LOSI Conference Papers, 2012

“Securing the Ocean for the Next Generation”

Papers from the Law of the Sea Institute, UC Berkeley–Korea Institute of Ocean Science and Technology Conference, held in Seoul, Korea, May 2012

Proceedings edited by Prof. Harry N. Scheiber, LOSI
and Director Moon Sang Kwon, KIOST
Assistant Editor: Emily A. Gardner

Going Once, Going Twice— Sold to the Highest Bidder: Restoring Equity on the High Seas through Centralized High Seas Fish Auctions

Anastasia Telesetsky
Associate Professor, College of Law, University of Idaho, USA

This paper was presented at the tenth in a series of annual international conferences organized and sponsored or co-sponsored by the Law of the Sea Institute, School of Law, University of California, Berkeley, USA. The May 2012 conference was jointly sponsored and co-organized in collaboration with the Korea Institute of Ocean Science and Technology (KIOST, formerly KORDI), and hosted by KIOST on May 21-24, 2012 in Seoul, Korea. This was the third LOSI-KIOST collaboration in conferences and publications.

Going Once, Going Twice— Sold to the Highest Bidder: Restoring Equity on the High Seas through Centralized High Seas Fish Auctions

Anastasia Telesetsky[1]

"[T]he end result of this Conference (the Law of the Sea) is a rather inequitable one." Ambassador Tommy Koh[2]

I. Introduction

Most developing states and particularly landlocked developing states[3] are being deprived of their interests in living marine resource located on the high seas by a club of industrial fishing fleets[4] as fishing production continues to expand.[5]

---

[1] Associate Professor, College of Law, University of Idaho, USA

[2] "Audience Responses to The Third United Nations Conference on the Law of the Sea: What Was Accomplished," *Law and Contemporary Problems* 46(2) (Spring 1983): 25.

[3] Land locked developing States include Afghanistan, Armenia, Azerbaijan, Bhutan, Bolivia, Botswana, Burkina Faso, Burundi, Central African Republic, Chad, Ethiopia, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Lesotho, Macedonia, Malawi, Mali, Moldova, Mongolia, Nepal, Niger, Paraguay, Rwanda, South Sudan, Swaziland, Tajikistan, Turkmenistan, Uganda, Uzbekistan, Zambia, and Zimbabwe.

[4] The term "club" is a reference to "club goods" in economic theory that refers to non-rival but excludable goods. Arguably, private industrial fleets regard high seas fisheries as "club goods" belonging to those fleets capable of large capitalization. Certain fleets particularly those owned by developing state nationals are *de facto* excluded from the high seas fisheries because they do not have the necessary capitalization. While private interests consider high seas stocks as "club goods", this paper will argue in Section II(b) that States should regard high seas stocks as global public goods which are largely non-excludable and non-rival. A "club good" approach may be appropriate for effective management of fisheries within the Exclusive Economic Zone where a coastal state can function as a gatekeeper to the club. The implication of treating fisheries as club goods merits further research.

[5] Liane Veitch et al. "Avoiding Empty Ocean Commitments at Rio +20," 336 *Science* 6087 (15 June 2012): 1383. (Finding that the international targets to reduce overcapacity by 2005 have not been met with global fishing capacity actually increasing from 4.02 billion kilowatt days in 2002 to 4.35 billion kilowatt days in 2010)

Existing multilateral action through Regional Fishing Management Organizations has failed to preserve the high seas as shared global public goods to be collectively managed for the benefit of all States. Because all states have equitable interests in global public goods, which includes high seas living marine resources, the current disjointed management of the high seas living resources deprives some States, particularly the landlocked States and their nationals who have not historically availed themselves of high seas resources, of their equitable interest in these resources, while continuing to inequitably allow *carte blanche* access to the high seas by nationals of States that already have access to living resources within their own coastal zones.

If we accept that the high seas fisheries are an "international public good" as this chapter will argue, something profound needs to change in how these fisheries are managed. While all States may have the freedom to enter the high seas and fish, not all States are equally situated to be able to take advantage of the bounty of the sea. Many land-locked states have both physical and economic barriers preventing them from utilizing any of the high seas resources in spite of the articulation of specific high seas freedoms in Article 87 of the United Nations Convention on the Law of the Sea (LOS)[6] including freedom of fishing. To the extent that the high seas fisheries are an international public good, it is patently unfair that certain States receive no developmental benefit from the living resources of this commons.

This paper is written in the spirit of encouraging thoughtful intellectual experimentation to resolve what has become more than a tragedy of governing the commons. [7] We are dealing instead with a travesty of justice. The notion of tragedy suggests an inevitability governed by fate, destiny, or some force truly beyond our control. But this is not the case with fisheries. To dissect why we are facing a travesty of justice rather than a tragedy of the commons, the first part of this paper explores the rights of land-locked states under the law of the sea to access and exploit fisheries with a specific focus on landlocked developing states. The paper then queries whether the high seas fisheries as global public goods should be managed on the basis of equal access rather than the notion of equitable access. The second part of this paper proposes a targeted multilateral intervention in the exploit-as-usual model of high seas fishing. Specifically, the paper calls for the introduction of an equitable auction model for high seas fishing authorizations based on equal State allocations and a vigorously enforced cap and trade system.

[6] United Nations Convention on Law of the Sea 21 I.L.M. 1261 (10 December 1982) (hereinafter "Law of the Sea")

[7] Buzz Thompson, "Tragically Difficult: The Obstacles to Governing the Commons," 30 *Environmental Law* 241 (2000): 278.

This thought proposal is offered in the spirit of eco-pragmatism[8] that something concrete needs to be done to reverse the trend of nearly three quarters of the fish in the sea being exploited or over-exploited[9] both for the long term health of the ocean ecosystems and for the human society that depends or will depend on those fish.

The auction proposal in this paper pays intellectual tribute to the creative contribution of G.T. Crothers and Lindie Nelson from the Ministry of Fisheries in New Zealand who have argued that high seas fishery management should be vested in a single body to improve both environmental and economic outcomes.[10] Crothers and Nelson are generally right that rational high seas fishery management requires centralization of operations involving allocations, conservation regulations, and enforcement rather than an assortment of overlapping but still distinct regional management strategies. In proposing a largely privatized corporate model of high seas fisheries with contracts governed by private law and high seas management companies, however, they arguably place too much faith in the environmental gains to be had from an efficient market. Trondsen, Matthiasan, and Young likewise have argued for States to pool their existing interest in shares of a straddling stock fishery in a Multinational Resource Cooperative and then auction the shares to industry members with revenues being returned depending on how many shares a state had provided to the cooperative. This paper proposes a similar centralized auction model as the one conceived of by Crothers, Nelson, Trondsen, Matthiasan, and Young but with a differentiated emphasis. The motivation behind this paper's proposed auction is the promotion of international resource equity across shared large-marine ecosystems rather than realization of economic efficiencies.[11]

There are obvious limitations to this high seas auction proposal where all States have an equally allocated share of fishing allocation as a global solution to our collective fisheries woes. There is, of course, the scientific challenge of establishing what is a high seas fishery and whether it should be limited to discrete stocks or include shared and straddling stocks. Perhaps more importantly, it is a partial solution that fails to address the fact that 90% of commercial stocks are removed from Exclusive Economic Zone waters and not from the high seas.[12]

---

[8] Daniel Farber, *Eco-pragmatism: Making Sensible Environmental Decisions in an Uncertain World*, (Chicago, 1999) 206.

[9] Food and Agriculture Organization- Fisheries and Aquaculture Department, *State of World Fisheries and Aquaculture*, FAO (Rome, 2012), 11. (According to the FAO, only about 12.7% of existing commercial stocks are non-fully exploited.)

[10] G.T. Crothers and Lindie Nelson, "High Seas Fisheries Governance: A Framework for the Future," 21 *Marine Resource Economics* (2007) 341-353.

[11] Crothers and Nelson, "High Seas Fisheries Governance," 348 ("Auctions are a means to maximise the revenue gained from sale of access rights.")

[12] Kristina M. Gjerde, *Towards A Strategy for High Seas Marine Protected Areas*: *Proceedings of*

Even so, this paper endeavors to make a modest contribution to true collective management of high seas fisheries beyond the current "overexploit as usual" (OAU) model. Given the collective responsibility of States under the LOS to protect marine resources, the high seas is an optimal location for experimenting with new and more equitable methods of fishery management.

