monitoring programs to guide necessary modifications.[296] Still, it is important to acknowledge the potential downsides of MPAs.

287 *Id.*

288 *Id.* For example, the Stillaguamish Tribe monitors and samples their fishing activities and have implemented strict accountability standards for Tribal fishers to ensure they know what their harvest impacts look like. Telephone interview with Kadi Bizyayeva, *supra* note 108.

289 GELL & ROBERTS, *supra* note 279, at 22.

290 *Id.*

291 Natalie C. Ban & Alejandro Frid, *Indigenous Peoples' Rights and Marine Protected Areas*, 87 MARINE POL'Y 180, 180 (2018); *see also Kunming-Montreal Framework*, *supra* note 191, at 9-10, 12 (Targets 1, 3, 5, 9, and 22).

292 Ban & Frid, *supra* note 291, at 180.

293 *Id.* The Bastimentos Island National Marine Park in Panama is an example of a failed attempt to include Indigenous interests in an MPA management plan. Panama created the park without consulting the local Ngöbe Indigenous people. *Id.* at 181 (citing Carla Guerrón-Montero, *Marine Protected Areas in Panama: Grassroots Activism and Advocacy*, 64 HUM. ORG. 360, 362-64 (2005)).

294 Benjamin S. Halpern & Robert R. Warner, *Matching Marine Reserve Design to Reserve Objectives*, 270 PROC. BIOLOGICAL SCIS. 1871, 1871 (2003).

295 *Id.* at 1877.

296 *Id.*

The term "ocean grabbing" encapsulates conflicts arising from MPAs when conservation efforts inadvertently limit Indigenous and small-scale fishers' access to resources or encroach on culturally significant areas.[297] Consequently, it is imperative that Indigenous peoples and small-scale fishers actively participate in the designation, establishment, and management of MPAs.[298]

2. Gear Restrictions

Fishing gear restrictions play a significant role in promoting recovery of fish biomass.[299] Particularly in regions where the complete cessation of fishing would be inequitable, implementing limitations on non-selective and damaging fishing gear serves as a socially considerate approach to foster the recovery of fish populations and conserve biodiversity.[300] Adopting responsible fishing gear paves the way for the long-term sustainability of resources, preservation of biodiversity, and revitalization of depleted fish stocks.[301]

However, broad policies prohibiting or restricting certain types of fishing gear can disproportionately affect small-scale fishers and Indigenous peoples.[302] Many Indigenous fishing practices and gear are designed to prevent ecosystem disruption and overconsumption of resources, reflecting Indigenous peoples' deep-rooted understanding of sustainable resource use.[303] Yet, these traditional practices may not

297 Ban & Frid, *supra* note 291. Protected areas are one of the factors that leads to loss of access to traditional fishing areas. Rep. of the APFIC/FAO Regional Consultative Workshop, *supra* note 26.

298 Rep. of the APFIC/FAO Regional Consultative Workshop, *supra* note 26, at 4; *see also Draft High Seas Treaty*, *supra* note 168, art. 18 (obligating consultation with Indigenous peoples when performing environmental impact assessments); *Kunming-Montreal Framework*, *supra* note 191, at 9-10, 12 (Targets 1, 3, 5, 9, and 22).

299 Stuart J. Campbell, Graham J. Edgar, Rick D. Stuart-Smith, German Soler & Amanda E. Bates, *Fishing-Gear Restrictions and Biomass Gains for Coral Reef Fishes in Marine Protected Areas*, 32 CONSERVATION BIOLOGY 401, 401 (2018).

300 *Id.*

301 Boopendranath, *supra* note 100, at 71.

302 For example, from the late 1800s to the 1970s, Canadian fisheries policies "banned and dismantled Indigenous Peoples' fish weirs and traps . . . which were regarded as wasteful and unsustainable despite the fact that these technologies, the mainstay of First Nations' fisheries, allowed for selective fishing, monitoring and sustainable use of salmon." Turner et al., *supra* note 28, at 565.

303 *See id.* Archaeological and historical evidence reveals that Indigenous peoples on the Pacific Northwest coast sustainably managed fish stocks for thousands of years through selective harvesting, habitat maintenance, monitoring, proprietorship, and cultural constraints on overfishing. *Id.*

always align with contemporary government regulations, creating a dissonance that inhibits Indigenous communities from maintaining their culturally significant fishing methods and that risks their livelihoods and food security.[304]

The practices of the Stillaguamish Tribe exemplify the importance of localized gear restrictions. Local managers, closely connected to their ecosystems, are in the best position to monitor and adjust management practices to suit the needs of the resource. The Stillaguamish tribe emphasizes adaptive management, sometimes necessitating rapid changes in gear type/size or even a complete redefinition of fishery regulations.[305] One traditional method employed by the Stillaguamish Tribe involves the use of gill nets, a harvest method used by the Tribe for hundreds of years.[306] This method targets sustainable sizes of fish; smaller fish can swim through the mesh, while larger ones can jump out, ensuring the balance and health of the ecosystem.[307] However, traditional methods like these sometimes conflict with contemporary regulations that potentially jeopardize both the ecosystem and Indigenous ways of life. Using certain gear like rods and reels and practices like catch-and-release can lead to increased stress and mortality in fish, decreasing the chances of adults returning to spawn.[308] Potential fish mortality makes it vital to use data collection from spawning surveys or harvest retrievals and integrate Indigenous methodologies to understand the health and sustainability of the ecosystem.[309]

According to the Stillaguamish Tribe's Fisheries Director, Kadi Bizyayeva, it is essential for local fisheries managers to set harvest restrictions and regulations.[310] Harvest restrictions and regulations offer adaptability, such as the quick adjustment of gear types or

304 *See id.* For example, salmon are keystone species in coastal ecosystems and are also significant culturally for First Peoples in terms of nutritional health, identity, origin stories, ceremonies, and art. *Id.*

305 The Stillaguamish Tribe actively monitors the size, quantity, and health of harvested resources, adapting their methods accordingly. Telephone interview with Kadi Bizyayeva, *supra* note 108.

306 *Id.*

307 *Id.*

308 The increasing popularity of recreational and sport fisheries where the catch-and-release method is prevalent, can cause unintended consequences for fish populations, particularly when it is not done carefully. *Id.*

309 *Id.*

310 *Id.*

initiation of test fisheries to better understand species run timings.[311] Such adaptability and insight would be difficult, if not impossible, to achieve from a centralized or distant regulatory body. In the global transition towards sustainable fishing gear, therefore, policies pertaining to fishing gear restrictions should be formulated at the local level, which can consider both ecological needs and cultural nuances.[312] While overarching fisheries management organizations should oversee these policies, the granular details and adaptability should be entrusted to local communities. In essence, effective fishing gear regulations must strike a delicate balance—they must promote marine biodiversity and stock recovery while respecting the rights and traditions of local fishing communities.