II. Legal Context for High Seas Auction Proposal

a. Equity, Fisheries, and Law of the Sea

The concept of equity is inherent in the Law of the Sea. The preamble states that the treaty was intended to create "a legal order for the seas and oceans …which will promote the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment"[13] The desire to ensure "equitable and efficient utilization" of marine resources underwrites the subsequent language in the chapter on the Exclusive Economic Zone.

Particular regard in the LOS is given to land-locked developing States to provide them with some equitable access to living resources. Article 62 provides that coastal States that do not have capacity to harvest the entire allowable catch within their exclusive economic zone should give other States access to the surplus with particular attention being given to land-locked developing States. These coastal state duties are reinforced with land-locked States having the legally cognizable "right to participate, on an equitable basis , in the exploitation of an appropriate part of the surplus of the living resources of the exclusive economic zones of coastal States of the same subregion or region."[14] Even where a state has sufficient harvesting capacity to take the entire allocation for its own nationals, coastal States must "cooperate in the establishment of equitable arrangements on a bilateral, subregional or regional basis to allow for participation of developing land-locked States of the same subregion or region in the exploitation of the living resources of the exclusive economic zones of coastal States of the subregion or region."[15]

Different theories may be applied to explain why equity is the cornerstone for sharing of living resources within the EEZ. From one perspective, the "right to participate, on an equitable basis" might be deemed a matter of corrective justice

---

the IUCN, WCPA and WWF Experts Workshop on High Seas Marine Protected Areas.,(Gland, Switzerland, 2003) 6.

[13] Law of the Sea, Preamble.

[14] Law of the Sea, Article 69

[15] *Id.*

in order to correct the law as otherwise applied.[16] Here, the creation of the 200 nautical mile EEZ under the primacy of the coastal state created barriers to high seas freedoms for those land-locked states by moving the access point to the high seas. From a different perspective, the "right to participate, on an equitable basis" might be considered a matter of distributive justice for land-locked developing states to ensure that these nations receive a fair allocation of resources to promote human development. Distributive justice is compelled by the global community as it is a moral community concerned not just with appearance of the fairness but also with the achievement of fairness. Under Part V, land-locked developing states are entitled to the application of equity in their negotiations with neighboring states. What this means in practice remains underexplored given that there is a paucity of fishery agreements between coastal states and land-locked developing States.[17] To the extent that there are bilateral agreements between coastal and land-locked states, they focus on access for shipping and trade under Part X of the LOS treaty and not on fishery allocation under Part V.[18]

Participation on an "equitable basis" within the coastal waters of a state does not require equal allocations among coastal states, land-locked states, or geographically disadvantaged states. Famously, from the ICJ Jurisprudence in the North Seas Continental Shelf cases, "equity does not necessarily imply equality."[19] This dicta applies in practice to allocations within EEZ fisheries whereby coastal States have a right of first refusal to stocks within their EEZ waters. Applying the Law of the Sea, coastal states are not obligated to provide

[16] Mark Janis, "Ambiguity of Equity in International Law," 9 *Brooklyn Journal of International Law* 7 (1983), 26; Betsy Baker, "The 'Precedential Judge Hudson'? Rivers, Oceans, Equity, and International Tribunals," in *Progress in International Law*, eds. Rebecca Bratspies and Russell Miller (Leiden, 2008), 451, 468

[17] Convention on Fisheries Co–operation Among African States Bordering the Atlantic Ocean, Dakar, Senegal, 5 July 1991. (See Article 16 "Parties affirm their solidarity with land-locked African States and with geographically disadvantaged States of the Region and shall establish active cooperation with them.")

[18] *See e.g.* Agreement between Mali and Senegal (June 6, 1963), U.N. Doc., A/AC, 138/37, 1971 (Describing port installations on the Senegalese coastline providng free zones for goods destined for Mali); Agreement Rwandese Republic and Republic of Kenya (February 26, 1992), *Rwanda Gazette Officielle* (1994) (describing port warehousing facilities available for Rwanda goods in Mombasa, Kenya); Accord entre le Gouvernement de la Republique du Tchad et le Gouvernement de la Republique du Cameroun Relatif a la Construction et a l'exploitation d'un Systeme de Transport des Hydrocarbures par Pipeline (February 8, 1996) (providing for an offshore oil-loading facility for Chad in Cameroon); Treaty of Transit between His Majesty's the Government of Nepal and the Government of India (December 3, 1996) (providing for Nepalese access until 5 January 2013 to the port of Calcutta and freedom from custom duties).

[19] North Seas Continental Shelf, *International Court of Justice Report* 1969, page 49, para. 91. "Equity" as applied to the continental shelf delimitation can be distinguished from the topic of this paper ---equity in high seas fisheries--- because rights to continental shelves independent of EEZs do not translate into additional entitlements to marine fisheries.

equal allocations in any situation where such an allocation might have detrimental impacts on the coastal state. [20] But the concept of equity as applied to high seas fisheries is different; the ICJ's dicta does not apply. Coastal states do not have a preferential right to high seas resources because of their geographical location. As Part VII of the LOS provides, the "high seas are open to all States, whether coastal or land-locked."[21]

Given the freedom of fishing provided to all States,[22] one might argue that the Law of the Sea has fully addressed matters of equity between coastal and land-locked states since no State can be excluded from fishing in the commons. Yet, a theoretical ability to access a resource is not equivalent to an actual ability to access that resource. This raises questions about whether the chronic impossibility of exercising a freedom leads to the cessation of a freedom. The answer depends on whether the choice of the word "freedom" in the Law of the Sea refers to a concept of freedom as an "exercise-concept" of freedom versus an "opportunity-concept".[23] This important distinction will be discussed further below in the final section arguing that a principle of "high seas equity" for fisheries must include an equality component because every State is entitled to resources within the high seas simply by virtue of being a sovereign State.

Land-locked States particularly developing States face recurring problems with high cost of transport to ports, lack of facilities and infrastructure, access challenges for international trade, and ongoing dependency on development aid. Even when land-locked States do get access to fishing stocks in a neighboring State, distributional issues remain including how to maintain expensive fishing fleets for which the land-locked State has no guarantee of an allocation. Nationals of land-locked States have few opportunities to exercise a right to fish. The few fishing vessels flying the flags of land-locked developing States are rarely owned or operated by nationals from the States and the connection with flag states is usually a relationship of convenience.[24]

---

[20] Law of the Sea, Article 69(2)(a).
[21] Law of the Sea, Article 87 (1).
[22] Law of the Sea, Article 87 (1)(e).
[23] Ian Carter "Positive and Negative Liberty," *The Stanford Encyclopedia of Philosophy (Spring 2012 Edition)*, Edward N. Zalta (ed.), available at <http://plato.stanford.edu/archives/spr2012/entries/liberty-positive-negative/>.
[24] There is no single reliable resource providing the flag states of all high seas fishing vessels as there is for merchant vessels. *See e.g.* Lloyds Register of Shipping, *World Fleet Statistics* (2006), listing merchant fleets from land-locked States (Austria, Azerbaijan, Czech Republic, Ethiopia, Hungary, Kazakhstan, Laos, Luxemburg, Malawi, Paraguay, Slovakia, Switzerland and Turkmenistan). There is some limited information available from NGOs and governments regarding flagging of high seas fishing vessels. *See* Matthew Gianni and Walter Simpson, *The Changing Nature of High Seas Fishing: How Flags of Convenience Provide Cover for Illegal, Unreported and Unregulated Fishing*. Australian Department of Agriculture, Fisheries and Forestry, International Transport Workers' Federation, and WWF International (2005), 29

There is no discussion of "equitable" rights of fishing in the high seas and no preferential fishing rights offered specifically to developing land-locked States on the high seas. The articulated legal access to the sea available under Part X of the LOS starts clearly as a "freedom of transit" and then ends vaguely. In Article 125(1), the law of the sea guarantees access to and from the sea for purposes of exercising rights related to freedom of the seas and common heritage of mankind. [25] Article 125(2) provides that land-locked states should reach agreement with the States that will provide them geographical access. On some level, this makes sense from an operational perspective. But what happens if parties fail to agree on terms of access—is there any immediate sanction against the State who refuses access? Or does the capacity-limited land-locked State have to use its already limited resources to seek justice through the LOS dispute settlement mechanisms? Is there a continuing obligation to reach agreement? Or has the State who was expected to provide access satisfied its obligations under the LOS simply by trying to reach "terms and modalities." Article 125(3) further curtails the interests of land-locked states by recognizing full sovereignty of a transit state to protect its "legitimate interests" with no elaboration on what constitutes a "legitimate" sovereign interest and who gets to decide. Do LOS parties as a whole determine what is "legitimate," does the land-locked state have a say, or is the transit State the ultimate arbiter of legitimacy?

Access to high seas fisheries remains particularly problematic in light of capacity problems. Resources that may have once been accessed only twelve nautical miles from the coast are now only legally fishable for land-locked States in area that are now 200 nautical miles from the coast. While for an industrial trawler, the extension of the post-LOS boundaries reduces competition with local fishermen, the remapping of the high seas may have eliminated certain small regional fisheries that were historically possible for certain geographically disadvantaged states. Access to a port under Part X is not sufficient to ensure that least developed land locked states can exercise their freedoms of high seas fishing if they cannot raise the capital to participate in these fisheries.

Generally geographical circumstances do not matter when we talk about distribution of natural resources. For example, timber rich Canada has no obligation to share access to trees under its sovereign protection.[26] But the high seas and the resources dependent on these waters are different from trees within a States territory because high seas marine resources belong to a legal commons

(Describing how ships flagged to Bolivia as Flags of Convenience were reflagged to Russian and Ukrainian flags to allow ships to participate in CCAMLR RFMO).

[25] Law of the Sea, Article 125(1).

[26] "Permanent sovereignty over natural resources" United Nations General Assembly resolution 1803 (XVII) of 14 December 1962 ("the creation and strengthening of the inalienable sovereignty of States over their natural wealth and resources reinforces their economic independence")

over which all States have shared responsibilities and interests in the resources. Rejecting historical claims by various States that appeal to usufructory reasoning, this article argues that no State has a legally recognized priority interest in the high seas. As Grotius, author of *De Mare Liberum* ("The Free Seas"), argued four centuries before, the seas are *res communis* and all States are entitled to sovereign equality within the high seas. Yet, the reality of high seas fishing is that some States with superior technology and financing are exercising priority interests in the high seas with consequences for the yet to be exercised rights of many of the least developed States.

Even though at the time that Grotius was writing, the human race was far from exceeding planetary boundaries, it is significant that Grotius recognized that the concept of freedom of the seas might be qualified by possible restrictions on State fishing since excessive fishing can exhaust a resource.[27] Grotius explicitly distinguished between what freedom means for navigation in contrast to fishing on the high seas. In the Grotian framework, no State can be excluded from the high seas. The equitable corollary to this conclusion is that no State should be privileged on the high seas. In dividing the metaphorical pie, every State is entitled to a taste of the bounty of the high seas--- not just those who managed for historical reasons to be first in line and first in time.

The following subsections explore legal concepts that might promote a more equitable *res communis*. The next subsection explores the concept of high seas and high seas fisheries as global public goods which should in theory be collectively maintained for and by all States. The last subsection explores the idea of equity in relation to high seas fisheries and argues that in the context of high seas living resources, equity on the high seas must be synonymous with equal outcomes for States unless it is legally acceptable for some States' high seas freedoms to be privileged over other States' high seas freedoms.

b. Healthy High Seas Fisheries as Global Public Goods

The high seas are a global commons based on an open access regime.[28] We don't really have a word for commodities or resources that come from shared commons. Perhaps we could call them "commonities" and introduce specific regimes to ensure their equitable distribution among States and protect them from being treated through the rule of capture as mere commodities. The UN's International law Commission has explored the topic of joint sharing and

[27] Hugo Grotius, *Mare Liberum*, (1609), Ralph Van Deman Magoffin translator, (1916 ed.), Chapter V- p. 43 (Grotius posits "potest pisces exhauriri" [it can be maintained that fish are exhaustible])

[28] United Nations Environmental Programme, Division of Environmental Law and Conventions, available at http://www.unep.org/delc/GlobalCommons/tabid/54404/Default.aspx

management of natural resources but its efforts were restricted in their scope to transboundary aquifers,[29] Unfortunately, the ILC has not pursued a similar mandate for developing a contemporary legal framework for shared marine resources on the high seas. The management scheme designed by the ILC that subsequently became the Law of the Sea has not proven robust enough to counter a growing global population, more advanced fishing technology such as satellite imagery, and a greater global taste for fish. Perhaps the idea of "commonities" will be a future project for the ILC.

Meanwhile, international institutions such as the United Nations Development Programme have been engaging in an ongoing and productive discussion revolving around the general identification of global public goods. Their work on public goods is particularly helpful in terms of thinking about how to best classify high seas fisheries for purposes of advancing policies to overcome problems of collective action.[30] A basic chart based on their description of economic and social goods is useful for conceptualizing the how to conceive of high seas fisheries as social goods.

	Excludable	Non- Excludable
Rival	Private good	Common-pool
Non-rival	Club good	Global public good

Pure global public goods are those goods that no one is barred from using (nonexcludable), that can be consumed without being depleted (nonrival in consumption), and that are of interest to multiple countries as well as multiple generations.[31] Natural commons such as the ozone layer are recognized as global public goods.[32] High seas are pure global public goods in terms of navigation, overflight, and scientific research. Until the middle of the last century, the resources of the high seas were both nonexcludable and nonrival in consumption because there was no need to manage a seemingly ever bountiful stock.[33] In the past century, individual vessels have become rivals over limited resources.[34] As a

[29] International Law Commission Draft Articles on the Law of Transboundary Aquifers, (2008) available at http://untreaty.un.org/ilc/guide/8_5.htm

[30] Inge Kaul, Isabelle Grunberg, and Marc A. Stern (eds.), *Global Public Goods: International Cooperation in the 21st Century*, (Oxford, 1999).

[31] Inge Kaul, Isabelle Grunberg, and Marc A. Stern, "Defining Global Public Goods," in Kaul, Grunberg and Stern, *Global Public Goods*, 1 and 11

[32] Kaul, Grunberg, and Stern, "Defining Global Public Goods," 5.

[33] Elliott A. Norse et al., "Sustainability of deep-sea fisheries," *Marine Policy* 36 (2012): 307. (Citing reports from Sebastian Cabot regarding Atlantic cod that were thick enough to interfere with navigation).

[34] Mark, Kurlansky, *Cod: A Biography of the Fish That Changed the World*. (New York, 1997). (Describing the "cod war" confrontation between Great Britain and Iceland)

result, high seas fisheries have been classified as common pool resources. This paper takes issue with that characterization and suggests that the high seas fisheries are better characterized as global club goods (except for depleted or overfished stocks such as tuna) where RFMOs effectively control high seas fishery management for certain fish stocks. Where RFMOs do not extend their jurisdiction and particularly for depleted stocks, high seas fishery stocks are ultimately private goods (excludable and rival) available to well-capitalized fleets. Given the situation of land-locked states and many other developing countries, the high seas fisheries are not truly common-pool resources because many of the countries are excluded *de facto* from participation because of a lack of resources. There are no RFMOs with participation from landlocked developing states. Only five out of twelve of the largest RFMOs asserting jurisdiction over high seas areas have participation from least developed coastal states. [35]