3. Bycatch Reductions and Landing Regulations

Regulation of bycatch and landing, often implemented to manage fisheries, can lead to unsustainable practices that harm the environment. Landing regulations, which prohibit bringing to shore fish caught below a certain size, can inadvertently encourage discarding, a practice that is harmful to marine ecosystems and threatening to the livelihood of fishers who depend on a variety of species for their subsistence and income.[313] Discarded bycatch can lead to substantial biodiversity loss and disrupt the balance of marine ecosystems, jeopardizing the very resources upon which small-scale fishing communities depend.[314]

However, as the availability of popular fish species dwindles and prices rise, previously discarded bycatch species are gradually entering markets and becoming part of consumer diets.[315] This trend is evident in shrimp fisheries across Central America, India, and Thailand, where bycatch is increasingly utilized for human consumption.[316] While this can provide a source of income and food for local communities, it is not a long-term solution to the bycatch problem and does not address the need to reduce bycatch in the first place.

As bycatch is a significant threat to marine biodiversity, strategies for bycatch reduction are crucial. Some of these strategies

311 Telephone interview with Kadi Bizyayeva, *supra* note 108.
312 *Id.*; *see also, e.g.*, 1995 CODE OF CONDUCT, *supra* note 8, art. 7.6.4.
313 Rep. on Food Security and Nutrition, *supra* note 57, at 14, 41.
314 *See id.* at 49.
315 *Id.* at 41, 49, 56.
316 *Id.* at 41.

include the use of more selective fishing gear,[317] improved fisheries monitoring, spatio-temporal closures,[318] bycatch quotas,[319] and the development of bycatch reduction technologies.[320] In the face of these strategies, however, landing regulations continue to encourage practices that are detrimental to ecosystems and the long-term sustainability of fish stocks.[321] These detrimental practices must be phased out over time, with different timetables for developed and developing countries, to recognize the varying capacities and resources of countries at different development stages and minimize socio-economic disruption.[322]

It is important to recognize the economic and social implications of landing and bycatch regulations on local fishing communities. The enforcement of bycatch reduction strategies and landing regulations can have substantial negative impacts on the livelihoods of small-scale fishers, who often lack the resources to adapt to changing regulations.[323] Least-cost bycatch reduction seeks to achieve the

317 Gear modifications involve changes to fishing gear to allow non-target species to escape, reducing bycatch. Telephone interview with Kadi Bizyayeva, *supra* note 108.

318 Spatio-temporal closures restrict fishing activities in certain areas or at certain times to protect vulnerable species. *Spatial & Temporal Measures*, BYCATCH MGMT. INFO. SYS., https://www.bmis-bycatch.org/index.php/mitigation-techniques/spatial-temporal-measures [https://perma.cc/9JGF-HQF3] (last visited Sept. 10, 2023).

319 Bycatch quotas set limits on the amount of non-target species that can be caught, incentivizing fishers to adopt more selective fishing methods. Rep. on Food Security and Nutrition, *supra* note 57, at 84-85.

320 *See id.* at 44.

321 *Communication from the Commission to the European Parliament and the Council - Sustainable Fishing in the EU: State of Play and Orientations for 2024*, at 7-8, COM (2023) 303 final (June 14, 2023).

322 A prime example of this in practice is the Montreal Protocol, a historic agreement that prohibited the use of CFCs and other substances that deplete the ozone layer. *About Montreal Protocol*, U.N. ENV'T PROGRAMME, https://www.unep.org/ozonaction/who-we-are/about-montreal-protocol [https://perma.cc/CZ6T-TACC] (last visited Feb. 10, 2023). The Protocol established a compulsory schedule for discontinuing the use of major ozone-depleting substances and allocated funds to assist developing nations in their efforts to eliminate these substances. *Id.* The Protocol provides different schedules for developed and developing nations ("Article 5 countries"). *Id.* Developed and developing countries have equal but distinct responsibilities, and they both have binding, time-bound, and measurable commitments. *Id.*; *cf. Draft High Seas Treaty*, *supra* note 168 (providing different criteria and exceptions for developed and developing countries).

323 Dale Squires, Lisa T. Ballance, Laurent Dagorn, Peter H. Dutton & Rebecca Lent, *Mitigating Bycatch: Novel Insights to Multidisciplinary Approaches*, 8 FRONTIERS MARINE SCI., Mar. 19, 2021, at 1, 3.

maximum possible reduction of unintentional fish capture at the lowest cost to fisheries.[324] A least-cost bycatch reduction approach aligns with various international and regional legal guidelines and allows decision-makers to consider socioeconomic factors.[325]

Dale Squires, Lisa T. Ballance, Laurent Dagorn, Peter H. Dutton, and Rebecca Lent describe two primary approaches to bycatch reduction: direct regulation and incentive-based approaches; the incentive-based approach can be further be divided into direct and indirect incentives.[326] Direct regulation involves bycatch quotas, gear restrictions, and closed areas for fishing, aiming for immediate and verifiable reductions in bycatch.[327] Direct incentive-based approaches tie economic rewards or penalties directly to measurable conservation outcomes; examples include payments for ecosystem services and bycatch Individual Transferable Quotas ("ITQs").[328] On the other hand, indirect incentive-based approaches focus on changing the relative costs and benefits of activities leading to bycatch reduction, often through alternative avenues like ecotourism and community-based conservation.[329] These indirect methods may not directly target bycatch but can positively affect both target and bycatch species.[330] Both direct and indirect incentive-based methods can be particularly effective when tailored to specific community and ecological contexts, but each has its own advantages, disadvantages, and suitable applications.[331]

Addressing bycatch in global fisheries requires a multi-faceted approach that combines regulatory and economic mechanisms to drive behavioral change and achieve conservation goals. This Note's human rights-based framework integrates direct regulations with direct and indirect incentive-based measures to create a comprehensive, internationally implementable strategy for bycatch reduction. The cornerstone of this strategy is the implementation of direct regulatory approaches at the local level and the full participation of local communities. These direct measures are enforceable and offer immediate solutions to mitigate bycatch. In conjunction with regulatory

324 *Id.* at 4.
325 *Id.*
326 *See id.* at 8-10.
327 *Id.* at 9.
328 *Id.* at 10.
329 Squires et al., *supra* note 323, at 8-9.
330 *Id.*
331 *See generally id.* at 8-10.

measures, direct incentives offer a pathway for aligning economic interests with conservation outcomes. However, these direct incentives must be holistic and not favor large-scale fisheries and corporate stakeholders over small-scale fisheries. To create sustainable, long-term impact, this human rights-based framework also integrates indirect incentive-based mechanisms. Community-based conservation initiatives and alternative livelihood schemes, such as eco-tourism, can provide socially and economically acceptable alternatives, particularly for small-scale fisheries.[332] Unlike direct incentives, indirect mechanisms are not explicitly tied to conservation outcomes but promote sustainability as a byproduct of the incentive structure.[333] Through this integrated strategy, the framework aims to achieve effective, economically viable, and socially responsible bycatch reduction at a global scale.