[35] Least Developed Countries based on a list compiled by the United Nations and available at http://www.unohrlls.org/en/ldc/25/ are marked in bold.
Western and Central Pacific Fisheries Commission: Australia, China, Canada, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Japan, **Kiribati**, Republic of Korea, Republic of Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, **Samoa**, **Solomon Islands**, Chinese Taipei, Tonga, **Tuvalu,** US, and **Vanatu**.
International Commission for the Conservation of Atlantic Tuna: Albania, Algeria, **Angola**, Barbados, Belize, Brazil, Canada, Cape Verde, China, Croatia, Egypt, **Equitorial Guinea**, European Union, France, Gabon, Ghana, Guatemala, **Guinea**, Honduras, Iceland, Ivory Coast, Japan, Korea, Libya, **Mauritania**, Mexico, Morocco, Namibia, Nicaragua, Nigeria, Norway, Panama, Philippines, Russia, **Sao Tome e Principe**, St. Vincent and the Grenadines, **Senegal**, **Sierra Leone**, South Africa, Syria, Trinidad and Tobago, Tunisia, Turkey, United States, United Kingdom, Uruguay, **Vanuatu**, Venezuela
Indian Ocean Tuna Commission: Australia, Belize, China, **Comoros, Eritrea**, the EU, France, Guinea, India, Indonesia, Iran, Japan, Kenya, South Korea, **Madagascar**, Malaysia, Mauritius, Oman, Pakistan, Philippines, Seychelles, **Sierra Leone**, Sri Lanka, **Sudan**, Tanzania, Thailand, the UK and **Vanuatu**.
Inter-American Tropical Tuna Commission- Colombia, Costa Rica, Ecuador, El Salvador, France, Guatemala, Japan, Mexico, Nicaragua, Panama, Peru, South Korea, Spain, US, **Vanuatu** and Venezuela
Southeast Atlantic Fisheries Organization- **Angola**, the EU, Namibia, Norway and South Africa
Convention on the Conservation of Antarctic Marine Living Resources- Argentina, Australia, Belgium Brazil, Chile, China, EU, France Germany, India, Italy, Japan, South Korea, Namibia, New Zealand, Norway, Poland, Russia, South Africa, Spain, Sweden, Ukraine, UK, US, Uruguay
Commission for the Conservation of Southern Bluefin Tuna- Australia, Indonesia, Japan, New Zealand, South Korea and Taiwan.
South Pacific Regional Management Organization- Australia, Belize, Chile, Cook Islands, Cuba, European Union, Korea, New Zealand, Russia
North Atlantic Salmon Conservation Organization - Canada, Denmark, the EU, Iceland, Norway, Russia and the US.
North Atlantic Fisheries Organization-Canada, Cuba, Denmark (in respect of the Faeroe Islands and Greenland), the European Union, France (in respect of Saint Pierre et Miquelon), Iceland,

RFMO with High Seas Jurisdiction	Least Developed Country Participation
Western and Central Pacific Fisheries Commission	5 out of 25 members
International Commission for the Conservation of Atlantic Tuna	8 out of 48 members
Indian Ocean Tuna Commission	6 out of 28 members
Inter-American Tropical Tuna Commission,	1 out of 16 members
Southeast Atlantic Fisheries Organization	1 out of 5 members

Because of the fundamental resource equity concerns underlying a commons such as the high seas, there are well-recognized collective action problems associated with high seas fisheries such as allocation and enforcement. By classifying high seas fisheries as impure public international goods rather than common-pool goods,[36] there is an opportunity to shift the dialogue and design equitable market frameworks that will provide added protection to these goods. If high seas fisheries continue to be conceived of by some as common-pool resources (even though they are primarily club and private resources), we will continue to struggle with open access problems as States compete for shares. But, if we conceive of fisheries as global public goods which are nonrival goods, then the focus will shift from lamenting the rivalry aspects of current practices to addressing how to return active fisheries to the status of non-rivaled good like the Grand Banks cod that were once as numerous as "grains of sand".[37]

The UNDP research addressed three key global public goods that cannot be delivered exclusively through private markets including a legalized property rights regime[38], fisheries management,[39] and equity.[40] Each of these classes of

Japan, the Republic of Korea, Norway, the Russian Federation, Ukraine and the United States of America

Northeast Atlantic Fisheries Commission- Denmark, the EU, Iceland, Norway and Russia.

General Fisheries Commision for the Mediterranean- Albania, Algeria, Bulgaria, Croatia, Cyprus, the EU, Egypt, France, Greece, Israel, Italy, Japan, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Romania, Slovenia, Spain, Syria, Tunisia and Turkey

[36] "Impure" public international goods are non-excludable but may be the subject of rivalry. Example of "impure" public goods includes international development assistance and preservation of tropical forests.

[37] Norse et al., "Sustainability of deep-sea fisheries," 307.

[38] Lisa D. Cook and Jeffrey Sachs, "Regional Public Goods in International Assistance," in Kaul, Grunberg and Stern, *Global Public Goods*, 436.

[39] *Id.*

public goods is essential to the maintenance of healthy high seas. First, private property rights can be traded within a market but are rarely created by the market. Investors want confidence that their investment in something, whether it is a license or right, has some backing from a legal system. In the case of competitive fisheries, it is highly unlikely that independent fleets would generate their own *sui generis* system of property rights beyond the customary rights that vest at capture.[41] If there are to be new property rights assigned to high seas allocations as this paper argues, such a system would require coordinated public action to articulate what rights a given rights holder could assert. Likewise fisheries management requires substantial public input particularly in the form of regulation, monitoring, and enforcement. Even in fisheries with large private participation in developing regulation and enforcement such as co-managed fisheries, there is still a large public component to the co-management intended to enforce safeguards. Because of the diversity of public and private actors operating on the high seas including many unknown actors such as IUU fishing vessels, there is an even greater need for public management to ensure that resources are not intentionally or unintentionally depleted by excessive fishing or irreversible habitat damage. Finally, delivering equity within a State and among States requires States to "reconcile conflicting demands…by allowing redistributive bargains".[42] A private market cannot deliver the conditions for this level of political bargaining.

Altogether, this characterization of the high seas fisheries as some form of global public good provides a needed cognitive shift for managing the commons. Focused on the ongoing tragedy of the commons and our continued losses of biomass, we have collectively failed to seize the opportunity for reimagining high seas governance beyond the authority of sovereign flag states. [43] It is accepted that the freedom of the seas in relation to high seas fisheries are conditional.[44] But the question remains as to what are the conditions for freedom of fishing. This paper suggests that the first condition should be one of full equity based on each State

[40] J. Mohan Rao, "Equity in a Global Public Goods Framework," in Kaul, Grunberg and Stern, *Global Public Goods*, 68.

[41] Private certification labels indicating conservation-friendly practices have been created within the fishing industry. The right to use the labels can be regarded as a type of intangible property right.

[42] Rao, "Equity in a Global Public Goods Framework," 82-83. (citing Mary Wollstonecraft).

[43] High seas fishing find policymakers in a peculiar risk assessment situation. Ordinarily humans are loss adverse meaning that they prefer avoiding losses to acquiring gains. Yet, the current high seas policies do little to avoid collective losses that translate into subsequent individual losses for each State. The oft-criticized allocation example that illustrates this paradox involves members of tuna RFMOs agreeing to political allocations that seem like numerical gains but actually reflect, based on scientific modeling, stock losses. Policymakers fail to act on a preference for avoiding long-term losses but instead seek to acquire short-term gains.

[44] Law of the Sea, Article 87(1)(e), Article 116(c).

having a resource right stemming from a freedom to exercise a clearly delineated interest in the living resources of the high seas.

c. Equity and the High Seas: Advancing "Equity as equality"

As described above, equity is embedded within the text of the Law of the Sea particularly in relationship to developing states' needs. While the implementation of equitable concerns within the EEZ does not require equality,[45] a different eco-pragmatic approach to the high seas is needed that hearkens back to Ambassador Arvid Pardo's concept of a whole ocean approach to the high seas. This section revisits Ambassador Pardo's "whole ocean" approach and then looks at the philosophical reason why freedom of the seas requires an "exercise-concept" approach rather than an "opportunity-concept" approach to freedom. Finally, this section looks at the legal maxim of "equity as equality" and suggests that this maxim is reasonably applied not just in the context of private property allocations but also for truly communal international public goods.

When Ambassador Pardo proposed a "common heritage" approach, he did so in part because he was looking for a rule of law that was fair and would "display consistency and a degree of predictability."[46] He proposed in 1971 a common heritage approach to the whole oceans and called for "a new international order for ocean space…[to] be constructed that takes into account, and seeks equitably to regulate, the problems created by the advance of science and technology, by the increasing and more diversified use of ocean space and by the intensifying competition for its resources."[47] He argued that, "unregulated freedom in ocean space beyond national jurisdiction is not in the interest either of the coastal states or of the international community as whole." [48] Ambassador Pardo understood that an unregulated high seas would devolve into the laissez-faire free-for-all that constitutes management of high seas living resources today.

In order to respond to global challenges, Ambassador Pardo called for a centralized international response to manage the areas beyond national jurisdiction. He suggested a single entity that would integrate the International Maritime Organization, the Food and Agriculture Organization, and the Inter-

[45] Law of the Sea Article 69(2). (Citing numerous conditions that allow for unequal allocations between a coastal state and a land-locked State)

[46] Continental Shelf (Libyan Arab Jarnahiriya/Malta), Judgment, *International Court of Justice Reports* 1985, p. 13. Para. 45. (Defining equity)

[47] *Draft Ocean Space Treaty: Working Paper Submitted by Malta*, U.N. Doc. A/AC.138/153 (1971), reprinted in Report of the Committee on the Peaceful uses of the Sea-bed and the Ocean Floor beyond the Limits of National Jurisdiction, 26 GAOR at 105-193, Supp. No. 21, U.N. Doc. A/8421 (1971) at 109.

[48] *Draft Ocean Space Treaty* at 111

governmental Oceanographic Commission.[49] Pardo's expectation was that this single central body would be "a credible mechanism for the international law and order in ocean space." The organization would set rules and regulations for equitable sharing among States on the high seas.

While the negotiating parties to UNCLOS deliberated on Ambassador Pardo's ideas, they rejected his idea of a centralized management institution with control over living and nonliving resources and only adopted the concept of common heritage for deep seabed mining management in areas beyond national jurisdiction. There was no interest, particularly by States positioning themselves as high seas fishing states, to interrupt the overexploit as usual approach to high seas fishing management. This represents at a minimum a logical failure and perhaps even a lapse in legal judgment on the part of States in favor of the vagaries of politics. If all States should have "sovereign equality" in relation to the ocean common, do States have legal duties to protect this equality if some States as argued above are *de facto* excluded from exercising their rights in a *res communis*. Are the high seas really an international commons? Or are they an extension of economically powerful States EEZs? If the high seas is an "international public good" as suggested in the section above then do all countries have equal distribution rights in the good? Because of geopolitical situations, are some States contrary to Article 116 of the Law of the Sea being deprived of the "right for their nationals to engage in fishing on the high seas" while other States are gaining windfalls?

Efforts for the high seas living resources to be recognized as common heritage have been largely ignored since States have been politically unwilling to transform fish as common property resources (or as this paper argues club property and private property resources) into shared common heritage resources. Molenaar aptly observes the problems in the system when he writes that the "allocation process is to a large extent governed by political and negotiating factors, and constrained only by very general rules and principles of international law."[50] If freedom as a combination of rights and responsibilities is a necessary equitable principle that underscores state-to-state relations, then the rules and principles of international law should trump political fish-trading. Even though this is not presently the case, it must not be accepted as a legitimate outcome. Political fish-trading of the sort that the tuna RFMOs have been accused of represents a failure of the international legal system to ensure that benefits flow to all States from a resource that should be characterized as an international public

[49] *Draft Ocean Space Treaty* at 112

[50] Erik Molenaar, "Participation, Allocation, and Unregulated Fishing: The Practice of RFMOs," 18 *Int. J. Marine and Coastal Law* No. 4 (2003): 479

good. In practice, the "sovereign rights of each independent state are limited by the **equal** sovereign rights of every other independent state."[51]

Here this paper argues that "equal sovereign rights" entails equal exercise of entitlements to global public goods within a commons. It is not equitable that land-locked states especially developing states, who are confined by their boundaries and resources, exercise a lesser set of high seas freedoms than coastal States in relation to high seas fishing opportunities. Based on the text, the drafters of Law of the Sea never intended to give less favorable high seas fishing freedoms to land-locked developing States and more favorable opportunities to coastal States. For purposes of ensuring international equity in relation to global public goods, the same common property resource management applied to deep seabed mining should be applied across the high seas. All States should have a realizable rather than a merely theoretical share in the oceans resources.

When the Law of the Sea was negotiated, States could not possibly have meant that the freedom to fish was simply a freedom of opportunity and not a freedom to exercise this right. An ongoing philosophical debate exists between the more specific freedom to exercise a right and a more generic freedom of opportunity. A freedom consists not merely in the "*possibility* of doing certain things (i.e. in the lack of constraints on doing them), but in *actually doing* certain things in certain ways."[52] It is materially different to articulate that minors have an opportunity for education because the State does not get in the way of individuals buying books or consulting teachers in contrast to the State actively facilitating education by building schools and staffing them with teachers. A freedom of opportunity is far more tenuous than a freedom to exercise. The mere opportunity for a State to fish on the high seas does not ensure that States can actually exercise these freedoms if they are economically marginalized because of a combination of post-colonial histories and/or location. The distinction between freedom as an exercise versus freedom as an opportunity is a particularly key concern for land-locked States who have been largely deprived of any direct benefits from the marine commons in part because of the difficulties in negotiating access agreements and in part because of the desperate economic status of many of these States that lack the development opportunities that a coast brings.

If freedom to fish and the right to fish is to be ensured for all States, the freedom to exercise fishing rights may require proactive responses on the part of parties seeking to protect such freedom. Philosopher Charles Beitz observes that "In a world of scarcity…the appropriation of valuable resources by some will leave others comparably, and perhaps fatally disadvantaged. Those deprived without justification of scarce resources needed to sustain and enhance their lives

[51] Elihu Root, "The Real Monroe Doctrine," *Addresses on International Subjects*, Robert Bacon and James B. Scott (eds.) (Cambridge, 1916), 115. (Emphasis added)
[52] Ian Carter, "Positive and Negative Liberty".

might well press claims to equitable shares."[53] When one applies Beitz's reasoning to the high seas fisheries as an global public good contributing to long-term global food security for current and future generations, an actual reallocation of interests in high seas living marine resources may be in order to ensure sovereigns can exercise similar human development opportunities within the *res communis* independent of a "sovereign equal's" geographical location.

Since there is no agreed upon priority legal system of "first in time" applied to the high seas as there is for various riparian systems, ensuring full exercise of the freedom to fish on the high seas must entail an equality of outcome for all States rather than an allocation based on historic usage. The maxim of "equity as equality" is appropriately applied to the high seas. In common law, where two or more individuals are entitled to the same property such as property from a recently dissolved social association where there is no previously specified basis for division, the rule of equality has been applied by courts to determine each members' individual interest in the association's property. Because there is no previously decided basis for dividing the high seas fisheries among States based on population, historical capture practices or date of statehood, then the rule of equality should be applied by default. If the high seas fisheries are deemed international public goods rather than club goods or private goods, States cannot justify a proportional entitlement to high seas catch shares on the basis of past history.[54]

The idea of embedding the concept of equality into international fishery management does not entail strained interpretations of the Law of the Sea. Equal sharing of responsibilities, for example, is integral to the application of Article 63(1) where States that have shared stocks are expected to jointly conserve and develop total allowable catches for these stocks.[55] Equal sharing of benefits and burdens is likewise implicit within Article 87's text requiring that freedoms "be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas."[56] What is needed to remedy the imbalance between those who have actual access to the resources of the high seas and those who have merely a theoretical interest, is a new system of allocation to deliver global public goods in a just manner. In his treatise on fairness, Franck commented that "formal equality of states before the law must be made actual by

[53] Charles Beitz, *Political Theory and International Relations* (Princeton University Press, 1979): 139.

[54] Historical catch limits are used in some Individual Fishing Quota systems as the basis for initial allocations. This approach follows Robert Nozick's "entitlement theory" (*Anarchy, State and Utopia*, [New York, 1974]: 151) which is persuasively challenged by John Rawls' arguments for equal entitlement. (*see e.g. A Theory of Justice*, (Oxford, 1971).

[55] Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources*, (Hague, 1989), 67.

[56] Law of the Sea, Article 87(2).

recourse to notions of justice."[57] There is no single more transparent way of recognizing the formal equality of states to the resources of the high seas than to create a just allocation system based on equal entitlement to *res communis* resources. Unfortunately, this subject has never been broached in conversations about managing high seas fisheries which largely center around concerns over political will and a lack of enforcement.

Franck further observed that "the pursuit of a shared perception of fairness is the necessary starting point for devising any lasting allocational rules."[58] His point is valuable as there has been little effort since the inception of the Law of the Sea invested in the "pursuit" of international fairness regarding living high seas resources. To the extent that "fairness" has been a concern, it has focused on the interest of the "club" members of RFMOs.[59] The following section argues that the reluctance to create conditions of equal exercise of the freedom of fishing is a result of States over-identifying with commercial interests. As a result, basic international legal principles of sovereign equality and distributive justice are now captive to largely private concerns of profit.

III. Nature of High Seas Fisheries and High Seas Fishing

The high seas harvest includes discrete high seas fish such as the orange roughy, oreo dory, toothfish, and pelagic armourhead as well as straddling stocks and highly migratory stocks such as tunas, marlins, swordfishes, pomfrets, sauries, and certain shark species. While it is true that close to 90 percent of the commercial marine stocks are captured within the EEZ, there is still a non-negligible quantity of fish being harvested on the high seas with some estimates suggesting that 9 percent of the marine fishery catch is taken on the high seas.[60] Some of the current high seas harvest results from the creation of EEZ boundaries forcing former "high seas" fishing operations that had been operating relatively close to coastlines to relocate beyond the 200 nautical mile zone. The problems of high seas fisheries are chronic including, an excessively large fishing industry, arbitrary national flagging of vessels, lack of information about high seas catches, and insufficient long-term cooperation between States.