As discussed, engaging local communities in the development and implementation of bycatch regulations and reduction strategies is critical. Traditional knowledge, skills, and techniques are necessary to craft more effective, culturally sensitive, and accepted strategies. At the same time, capacity building by providing training and resources for adaptation to new regulations could help mitigate potential negative economic impacts.[334]

While sustainable fisheries management is a complex issue, the need to balance ecological sustainability, economic viability, and cultural sensitivity in the development of bycatch reduction strategies and landing regulations is clear. As we continue to navigate towards sustainable fisheries management, this balance will be key to ensuring the long-term health of our oceans and the communities that rely on them. Ensuring that these measures respect and uphold the rights, traditions, and livelihoods of local communities is not just an ethical obligation—it is crucial for their success and sustainability.

332 *Id.* at 8-9.

333 *Id.* at 9.

334 CECILE BRUGERE & CASSANDRA DE YOUNG, ADDRESSING FISHERIES AND AQUACULTURE IN NATIONAL ADAPTATION PLANS: SUPPLEMENT TO THE UNFCCC NAP TECHNICAL GUIDELINES 16 (2020), https://www4.unfccc.int/sites/NAPC/Documents/Supplements/FAO_Fisheries%20and%20aquaculture_ca2215en.pdf [https://perma.cc/YH2U-KAUQ].

4. Incentives: Market-Based and Production-Based Approaches

Due to the complex nature of fisheries governance, implementing incentives for sustainable fishing would be beneficial.[335] Incentive-based tools alter or establish economic incentives to influence individual behavior, providing individuals with the discretion to determine their own response to these incentives.[336] Innovations are bidirectional and some originate locally; their benefits are captured by States and NGOs and are replicated in other fisheries; others originate from international and regional agreements, which then impact practices at national and local levels.[337] This multi-level approach to innovation in fisheries governance demonstrates how inventive strategies act as natural incentives. They permeate different layers of governance, encouraging stakeholders at every level—from local communities adapting to internationally driven regulations to national bodies implementing regionally inspired guidelines—to engage in sustainable fishing practices.

Incentives can be categorized into two major groups: "push" and "pull." Push and pull incentives both strive to impact the actions of producers and/or shape and implement State management and regulation.[338] Pull incentives involve the use of market-based measures that influence demand by catering to the preferences of consumers who are interested in purchasing seafood that is sustainably or ethically sourced and produced.[339] On the other hand, push incentives directly target the production aspect of the seafood supply chain.[340]

International organizations and national governments have largely failed to establish effective fisheries management and regulations, leading private actors to implement various schemes for sustainability labels that provide consumers with the option to choose certified sustainable products.[341] This is an example of a pull incentive known as "eco-labeling," a process that involves attaching a label to a product that showcases its environmentally friendly features to consumers, creating incentives for private actors to meet environmental

335 *Incentivizing Sustainable Fishing on the High Seas*, WORLD WILDLIFE FUND, https://www.worldwildlife.org/projects/incentivizing-sustainable-fishing-on-the-high-seas [https://perma.cc/R57B-U83Z] (last visited Sept. 26, 2022).

336 ANDERSON ET AL., *supra* note 161, at 5.

337 *See id.*

338 *Id.* at 7.

339 *Id.* at 5.

340 *Id.*

341 Hadjimichael & Hegland, *supra* note 131, at 129.

and social standards.[342] Eco-labeling has become widespread in today's markets due to rising consumer interest in environmentally friendly products.[343] Market research shows that consumers, particularly in developed nations, are more conscious of the environmental effects of their product choices, leading to greater demand for environmentally responsible products.[344]

Eco-labeling was promoted as a crucial aspect of resolving the negative effects of a globalized economy with minimal regulations on trade and resource use.[345] Certification programs, however, frequently prioritize the demands of consumers and the market over the welfare of the program's beneficiaries, such as producers and the environment.[346] The Marine Stewardship Council ("MSC") administers the most far-reaching of these labels.[347] Drs. Maria Hadjimichael and Troels J. Hegland posit that ecolabels contain inherent risks, especially those of the MSC label.[348] Economic liberalization and capitalist globalization have generated incentives that encourage certification programs to make baseless assertions to establish accountability and maintain their market position.[349] The MSC and similar certification schemes are not merely passive reflections of market demands but active participants in shaping the eco-labeling landscape.[350] They wield significant influence over which fisheries are deemed "sustainable" and, by extension, which ones gain access to lucrative markets.[351] This influence can exacerbate existing disparities in the global fishing

342 Cooper, *supra* note 258, at 3 (stating that the FAO endorses the promotion of fisheries sustainability through eco-labeling).

343 *Id.* at 19.

344 *Id.*

345 Hadjimichael & Hegland, *supra* note 131, at 132.

346 *Id.*

347 *Id.* at 129. The MSC was established in 1997 to give economic incentives to fisheries operators to optimize their management and ecological integrity. *Id.*

348 *Id.* at 130, 134. The inherent risks associated with such eco-labeling schemes stem from their dual role as market tools and sustainability arbiters. *Id.* at 133. On one hand, they aim to guide consumers towards more sustainable choices; on the other, they must navigate the complexities of global fisheries management, where environmental, economic, and social factors intertwine. *Id.* This delicate balance can lead to compromises that may dilute the very concept of sustainability they seek to promote, often at the expense of smaller, more sustainable fisheries that are crucial for the ecological health of marine environments and the socioeconomic well-being of local communities. *Id.*

349 *Id.* at 132.

350 *See id.* at 133.

351 *See* Hadjimichael & Hegland, *supra* note 131, at 133.

industry, where the ability to achieve certification is often tied to the scale of operations and access to financial and technical resources.[352]

Therefore, the current eco-labeling system, although a tool for positive change, can inadvertently perpetuate social and economic inequalities between fisheries in developed and developing nations. By primarily catering to consumer demands in developed nations, these labels can overlook the realities faced by fisheries in developing countries. The high costs of certification and stringent sustainability criteria may exclude small-scale and artisanal fisheries, which often employ more sustainable fishing methods but lack the resources to meet certification criteria. This creates an imbalanced scenario where large commercial fisheries that can afford to meet the standards of eco-label certification benefit from higher market value, while smaller operations face further marginalization due to their lack of resources.

Push incentive-based interventions include financial incentives such as low interest rates on loans, bycatch taxes, and environmental credit systems.[353] These interventions directly affect the conduct of harvesters and/or the revenue generated for the States that grant access rights.[354] For example, imposing a bycatch tax raises the cost of catching and discarding unwanted fish, encouraging fisheries to minimize or avoid bycatch.[355] Although there are differences between push and pull incentives, they both try to influence the behavior of stakeholders and the creation and enforcement of regulations and management by States.[356]

Corporations are motivated to adopt environmentally friendly practices in order to remain competitive in the business landscape.[357] Large commercial fishing companies often have the resources and capabilities to implement sustainable fishing technologies.[358] These technologies can facilitate experimenting with new fishing equipment to reduce bycatch, enhance monitoring and data gathering, and support

352 *See id.*

353 *See generally* ANDERSON ET AL., *supra* note 161, at 5-7.

354 *Id.* at 7.

355 *Id.*

356 *Id.*

357 Rinkesh Kukreja, *17 Top Companies That Are Going Green in 2020*, CONSERVE ENERGY FUTURE, https://www.conserve-energy-future.com/top-companies-that-are-going-green.php [https://perma.cc/NKQ4-ETF4] (last visited Sept. 4, 2022).

358 *See* ANDERSON ET AL., *supra* note 161, at 34.

scientific research.[359] By developing such sustainable technologies, commercial fishing companies can positively impact the fishing industry. These technologies are largely restricted to the industrial fishing sector because small-scale fisheries often lack sufficient financial resources and access to information to implement these technologies and innovations.

The strategic use of both push and pull incentives offers a promising path forward. While large-scale fishing corporations have the resources to adopt sustainable practices, small-scale fisheries often lag, underscoring the need for a multi-tiered approach that involves governments, NGOs, and consumers. As we move towards a future where the health of marine ecosystems is increasingly at risk, integrating incentive-based tools in fisheries management will be crucial in balancing economic gains, social justice, and environmental sustainability.

5. Catch Quotas and Access Rights

Catch quotas or "catch shares" are a regulatory mechanism employed by certain governmental bodies to oversee and manage fisheries.[360] They have been widely used as a means of regulating fish stock exploitation.[361] However, in recent times, the method of managing fisheries through global Total Allowable Catches ("TACs")[362] has not kept pace with technological advancements in harvesting.[363] TACs tend to have problems such as incentives that lead to overcapacity, inadequate stock conservation, and decreased profitability.[364] As a result, managing fisheries solely through non-individual catch quotas is

359 *See id.* See Adam L. Ayers & Kirsten Leong, *Focusing on the Human Dimensions to Reduce Protected Species Bycatch*, 254 FISHERIES RSCH., Oct. 2022, for a discussion on bycatch reduction technologies.

360 U. Rashid Sumaila, *A Cautionary Note on Individual Transferable Quotas*, 15 ECOLOGY & SOC'Y, Sept. 2010, at 1.

361 GARY R. MORGAN, INDIVIDUAL QUOTA MANAGEMENT IN FISHERIES: METHODOLOGIES FOR DETERMINING CATCH QUOTAS AND INITIAL QUOTA ALLOCATION iv (1997).

362 The TAC is the mechanism used to determine the highest fishing limits within a specified period and for each species governed by management plans, with scientific recommendations specified by the FAO used to determine catch quotas. *Total Allowable Catches (TACs)*, OCEANA, https://europe.oceana.org/total-allowable-catches-tacs/ [https://perma.cc/Y993-X3PK] (last visited Mar. 12, 2023).

363 MORGAN, *supra* note 361, at iv.

364 *Id.*

no longer considered a preferred method of fisheries management.[365] Individual Transferable Quotas allocate exclusive and tradable rights to a predetermined fraction of the TAC for specific fish species.[366] The TAC is defined and enforced by the relevant authorities, who then distribute portions of this total to individual fishers or entities, typically as a fixed percentage of the TAC.[367] These allocated quotas are uniquely transferable, allowing for their exchange in an open market.[368]

ITQs have been viewed as a solution to overcapacity in the fishing industry, as they allow for a transfer of fishing rights from less efficient to more efficient fishers.[369] ITQs are generally first allocated as grants based on the fishery's recent catch records.[370] The financial worth of these ITQ shares is positively correlated with effective fish stock management, thereby establishing an economic rationale for responsible stewardship.[371] In this way, ITQs create a market-driven incentive for sustainable fishing practices, as maintaining healthy fish stocks directly impacts the value of the ITQs, encouraging fishers to prioritize long-term resource conservation over short-term gains.[372]

365 *Id.*

366 Sumaila, *supra* note 360, at 1.

367 *Id.*

368 *Id.*

369 Mathilde Højrup Autzen & Troels Jacob Hegland, *When 'Sustainability' Becomes the Norm: Power Dynamics in the Making of a New Eco-Label for Low-Environmental-Impact, Small-Scale Fisheries*, MARINE POL'Y, Sept. 1, 2021, at 4.

370 For example, in the Mid-Atlantic surf clam fishery, ITQs were allocated based on a formula that considered each vessel's average historical catch from 1979 to 1988, with more recent years weighed more heavily and the two lowest years excluded. B.J. McCay, *Initial Allocation of Individual Transferable Quotas in the US Surf Clam and Ocean Quahog Fishery*, *in* CASE STUDIES ON THE ALLOCATION OF TRANSFERABLE QUOTA RIGHTS IN FISHERIES 86, 88 (2001). This approach, which comprised 80% of the allocation, was supplemented by a "cost factor" based on vessel size, addressing concerns of newer fishers with larger vessels. *Id.* For ocean quahog vessels and New England surf clam vessels, the allocation was simpler, based solely on the average catch during the years they actually fished in the same period, excluding their lowest catch year. *Id.*

371 Edward J. Garrity, *Individual Transferable Quotas (ITQ), Rebuilding Fisheries and Short-Termism: How Biased Reasoning Impacts Management*, 8 SYS., Mar. 12, 2020, at 2. ITQs provide a property-like right over future fish catches, incentivizing fishers not to overexploit the fishing resources. *Ensuring Individual Transferable Quotas Benefit Fisheries and the Environment*, UNIV. OF B.C. (Mar. 22, 2019), https://oceans.ubc.ca/2019/03/22/ensuring-itq-benefits/ [https://perma.cc/YA4Q-T47N].

372 *See* Garrity, *supra* note 371, at 2.

The implementation of ITQs has led commercial fishers to specialize in specific fisheries by buying designated private harvesting rights and quotas that can be leased or traded.[373] By setting a fixed catch amount and allocating shares to individual fishers, the goal of ITQs was to end the cycle of increasing competition for a progressively limited fish stock.[374] ITQ systems were previously promoted by economists as the only way to save fisheries globally.[375] However, in practice, they have significant negative implications, including being disproportionately held by corporations and wealthy individuals rather than small-scale and Indigenous fishers.[376] Additionally, ITQ holders have no incentive to protect marine species they cannot fish or the marine habitats that support cultural and spiritual practices and healthy ecosystems.[377]

Improving the allocation of rights can help achieve a balance among social, economic, and ecological goals by leading to fewer conflicts, enhanced food security, and better livelihoods for small-scale fishers and their communities and by aiding in the preservation of local ecosystems.[378] For communities and small-scale fishers who rely on fish, the right to access the resource and exclude others is vital.[379] While a human rights-based approach adds a much-needed ethical dimension to fishing rights allocation, skeptics caution that incorporating human rights can make fisheries management more complex and less efficient.[380] Balancing human rights considerations with resource conservation objectives might lead to conflicts of interest, potentially hindering the swift and decisive action needed for ecological preservation. Long-term sustainability is intrinsically tied to human well-being. While it may seem that incorporating human rights could slow down decision-making processes, the multidimensional approach proposed by this Note ensures that enacted policies are more equitable and sustainable in the long run. Equitable allocation of fishing rights can uphold human rights principles and improve the economic

373 Turner et al., *supra* note 28, at 566.

374 *Id.*

375 *Id.*

376 *Id.*

377 *Id.*

378 Rep. of the APFIC/FAO Regional Consultative Workshop, *supra* note 26, at 5.

379 Smith et al., *supra* note 21, at 54.

380 Edward H. Allison, Blake D. Ratner, Björn Åsgård, Rolf Willmann, Robert Pomeroy & John Kurien, *Rights-Based Fisheries Governance: From Fishing Rights to Human Rights*, 13 FISH & FISHERIES 14, 24 (2012).

situation for vulnerable or marginalized stakeholders.[381] One avenue for improving the equitable allocation of rights would be to integrate community-based management systems, which would involve local stakeholders in decision-making processes. This bottom-up approach could make use of traditional knowledge and offer a more nuanced and flexible management strategy tailored to specific regional needs.