Before discussing the institutional practicalities of a how a revived version of Ambassador Pardo's ocean-wide common heritage might equally allocate marine resources through a proposed centralized high seas auction mechanism, it is critical to understand that high seas fishing practices are far removed from

[57] Thomas Franck, *Fairness and International Law*, (Oxford, 1995), 79.
[58] Franck, *Fairness and International Law*, 13.
[59] RFMOs treat fishery resources within their geographical jurisdiction as club property.
[60] Ussif Rashid Sumaila et al., "As We See It: Potential Costs and Benefits of Marine Reserves in the High Seas," 345 *Marine Ecology Progress Series* 305 (2007): 307.

coastal zone artisanal fishing practices. With the introduction of the EEZ boundary 200 nautical miles from shore, high seas fishing has become an industrial operation requiring large shares of capital investment that may rely on outside financiers. Most of the larger high seas fleets are not cooperative businesses or family owned operations but are owned by national or multinational corporations.

In the current situation, high seas fishing is dominated by a few industrial fishing fleets owned by nationals of some of the most affluent nations of the world. Large--scale industrial fishing began in the decades of the 1940s and 1960s and continues today with Japanese, Chinese, and Korean long-line fisheries, American pole and line fisheries, and European purse-seine fishing. Many of these vessels use cutting edge technology to locate fish[61] and given their size are capable of landing very large catches.[62] No one really knows all of the possible State vessels that are participating in the high seas fisheries. The FAO's High Seas Vessel Authorization Record relies on voluntary compliance from States who share their high seas vessel data. The full records are not made available to the public. Summaries of the record information indicate that only 21 of the 39 parties to the 1995 FAO Code of Conduct for Responsible Fisheries have submitted data to the FAO.[63] Even less is publicly known about the nationality of the owners of high seas fishing vessels.

There is a recurrent political misconception that individual fishing vessels flying a given States' flag serve some sort of proxy function for intangible qualities of sovereign statehood. Proposals to heavily condition a vessel's fishing activities have been regarded as an affront to a State's sovereign interests. This attitude is a product of a pre-globalization era when States were not as economically or socially interconnected as they are today. A United States vessel at the turn of the 19th century would have been owned by an American and probably largely though not exclusively staffed by Americans. Today in the high seas fish industries, an American owner will run a fleet of ships flying a parade of flags with crews hailing from across the continents of world who may not even

---

[61] *See generally* ORBVIEW-2 IMAGING SATELLITE CELEBRATES FIRST ANNIVERSARY IN ORBIT: Over 100 Fishing Boats Already Using Commercial Satellite's Imagery, (1998) available at http://www.orbital.com/NewsInfo/PrinterFriendly.asp?prid=155 (Describing subscription based service for fish finding on the high seas).

[62] Most of the high seas vessels exceed 500 gross registered tons GRT). This number was selected by the National Marine Fisheries Service (NMFS) as an indicator of a high seas vessel. See, NMFS, *World Fishing Fleet*, (1993), p. v. Today, there are high seas vessels such as the Spanish owned and EU flagged Albatun Tres that are registered at 3250 GRT and can allegedly catch carry 3000 tons of fish. See Indian Ocean Tuna Commission Record of Authorized Vessels available at http://www.iotc.org/English/record/record_vessel3.php?vid=10490

[63] High Seas Vessel Authorization Record, available at http://www.fao.org/fishery/collection/hsvar/en

speak a shared language. Because the phenomenon of globalization has transformed the relationship between States, industries, and territory, we need to question the assumptions underlying continued flag state deference on matters of high seas fishery management. If "sovereign equality" and "resource equity" are international principles worth upholding then States must acknowledge that they had duties in relation to other States and not just obligations to corporate entities who lobby the State or participate in an open registry in spite of no actual genuine link with the State.

Who is fishing on the high seas becomes important in terms of understanding what mechanisms may be effective in reducing overcapacity. The parties most interested in gaining advantages on the high seas are largely private enterprises with some state-owned enterprises operating in a commercial capacity rather than a political capacity. Because high seas fleets are corporate entities, they may respond favorably to market indicators designed to limit the market to a more selective group of players. One such market mechanism, a centralized auction of fishing allocations, is discussed in section V below.

IV. High Seas Governance Reforms for Fishing Equity

Internationally, there are copious cooperative agreements such as the 1958 Convention on Fishing and Conservation of the Living Resources of the High Seas[64], Convention on Cooperation in the Northwest Atlantic Fisheries[65], LOS, Straddling Stocks Agreement[66], Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, [67] and International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported, and Unregulated Fishing.[68] Parties are ostensibly cooperating at least from a process perspective—they are meeting and holding relatively civil proceedings. Yet the stocks are still not recovering because there really isn't a

[64] 559 UNTS 286 (29 April 1958) (entry into force 20 March 1966), Article 1(2) provides that "All States have the duty to adopt, or to co-operate with other States in adopting, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas.").

[65] NAFO/GC Doc. 07/4 (amended and renamed 28 September 2007. Formerly named the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries [1135 UNTS 370]).

[66] Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 2167 UNTS 88 (4 December 1995) (entry into force 11 December 2001).

[67] 2221 UNTS 120 (23 November 1993) (entry into force 24 April 2003).

[68] UN Food and Agriculture Organization Council (23 June 2001).

uniform plan that parties are committed to execute to tackle chronic overfishing by fleets owned by nationals of some of the most affluent States.

Reviewing current high seas fishery management practices leaves one with the impression of visiting the attic of an old family house that is in need of re-organization. They are stuffed to the rafters with so much customary and historical practice that the floorboards are sagging, that there is no momentum to embark on a deep-cleaning of high seas fishery policy. When the dream team of diplomatic negotiators begin to talk about how they might unpack this policy attic to reflect the contemporary realities of plummeting stocks, myriad socio-political attachments emerge for various aspects of fishery policy. By the end of the session, very little has shifted and the negotiators cordially agree to meet again to execute a new cleaning scheme. For the past couple decades, current high seas fishery policy can perhaps best be characterized as fossilized.

What is lacking in high seas governance is a centralized institution with adequate financial resources and sufficient enforcement authority to manage allocation of high seas fisheries in a manner that ensures an ecosystem based approach to fishing rather than the "overexploit as usual" strategies. If Ambassador Pardo's "whole ocean" approach had been adopted, then a single governing organizations or limited number of international institutions might have emerged rather than the current broad array of international institutional players including the UN General Assembly, International Seabed Authority, the Food and Agriculture Organization, Regional Fisheries Management Organizations, the Organizations of Economic Cooperation and Development, International Maritime Organization, International Labor Organization, World Bank, and various regional forums such as the Arctic Council. With the exception of the RFMOs and FAO, none of these organizations have high seas living resources as their core competency resulting in a lack of leadership in this area. Given the vulnerability of the high seas to over-exploitation and the significance of the high seas as a global public good, there is an incontrovertible need for a centralized institution that exclusively protects the high seas on behalf of developed and developing countries, coastal and land-locked states, current and future generations.