However, assigning and enforcing property rights for resources like migrating fish, biodiversity, and ecological services is challenging because of the difficulty and cost of excluding non-owners.[382] These difficulties are compounded by the presence of illegal, unreported, and unregulated fishing, which introduces significant uncertainty into stock assessments conducted by RFMOs.[383] The inability to accurately estimate the IUU catch makes it difficult to set effective conservation measures, often leading to cautious limits that penalize legitimate fishers.[384] Further, IUU fishing imposes social costs by negatively affecting the livelihoods of fishing communities, particularly in developing countries, and by exploiting vulnerable labor forces, thereby often violating international human rights norms.[385]

When small-scale fishers compete with industrial fishers for fishing rights, regulatory bodies' reliance solely on catch history or other economic factors when determining rights allocation can disadvantage small-scale fishers,[386] which may lack historical catch records or have smaller catches compared to industrial operations.[387] This information gap, along with the unique needs of small-scale fisheries, necessitates alternative methods for granting access to fishing

381 *Id.*

382 These resources are interconnected with other ecosystems and often transcend multiple property rights regimes, making it expensive or impossible to establish clear ownership. Costanza, *supra* note 4, at 204.

383 HIGH SEAS TASK FORCE, CLOSING THE NET: STOPPING ILLEGAL FISHING ON THE HIGH SEAS 19-20 (2006), https://www.oecd.org/sd-roundtable/papersandpublications/39375276.pdf [https://perma.cc/JJ7C-8MXA].

384 *Id.* at 20.

385 *Id.*

386 Smith et al., *supra* note 21, at 53. Additionally, legal environments may downplay the sociocultural significance of resources to Indigenous peoples and coastal communities and therefore prioritize resource and territory allocation to industrial and commercial fishers at the expense of these smaller actors. *See* Lorenzo Cotula, *(Dis)integration in Global Resource Governance: Extractivism, Human Rights, and Investment Treaties*, 23 J. INT'L ECON. L. 431, 439 (2020).

387 Cotula, *supra* note 386, at 439.

resources.[388] Therefore, to adequately protect the interests of small-scale fishers, allocation methods should move beyond relying solely on catch history data and instead incorporate criteria such as traditional fishing practices, conservation efforts, and dependence on the fishery for livelihood and subsistence.[389]

E. Restricting Capacity-Enhancing "Harmful" Subsidies and Promoting "Beneficial" Subsidies

Fisheries subsidies are direct or indirect financial remunerations from public organizations to the fishing industry, aimed at increasing the industry's profitability beyond what it could otherwise realize.[390] Capacity-enhancing, or "harmful," subsidies are any form of investment from public sources that lowers costs or increases revenue for the fishing industry, such as subsidies for building or modernizing boats and fuel subsidies.[391] These subsidies, which increase revenue or decrease expenses, result in a minor increase in profit for fisheries, thereby incentivizing more participation and fishing activity.[392] However, capacity-enhancing subsidies are considered harmful because they support the expansion of fishing fleets and thus contribute greatly to excessive fishing capacity, which is detrimental to both the sustainability of marine ecosystems and the livelihoods reliant on them.[393] This overfishing can also lead to the depletion of biodiversity, as species can be harvested at a rate that exceeds their ability to reproduce.[394] In turn, overfishing harms the delicate balance of marine ecosystems and reduces the presence of other species that local communities depend on for food and livelihoods.[395] Therefore, these harmful

388 Costanza, *supra* note 4, at 204.

389 *Id.*

390 Sumaila et al., *Global Fisheries Subsidies*, *supra* note 271, at 189; Sumaila et al., *Bottom-Up Re-Estimation*, *supra* note 11, at 202.

391 Sumaila et al., *Global Fisheries Subsidies*, *supra* note 271, at 189. Indirect subsidies, such as fuel tax concessions, represent a large portion of subsidies. Daniel J. Skerritt, Robert Arthur, Naazia Ebrahim, Valérie Le Brenne, Frédéric Le Manach, Anna Schuhbauer, Sebastián Villasante & U. Rashid Sumaila, *A 20-Year Retrospective on the Provision of Fisheries Subsidies in the European Union*, 77 ICES J. MARINE SCI. 2741, 2742 (2020).

392 Sumaila et al., *Global Fisheries Subsidies*, *supra* note 271, at 189.

393 *Id.*; Sumaila et al., *Bottom-Up Re-Estimation*, *supra* note 11, at 202.

394 *See, e.g.*, R.J. Beamish, G.A. McFarlane & A. Benson, *Longevity Overfishing*, 68 PROGRESS OCEANOGRAPHY 289, 289 (2006).

395 *See, e.g.*, Nicholas K. Dulvy, Nathan Pacoureau, Cassandra L. Rigby, Riley A. Pollom, Rima W. Jabado, David A. Ebert, Brittany Finucci, Caroline M. Pollock,

subsidies that lead to resource waste, overcapacity, and overfishing in the global fishing industry—particularly those that benefit large-scale industrial fishing—should be systematically reduced and ultimately eliminated.[396]

Subsidies often distort fair competition in the fishing industry, benefiting large-scale operations at the expense of small-scale and artisanal fisheries.[397] These subsidies enable larger, more efficient fishing vessels to compete for the same fish stocks as local, small-scale fishing communities, which typically have limited access to capital and resources.[398] This competition can decrease fish prices, making it

Jessica Cheok, Danielle H. Derrick, Katelyn B. Herman, C. Samantha Sherman, Wade J. VanderWright, Julia M. Lawson, Rachel H.L. Walls, John K. Carlson, Patricia Charvet, Kinattumkara K. Bineesh, Daniel Fernando, Gina M. Ralph, Jay H. Matsushiba, Craig Hilton-Taylor, Sonja V. Fordham & Colin A. Simpfendorfer, *Overfishing Drives Over One-Third of All Sharks and Rays Toward a Global Extinction Crisis*, 31 CURRENT BIOLOGY 4773, 4782 (2021).