There is one recent and attractive model for intergovernmental institution building that could theoretically provide engagement among international actors without needing to negotiate the United Nations bureaucracy. On April 4, 2011, the International Renewable Energy Agency (IRENA) came into being supported by national governments but independent of the United Nations.[69] The agency

[69] Statute of International Renewable Energy Agency, (2009) available at http://www.irena.org/documents/uploadDocuments/Statute/IRENA_FC_Statute_signed_in_Bonn_26_01_2009_incl_declaration_on_further_authentic_versions.pdf, (*see generally* Article XIV

was created over the course of four years with a focus on the urgent global need to transition to sustainable energy sources including bioenergy, geothermal energy, hydropower, ocean energy, solar energy, and wind power and to coordinate efforts.[70] The organization has 101 States members as well as 58 new applicants for membership.[71] This is an impressive feat in institution building given how long it has taken some international treaties to be ratified. With a secretariat located in Abu Dhabi in the United Arab Emirates, the organization is simultaneously an information clearinghouse, a networking center, and a group of technical experts who offers policy advice on subjects including incentives to improve market conditions for renewable energy. A similar agency might be created to manage high seas fisheries. There is nothing in the existing Law of the Sea that would prevent additional centralized institution building in order to jointly manage the high seas fisheries. There have been calls from academics and NGOs for a single institution such as an International Oceans Authority.[72]

As IRENA demonstrates, the existence of political will coupled with financing makes new centralized governance options a reality. The creation of a similar institution for high seas fisheries however has certain obstacles that are not faced by the IRENA project. First, at the Third Conference of the Law of the Sea, the States rejected proposals to internationally manage living marine resources through a central institution. In his working paper submitted in 1971, Ambassador Pardo wrote that there was a global need for "strong and equitably balanced international institutions with powers to administer ocean space beyond national jurisdiction and to manage its living and non-living resources on behalf of the international community."[73] The presumption ultimately adopted under the Law of the Sea was for management to be conducted by a plurality of subregional or regional fisheries organizations rather than a single institution.[74] Given the resources that have already been invested in regional fisheries organizations, this model of multi-centered management will be difficult to replace because of political capital that has already been spent as well as careers vested in the institutional status quo. Second, as Stuart Kaye has pointed out in his writing on

---

permitting IRENA to conclude agreements and create working relationships with the United Nations)

[70] Creation of International Renewable Energy Agency, http://www.irena.org/menu/index.aspx?mnu=cat&PriMenuID=13&CatID=30

[71] *Id.*

[72] Kristina Gjerde, *L20 Manifesto on International Fisheries Governance*, (Victoria, Canada, October 2006) (suggesting that possible roles for an authority would include 1)giving scientific support and technical advice to RFMOs, 2) reviewing RFMOs performance, 3)supplying interim management where an RFMO does not exist or does not have conservation and management mechanisms in place and 4)operating a high seas monitoring, control, and surveillance agency)

[73] *Draft Ocean Space Treaty*, p. 111

[74] *Law of the Sea,* Article 118

extending biodiversity protection on the high seas, distant water fishing nations whose EEZs provide insufficient catch levels may balk at the possibility of their nationals having new regulatory regimes applied that may limit their access to high seas resources.[75] Some distant water fishing States have already formed a sense of entitlement to the resources that they are capable of extracting without acknowledging that the high seas fisheries are international public goods and not club goods or private goods.

Response from distant water fishing States such as China, Korea, Japan, Russia, Spain, the European Union and the United States on the basis of self-interested strategic and economic concerns should not go unchallenged. As noted above, if high seas fisheries are global public goods that should be available to each State, it is problematic for States to conflate their sovereign interest in the freedom of fishing that is premised on taking "due regard for the interest of other States" with private corporate interests in biomass extraction. The remainder of this paper is predicated on three key assumptions: 1) high seas fishing is conducted by multi-million dollar business ventures who are not motivated by either conservation concerns or state sovereignty concerns, 2) equity among sovereigns in the high seas should be outcome-oriented and requires initial equality of allocation and 3) centralized management of the high seas is an international public good.

V. High Seas Allocations and Fish Auctions

Assuming a centralized high seas management institution exists, there are various possibilities for market mechanisms that would rationalize the current system of high seas fishing allocations. High seas fishing allocations are usually assigned either through a regional fisheries management organization or through a national process for the approximately three quarters of the world's oceans that are not under the jurisdiction of an RFMO.[76] There is no single set of criteria for assigning an allocation. For example, within various RFMOs, the allocations of high seas tuna are assigned based on a number of factors depending on the RFMO and including, for example, past catches and landings by a State, the economic development needs of a State, or compliance with fishing regulations. [77]

---

[75] Stuart Kaye, "Implementing High Seas Biodiversity Conservation: Global Geopolitical Considerations," 28 *Marine Policy* 3 (2006): 221-226.

[76] Kristina M. Gjerde, High Seas MPAs and Deep-Sea Fishing, unpublished manuscript, at http://www.cbd.int/doc/meetings/mar/ewsebm-01/other/ewsebm-01-gjerde-en.pdf), 24-25

[77] R. Quentin Grafton, Rögnvaldur Hannesson, Bruce Shallard, Daryl Sykes and Joe Terry, "The Economics of Allocation in Tuna Regional Fisheries Management Organizations," *Conservation and Management of Transnational Tuna Fisheries*," Australian National University, Economics and Environment Network, Economics and Environment Network Working Paper-0612 (2006) available at http://een.anu.edu.au.

Private market mechanisms to allocate fish are not new. Most of the efforts have focused on developing Individual Take Quotas (ITQs), Individual Vessel Quotas,[78] Community Development Quotas,[79], territorial use rights,[80] and stock-use rights.[81] While there is growing interest in user market mechanisms with 121 fisheries in 18 countries introducing some form of user rights,[82] States have done little experimentation with extending any of these models of fishing rights to the high seas. Since the high seas resources like EEZs are also being over-exploited and need a system that will curb the current "overexploit as usual" model, assigning private property rights to marine resources should be a key component of any proposed international allocation system beyond the current RFMO and national allocation systems that have been ineffective in reducing fishing capacity. Creating property rights will also change the incentives of legal fishing vessels from tolerating potentially illegal high seas fishing behavior to seeking a remedy through enforcement. The property rights schemes that have been successfully piloted in coastal fisheries[83], however, may not be appropriate for the high seas because of the dynamic of the high seas as a global commons. The remainder of this section describes why an auction mechanism is generally appropriate for allocating high seas fisheries and identifies several proposals from the fishery management literature with innovative marine resource property regimes that are relevant to the high seas.

1. Auction Mechanisms

[78] National Research Councils, *Sharing the Fish: Toward a National Policy on Individual Fishing Quotas*, (Washington D.C., 1999), 121. (Individual vessel quotas have been used in Canadian and Norwegian fisheries to divide the total allowable catch among vessels registered in a particular fishery.); see also Bonnie McKay, "Social and Ecological Implications of ITQs: An Overview," 28 *Ocean & Coastal Management*, 3 (1995):4. (Individual vessel quotas are also referred to as enterprise allocations ensuring that corporations engaged in the fisheries would more economically utilize their vessels and processing plants than they could when they were competing for a scarce resource.)

[79] National Research Councils, Sharing the Fish, 124-125 (Assigned to communities such as Native Alaskan populations to improve economic development—proceeds from sales of the licenses are re-invested in fishery-based economic activities such as port facilities.)

[80] Timothy Emery et al., "Are Input Controls Required in Individual Transferable Quota Fisheries to Address Ecoystem based Fisheries Management Objectives?", 36 *Marine Policy* 122 (2012): 123; see also, National Research Council, *Sharing the Fish*, 134

[81] National Research Council, *Sharing the Fish*, 134

[82] Emery et al., "Are Input Controls Required", 123

[83] Christopher Costello, Steven Gaines, and John Lyman, "Can Catch Shares Prevent Fisheries Collapse?", 321 *Science* 5896 (2008): 1678-1681. (Finding that if catch shares had been implemented in 1970 only 9% rather than 28% of the fisheries would have collapsed)

The decline in living marine resources is a classic tale of excess demand from consumers and excess supply of product purveyors.[84] Auctions change this dynamic by seeking the highest available price for a limited resource by limiting the market availability. The idea of an auction as a means of addressing scarcity has been popularized since Garrett Hardin introduced his thinking on the tragedy of the commons. He proposed as a reasonable possibility for managing the commons "an auction system."[85]There is much to recommend auctions as fair market mechanisms. A properly constructed auction clearly defines what entitlement or good is being sold. It avoids underhanded corruption by providing a transparent process for the sale of rights and a clear rule of assigning a property right to the highest bidder. From a political perspective, auctions are apolitical. In their early phases, auctions allow for full participation and operate as a somewhat democratic market tool. A bidder's connections are irrelevant for the outcome of a properly conducted auction.

There are numerous types of auctions that could be explored as models for conducting high seas fishing allocations.[86] For example, standard auctions, such as a fine arts house auction, permit a seller to receive simultaneous open bids from buyers with information about price being communicated among all participants during each round of bidding. Double auctions post bids and offers from numerous buyers and sellers. First-price auctions operate on the basis of sealed bids with just one round of bidding and the goods going to the highest sealed bidder.

Based on economics research, the ideal type of auction for a sale of similarly situated objects such as fish catches is a "ascending clock auction with a final sealed round." This type of auction relies on the intervention of an auctioneer operating between the seller and the bidder. As Ausubel observes, when objects are more or less the same, it can be advantageous to have an independent auctioneer rather than sellers naming the price while bidders in response to the price name quantities that they are interested in purchasing.[87] In a large market, bidders are likely to request quantities that will exceed the quantity that is available resulting in the auctioneer increasing the price and calling again for bids. In this auction process, auctioned items will more quickly receive their full valuation as prices increase to meet the demand for the limited quantity.