396 U. Rashid Sumaila, *How to Make Progress in Disciplining Overfishing Subsidies*, 70 ICES J. MARINE SCI. 251, 252 (2013), In light of this, the development of the Agreement on Fisheries Subsidies serves as a proactive step towards addressing the call for the systematic reduction and eventual eradication of such detrimental subsidies, aligning efforts to mitigate the adverse impacts on the global fishing industry and promote sustainable practices. The Agreement addresses urgent issues related to the sustainability of fisheries by banning subsidies that support IUU fishing practices (Article 3), preventing the depletion of already overfished stocks (Article 4), and curbing the exploitation of unregulated fish populations in international waters (Article 5). World Trade Organization, Agreement on Fisheries Subsidies, Draft Ministerial Decision of 17 June 2022, WTO Doc. WT/MIN(22)/W/22. The completion of the Agreement negotiations and the establishment of additional regulations are crucial steps for ensuring enduring sustainability and fairness in ocean management. *See* U. Rashid Sumaila, Lubna Alam, Patrizia R. Abdallah, Denis Aheto, Shehu L. Akintola, Justin Alger, Vania Andreoli, Megan Bailey, Colin Barnes, Abdulrahman Ben-Hasan, Cassandra M. Brooks, Adriana R. Carvalho, William W. L. Cheung, Andrés M. Cisneros-Montemayor, Jessica Dempsey, Sharina A. Halim, Nathalie Hilmi, Matthew O. Ilori, Jennifer Jacquet, Selma T. Karuaihe, Philippe Le Billon, James Leape, Tara G. Martin, Jessica J. Meeuwig, Fiorenza Micheli, Mazlin Mokhtar, Rosamond L. Naylor, David Obura, Maria L. D. Palomares, Laura M. Pereira, Abbie A. Rogers, Ana M. M. Sequeira, Temitope O. Sogbanmu, Sebastian Villasante, Dirk Zeller & Daniel Pauly, *WTO Must Complete an Ambitious Fisheries Subsidies Agreement*, 3 OCEAN SUSTAINABILITY, Feb. 2, 2024, at 3.

397 Subsidies are disproportionately granted to large-scale fisheries instead of small-scale and artisanal fisheries. Andrés M. Cisneros-Montemayor & U. Rashid Sumaila, *Busting Myths that Hinder an Agreement to End Harmful Fisheries Subsidies*, 109 MARINE POL'Y, Nov. 2019, at 1-2. 84% of total fisheries subsidies are allocated to large-scale fleets. *Id.*

398 *See, e.g.*, Anna Schuhbauer, Daniel J. Skerritt, Naazia Ebrahim, Frédéric Le Manach & U. Rashid Sumaila, *The Global Fisheries Subsidies Divide Between Small- and Large-Scale Fisheries*, 7 FRONTIERS MARINE SCI., Sept. 2020, at 6.

difficult for local fishers to sustain their livelihoods.[399] This market distortion is not just a local issue; it also has international ramifications. Least developed nations often find themselves unable to compete with larger, subsidy-supported fishing nations for resources.[400] Restricting capacity-enhancing subsidies is crucial for fostering a more equitable industry and preventing issues like overfishing and territorial encroachment.[401]

Policy interventions are urgently required to support small-scale fisheries, many of which operate under impoverished conditions and face threats from climate change.[402] Effective solutions can only be developed with access to comprehensive data, such as information on subsidies, and through assessments that examine the impact of these subsidies on sustainable fishing practices.[403] Across the board, industries should work to either restrict capacity-enhancing subsidies or ensure that they yield positive benefits to all actors.[404]

Subsidies are deemed "beneficial" when they promote conservation and regulatory efforts and counteract the effects of excessive fishing.[405] Such beneficial subsidies support the long-term viability of fish stocks and the fishing industry through targeted financial support for initiatives like conservation, stock assessment, and catch rate monitoring, thereby enabling effective management and enforcement.[406] Consequently, these subsidies have a positive impact on both environmental conservation and fishing communities by ensuring long-term resource management.[407]

Investing in infrastructure, public health, local governance, and alternative livelihoods can significantly benefit coastal

399 *See, e.g.*, Robert Arthur, Stephanie Heyworth, John Pearce & William Sharkey, *The Cost of Harmful Fishing Subsidies* 22 (Int'l Inst. Env't & Dev., Working paper, 2019).

400 Cisneros-Montemayor & Sumaila, *supra* note 397, at 1. The top five subsidizing maritime countries provide approximately $19.3 billion annually to their fisheries, which is four times the amount allocated by all lower-income nations combined. *Id.*

401 *Id.*

402 Anna Schuhbauer, Ratana Chuenpagdee, William W.L. Cheung, Krista Greer & U. Rashid Sumaila, *How Subsidies Affect the Economic Viability of Small-Scale Fisheries*, 82 MARINE POL'Y 114, 120 (2017); *see also* Sumaila et al., *supra* note 396, at 1.

403 Schuhbauer et al., *supra* note 402, at 120.

404 *Id.*

405 Skerritt et al., *supra* note 391, at 2742.

406 *Id.*; Sumaila, *supra* note 396, at 256.

407 Sumaila, *supra* note 396, at 256.

communities.[408] Such investments are particularly important for groups who typically do not benefit from fishing subsidies like women, youth, and processing workers.[409] Government funding could be allocated to the research on and development of sustainable fishing technologies.[410] It could also include incentives for using selective fishing gear, establishing marine protected areas, and implementing buyback programs to reduce fishing efforts, which would combat overfishing and protect vulnerable species.[411]

States should have the flexibility to support their small-scale fishing communities in ways that align with their socio-economic goals, provided these goals do not conflict with global ecological objectives.[412] If a State's goal is to bolster small-scale fishing or give it a competitive edge over industrial fishing, states should consider allocating sustainable fishing rights rather than providing subsidies for capital or operational expenses.[413] Conversely, if the aim is to protect traditional communities from economic upheaval, states should focus on social safety nets and transitional programs rather than subsidies that boost production.[414] Governments of fishing nations must realize the advantages of redirecting harmful subsidies to more constructive ends.[415] By reallocating these detrimental subsidies to social safety nets and transitional programs, governments can keep revenue within fishing communities and alleviate pressure on renewable food sources.[416] Respecting traditional and cultural livelihoods is a critical consideration, however, meaning that these solutions are not universally applicable.

408 Cisneros-Montemayor & Sumaila, *supra* note 397, at 1.

409 *Id.*

410 *See, e.g.*, CHRISTOPHER CUSACK, OMISHA MANGLANI, SHEMS JUD, KATIE WESTFALL, ROD FUJITA, NICOLE SARTO, POPPY BRITTINGHAM & HUFF MCGONIGAL, NEW AND EMERGING TECHNOLOGIES FOR SUSTAINABLE FISHERIES: A COMPREHENSIVE LANDSCAPE ANALYSIS 8 (2021), https://www.edf.org/sites/default/files/documents/EDF%20Oceans%20Technology%20Solutions%20Comprehensive%20Landscape%20Analysis.pdf [https://perma.cc/U7KH-G6ZD].

411 *See* Cullis-Suzuki & Pauly, *supra* note 272, at 114.

412 *See* WORLD WIDE FUND FOR NATURE, SMALL BOATS, BIG PROBLEMS 6 (2008), https://wwfint.awsassets.panda.org/downloads/wwf__small_boats_big_problems_1.pdf [https://perma.cc/C5XJ-6ZZC].

413 *Id.*

414 *Id.*

415 Sumaila, *supra* note 396, at 254.

416 *Id.*

F. Addressing the Unequal Power Distribution Between Small- and Large-Scale Fisheries

The human rights-based framework should include provisions to address the unequal distribution of benefits and power in the fishing industry, particularly in relation to small-scale fisheries and Indigenous peoples.[417] Measures should be implemented to enhance small-scale fishery and Indigenous capacity to participate in decision-making processes and exercise their rights to their resources.[418] These measures should be supported by empirical research and data collection to accurately assess the needs and challenges faced by small-scale fisheries.

To distribute resources equitably, regulations should allocate a fair share of fishing areas to small-scale fisheries.[419] This requires a comprehensive analysis of current distribution patterns and the implementation of regulatory reforms to rectify imbalances. Fair allocation of fishing areas would minimize competition with larger industrial fleets and ensure that local communities maintain control over their fishing areas.[420]

Fishing rights and licenses should be allocated equitably to small-scale fishers, providing them with secure access to fishing grounds and ensuring that their voice is heard in decisions about managing their resources.[421] This should be complemented by the establishment of transparent governance structures that facilitate the participation of small-scale fishers in regulatory bodies.[422] Additionally, technical and financial support is necessary for improving their operations and adopting sustainable fishing methods that respect cultural practices.[423] Lastly, the development of alternative, sustainable seafood markets is crucial.[424] Small-scale fishers must be granted equitable access to these markets to increase their incomes and reduce their dependence on more destructive fishing practices.[425] This should

417 Auld & Feris, *supra* note 20, at 534.

418 *Id.*

419 *See, e.g.*, *SSF Guidelines*, *supra* note 23, at 6 (§ 5.8).

420 *Id.* (§ 5.9); *see also* Auld & Feris, *supra* note 20, at 534.

421 *See generally* Auld & Feris, *supra* note 20, at 534.

422 *See supra* Part V(B).

423 *See Working with Small-Scale Fisheries*, MARINE STEWARDSHIP COUNCIL, https://www.msc.org/what-we-are-doing/small-scale-fisheries [https://perma.cc/AM9Q-28AL] (last visited Mar. 3, 2023).

424 *See, e.g.*, *Targets and Indicators*, *supra* note 128.

425 *Id.*

involve the creation of policies that incentivize and support the entry of small-scale fishers into these markets, ensuring their competitiveness and sustainability.

G. Promoting Cooperation and Coordination Between States and Industry Actors: Implementing Measures for Participation, Consultation, and the Obligation of Free, Prior, and Informed Consent

The framework should aim for robust cooperation between countries, regions, and industry stakeholders to achieve sustainable and equitable management of global fishery resources. As discussed previously, regulations should foster co-management between local and Indigenous communities, governments, and the fishing industry.[426] This collaboration is critical for effective communication and decision-making, particularly in implementing international guidelines.[427] Management approaches should accommodate traditional fishing practices and consider the unique needs of Indigenous and local communities.[428] For example, artisanal fishers, who often have deep cultural ties to traditional practices, may prefer localized control and resist external, bureaucratic oversight.[429] Such culturally sensitive management approaches, referred to as "sensitive regulation," must take these perspectives into account to be effective.[430]

Indigenous peoples and coastal communities should also be actively involved in governance to capture the fishing industry's full range of potential social, economic, and ecological impacts.[431] The current Code of Conduct lacks robust language regarding Indigenous inclusion,[432] and indiscriminate law enforcement can compromise

426 *See, e.g.*, ANDERSON ET AL., *supra* note 161, at 25; *Kunming-Montreal Framework*, *supra* note 191, at 12 (Target 22).

427 ANDERSON ET AL., *supra* note 161, at 25.

428 *See* Victoria Walsey & Joseph Brewer, *Managed Out of Existence: Over-Regulation of Indigenous Subsistence Fishing of the Yukon River*, 83 GEOJOURNAL 1169, 1170-71 (2018); *Kunming-Montreal Framework*, *supra* note 191, at 9-10, 12 (Targets 5, 9, 22).

429 Walsey & Brewer, *supra* note 428, at 1171-72; Smith et al., *supra* note 21, at 53 (stating that small-scale fisheries can have significant social and cultural importance beyond their economic and nutritional benefits for fishing communities).

430 ANDERSON ET AL., *supra* note 161, at 25.

431 *See, e.g.*, *Draft High Seas Treaty*, *supra* note 168, art. 18.

432 Article 7.6.6 states that "due recognition should be given," and this is qualified by "as appropriate," leaving this recommendation open-ended and up for debate about when it is and is not appropriate to recognize the "traditional practices, needs

traditional practices.[433] Free and prior informed consent, as outlined in the UNDRIP, should be guaranteed.[434] Ensuring FPIC is critical for establishing a governance model that respects the autonomy and cultural heritage of Indigenous peoples, thereby making regulations more effective and socially equitable.

Small-scale fisheries research should be interdisciplinary and include the wisdom of small-scale fishers and Indigenous communities.[435] The BBNJ Treaty draft is a positive development, as it recognizes the importance of Indigenous knowledge.[436] The LOSC should be amended to include the language in the BBNJ Treaty draft that concerns the inclusion of Indigenous peoples' knowledge and corresponding FPIC obligations. Strengthening the language in the LOSC to align with the more progressive perspectives of the BBNJ Treaty draft would honor Indigenous knowledge and ensure more holistic and effective governance of global fisheries.

and interests of [I]ndigenous people[s]." 1995 CODE OF CONDUCT, *supra* note 8. Further, this does not explicitly call for the consultation and inclusion of Indigenous peoples. It simply recommends that the governing power should give "recognition" to Indigenous people's traditions. *See id. But see Kunming-Montreal Framework*, *supra* note 191, at 12 (Target 22) (calling for the participation of Indigenous peoples).

433 José R. Martínez Cobo (Special Rapporteur of the Sub-Commission on Prevention of Discrimination and Protection of Minorities), *Study of the Problem of Discrimination Against Indigenous Populations: Volume 5, Conclusions, Proposals and Recommendations*, ¶ 149, E/CN.4/Sub.2/1986/7/Add.4 (Mar. 1987), https://digitallibrary.un.org/record/133666?ln=en [https://perma.cc/DFW4-CC49]. In 2016, the former Special Rapporteur on the rights of Indigenous peoples, Victoria Tauli-Corpuz, on her mission to Brazil visited the Juruna people on the Xingu River. Construction of the Belo Monte dam had just been completed. Victoria Tauli-Corpuz (Special Rapporteur on the rights of Indigenous peoples), *Rep. of the Special Rapporteur on the Rights of Indigenous Peoples on Her Mission to Brazil*, A/HRC/33/42/Add.1 (Aug. 8, 2016). The government of Brazil failed in its obligation to carry out adequate consultations with the affected Indigenous peoples. *See generally id.* ¶¶ 36-46. Public hearings were held but these did not meet the standard of consultation provided in ILO Convention No. 169 and the UNDRIP. *Id.* ¶ 40. Further, no efforts were made to obtain community members' free, prior, and informed consent, and no opportunities were provided for them to participate in decision-making. *Id.* The Belo Monte dam made the Juruna people's traditional livelihoods based on fishing and hunting no longer possible because of changed river currents, turbid water, and decreased fish stocks. *Id.* ¶ 41.

434 *See* UNDRIP, *supra* note 177, art. 32(2).

435 Ratana Chuenpagdee & Svein Jentoft, *Small-Scale Fisheries: Too Important to Fail*, *in* THE FUTURE OF OCEAN GOVERNANCE AND CAPACITY DEVELOPMENT 349, 352 (2019); *Kunming-Montreal Framework*, *supra* note 191, at 12 (Target 21).

436 *See supra* Part III(F).

H. Conflict Resolution: Establishing Mechanisms for Access to Justice

A dispute resolution mechanism ("DRM") must be established to resolve conflicts between different actors in the fishing industry, including governments, large-scale fishing operations, local communities, and Indigenous peoples. Fish and other marine resources are extremely valuable commodities, and disputes over exclusive access to fish stocks can lead to militarized conflict.[437] Research on transnational river treaties indicates that when they contain extensive institutional elements such as methods for resolving disputes, they are better at preventing conflicts.[438]

DRMs should be established at the national, regional, and international levels. The DRMs must establish clear rules and procedures for the resolution of disputes, guidelines for the role of the neutral third party, and the means by which disputes can be elevated if necessary. The jurisdiction of the DRMs—including the scope of the mechanism, the types of disputes it will handle, and the geographic area covered—must also be clearly defined and agreed upon by all interested parties.

Article 6.15 of the Code of Conduct provides useful recommendations for dispute resolution.[439] To avoid disputes evolving to conflict, the Code recommends that States should work together and resolve any fishing disputes "in a timely, peaceful, and cooperative manner," following international agreements or mutually agreed-upon methods.[440] Pending settlement, the involved States should establish interim solutions that will not prejudice the decision of any dispute resolution process.[441] The DRMs must implement effective enforcement mechanisms to ensure that States abide by decisions reached

437 Cullen Hendrix & Zachary Lien, *Managing Fisheries Conflict in the 21st Century: A Role for Regional Management Organizations?*, NEW SEC. BEAT (Feb. 1, 2021), https://www.newsecuritybeat.org/2021/02/managing-fisheries-conflict-21st-century-role-regional-management-organizations/ [https://perma.cc/58FU-65LM]; *see also* Cullen Hendrix & Paige Roberts, *One in 10 Interstate Disputes Are Fishy - And the Implications Stink*, NEW SEC. BEAT (Dec. 20, 2017), https://www.newsecuritybeat.org/2017/12/10-interstate-disputes-fishy-implications-stink/ [https://perma.cc/S4XY-RMRW] ("Between 1993 and 2010, [11%] of militarized interstate disputes (MIDs) – conflicts short of war between two sovereign states – involved fisheries, fishers, or fishing vessels.").

438 Hendrix & Lien, *supra* note 437.

439 *See* 1995 CODE OF CONDUCT, *supra* note 8, art. 6.15.

440 *Id.*

441 *Id.*

through the dispute resolution process. This enforcement may include the use of sanctions, fines, or other measures.

I. Regular Review and Update

This framework should be regularly reviewed and updated to reflect new information, emerging trends, and changing conditions and needs in the fishing industry, as well as to address any areas where improvement is needed. A regular review process is crucial for ensuring the framework's continued effectiveness and relevance because it allows for the identification and incorporation of best practices and emerging technologies, as well as the inclusion of new scientific findings and the latest social, economic, and ecological insights.[442] A human rights-based approach requires continuous effort from States to protect, respect, and fulfill human rights.[443] Monitoring progress involves assessing outcomes and processes that align with human rights standards.[444]

A review process also provides an opportunity to assess the progress and impact of the framework, and make any adjustments to meet its intended objectives, much like the SDG indicators serve as a "report card" to measure progress towards respective targets.[445] Additionally, regular review and update helps to maintain the framework's credibility by demonstrating a commitment to continuous improvement and by ensuring that the framework remains relevant to Indigenous peoples and all stakeholders, including fishing communities, governments, and conservation organizations.[446]

442 *See id.* art 7.6.8 ("The efficacy of conservation and management measures and their possible interactions should be kept under continuous review. Such measures should, as appropriate, be revised or abolished in the light of new information.").

443 Off. of the U.N. High Comm'r for Hum. Rts., *Human Rights Indicators: A Guide to Measurement and Implementation*, HR/PUB/12/5, at 33 (2012).

444 *Id.* at 33-34.

445 *See* SUSTAINABLE DEV. SOLS. NETWORK, INDICATORS AND A MONITORING FRAMEWORK FOR THE SUSTAINABLE DEVELOPMENT GOALS: LAUNCHING A DATA REVOLUTION FOR THE SDGS 7 (2015), https://irp-cdn.multiscreensite.com/be6d1d56/files/uploaded/150612-FINAL-SDSN-Indicator-Report1.pdf [https://perma.cc/ESF8-CGCC].

446 *See* HR/PUB/12/5, *supra* note 443, at 59 (stating that "there is invariably a need for a periodic independent review to establish the credibility of administrative data sets").

VI. CONCLUSION

The heightened human strain on marine resources has resulted in severe fish stock depletion due to overfishing, risking the economic stability of significant stocks and threatening millions of people's livelihoods.[447] Global fisheries management is more complex than the mere logistical intricacies of regulating fish stocks. Fisheries management is complicated by important issues such as biodiversity, human rights, cultural traditions, and socio-economic dynamics. As explained in this Note, current fisheries management frameworks remain predominantly Western-centric, often sidelining traditional wisdom and sustainable Indigenous and coastal community practices. These communities have coexisted harmoniously with aquatic ecosystems for generations, offering valuable insights that can complement and enrich modern scientific approaches. This Note thus advocates for a departure from a purely regulatory framework to a more inclusive, human rights-based approach.

This Note proposes a human rights-based framework that is globally applicable, drawing lessons from both successes and shortcomings of existing international initiatives. It underscores the importance of incorporating the unique needs and perspectives of all stakeholders—particularly small-scale fisheries, artisanal fishers, and Indigenous communities. In a rapidly globalizing world, these recommendations aim to catalyze policy reform and urge international bodies to amend existing laws and enact new regulations that reflect principles of sustainability, social justice, and human dignity.

An international framework grounded in human rights is vital to fostering social, ecological, and economic welfare for those impacted by fisheries management and regulation. Overfishing reduction and sustainable fishing methodologies can conserve marine resources, mitigate environmental damage, maintain biodiversity, and restore fish populations.[448] Encouraging stakeholder and Indigenous peoples' involvement respects and safeguards traditional practices and cultures. Finally, fostering sustainable methods while imposing penalties for unsustainable ones can stimulate an economically feasible and equitable fishing industry.

447 *See, e.g.*, PROELß, *supra* note 46.

448 Boopendranath, *supra* note 100, at 41, 43.