---

[84] Theodore Geisel, The Lorax, (New York, 1971) (From the narrator "I meant no harm. I most truly did not. But I had to grow bigger. So bigger I got. I biggered my factory. I biggered my roads. I biggered my wagons. I biggered the loads.")

[85] Garrett Hardin, "The Tragedy of the Commons," 162 *Science* 3859 (1968): 1245

[86] See generally Lawrence M. Ausubel, Implications of Auction Theory for
New Issues Markets, Markets. Brookings- Wharton Papers on Financial Services. Available at: www.ausubel.com/auction-papers/auctions-for-new-issues.pdf.

[87] Lawrence Ausubel, Implications of Auction Theory, 317.

Round (10 available items)	Bids
Price $1	A=10 B=5 C=5 D=5 (exceed item number)
Price $2	A=8 B=2 C=3 D=5
Price $3	A=5 B=0 C=3 D=5
Price $4	A=4 B=0 C=2 D=5
Price $5	A=3 B=0 C=2 D=4 (FINAL PRICES)

This type of auction was used successfully for the Electricité de France generation capacity auction and the United Kingdom emissions trading scheme auction.[88] An ascending clock auction may be appropriate form bidding on high seas allocations. To enhance revenues for sellers, it may be appropriate for high demand stocks such as tuna to add a sealed final proxy auction round.[89] Under this model, when the demand has nearly been lowered to meet the supply through a linear ratcheting up of the price, a final round of bidding is opened for bidders to pay any sum. This is particular important where the "clock auction" has generated only minimal revenue because competing buyers are intentionally keeping prices low.

2. Innovative Proposals

There have been a number of innovative proposals that have not yet been piloted which offer interesting allocation models for the high seas. Many of these are based on auction mechanisms and generally targeted at domestic fisheries within EEZs with some exceptions discussed below[90] In 1999, the United States

[88] Id.; See also Lawrence M. Ausubel, and Peter Cramton, "Auctioning many divisible goods," 2 *Journal of the European Economic Association* (2004):480-493. Available on the Internet at: www.cramton.umd.edu/papers2000-2004/ausubel-cramton-auctioning-many-divisible-goods.pdf.

[89] Lawrence M. Ausubel, Peter Cramton, and Paul Milgrom, "The clock-proxy auction: A practical combinatorial auction design" *Combinatorial Auctions*, Peter Cramton, Richard Steinberg, and Yoav Shoham (eds.), (Boston, 2006): 115-138.

[90] Auctions have a long history in the fishing industry in terms of how wholesalers purchase fresh fish. For example, at the Tsukiji fish market in Tokyo, Japan, tuna are regularly auctioned to the highest bidders.

Fishing quota auctions conducted by States are more rare but have been used in the U.S. domestic Geoduck fishery, Estonia and Russia. The efforts in Estonia and Russia were terminated because of pressure by the fishing industry that did not want to pay royalty fees. Elena Anferova et al. "Fish quota auctions in the Russian Far East: A failed experiment," *Marine Policy* (2005): 2947–56; Magrit Eero, Markus Vetemaa and Rögnvaldur Hannesson, "The quota auctions in Estonia and their effect on the trawler fleet," *Marine Resource Economics* 20 (2005) : 101–112.

Chile has been exploring in Article 27 of Law 18,092 using auctions in its fishery allocations. *See* Torbjorn Trondsen, *Fish Quota Auction Opportunities for Chile* (2010), 29-30 available at http://triton.nfh.uit.no:86/Forskning/Kvoteforvatning/Torbjorn_Trondsen_Fish%20Quota%20Auction%20report_%20end.pdf (Commenting that auction royalty fees collected from private actors

National Academy of Sciences devoted several pages to analyzing the viability of auctions as a competitive market mechanism that could be used for allocation. The authors suggested that an auction will "promote the economically efficient use of resources by allocating goods to their highest-valued uses."[91] Focused on domestic markets, the National Academy authors recognized that there are also fairness issues in allowing shares to be allocated through an auction mechanism but that these concerns might be addressed through public loans or through allowing only those parties that were previously participating in the fishery to bid on the quota.[92] Most significantly, the authors identified auctions as tools to serve the public good since an "auction can be used as a mechanism by which to decrease windfall profits to initial recipients, allowing the public to be compensated for the private use of a public resource."[93]

While the National Academy authors were not contemplating property rights on the high seas since their mandate was to review the viability of Individual Fishing Quotas in US fisheries, the authors observed more generally that one means of reducing conflict in a fishery is to apply the "rule of equal opportunity" so that an initial allocation of a total allowable catch is "in equal shares."[94] But, following this approach, they suggested "the shares may be insufficient, leading to pressures to buy and sell them, which may result in sharp inequality of access over time unless other resources are available."[95] This discussion is particularly important for the proposal that follows in the next section. The National Academy authors recognized that private owners cannot be assigned equal shares because the resources are "declining resources"[96] leading to undue competition among the players. What they do not discuss is whether equal shares may be appropriate where the environment for allocation is not one of competition between players but rather cooperation, particularly obligatory State-to-State cooperation to conserve and restore stocks.[97] Ensuring equity exists between private actors has different considerations than equity between sovereign states.

Several fisheries scholars have suggested that some form of auction may be appropriate for high seas stocks. Trondsen, Matthiasson, and Young's work on straddling fish stocks is particularly informative. Looking at the blue whiting fishery, Trondsen and his coauthors propose that RFMO members pool their

---

should be reinvested in high seas industries rather than State programs to avoid problems with political will)

[91] National Research Council, *Sharing the Fish,* 144.

[92] *Id.*

[93] *Id.*

[94] *Id.* at 147.

[95] *Id.* at 148.

[96] *Id.*

[97] Law of the Sea, Article 119(1)(a).

allocations of fish into a multinational cooperative and then auction the shares to industry.[98] The cooperative would be responsible for ensuring that each member received the appropriate revenue given the number of shares put into the pool and the location of the fishing license.

Schmidt and Cox have called for high seas ITQs with initial allocation based on fishing history or with allocations "given to each nation in the United Nations with fishing nations or coastal states getting a larger share of the initial allocation." The shares would then be available to be traded on the market or used by each State.[99] Cox earlier proposed a two tier fishery with a certain proportion of a quota allocated as a stable quota to founding members of RFMOs with the remainder of the quota being allocated to an auction for both RFMO and non-RFMO members.[100] Crothers and Nelson, in a proposal similar to Trondsen, Matthiasson, and Young's, proposed an auction mechanism for distributing access rights by High Seas Fishing Management Corporations.[101] Townsend and Pooley in their proposal for shared governance between local fisheries management institutions and the government suggest that auctions might be used to allocate corporate fishing shares just as oil production on the continental shelf has been auctioned.[102]

Chand, Grafton, and Peterson have proposed a two-tier allocation of the available high seas stocks whereby each country in an RFMO would first receive fixed shares of a fishing areas' total allowable catch which could then be used or traded by vessels belonging to RFMO members.[103] Auctions play a small role in a proposal by Grafton, Hannesson, Shallard, Sykes and Terry who suggested that a small percentage of an RFMOs total allowable catch in a fishery could be auctioned to "permit the regional fishing management organization to help

---

[98] Torbjorn Trondsen, Thorolfur Matthiasson, and James A. Young. "Towards a market-oriented management model for straddling fish stocks". *Marine Policy* 30 (2006): 199-206; *see also* Torbjorn Trondsen "Toward market orientation: the role of auctioning individual seasonal quotas (ISQ)," *Marine Policy* 28 (2004): 375–382.

[99] Carl-Christian Schmidt and Anthony Cox, Tackling Incentives to Overfish, prepared for the Conference on International Fisheries Governance, Victoria, Canada, 30-31 October 2005. Available at http://dspace.cigilibrary.org/jspui/handle/123456789/28733

[100] Anthony Cox, *Quota Allocation in International Fisheries*, OECD Food, Agriculture and Fisheries Working Papers, No. 22 OECD Publishing (2009), 40.

[101] Crothers and Nelson, High Seas Fisheries Governance: A Framework for the Future.

[102] Ralph Townsend and Samuel Pooley, "Distributed Governance in Fisheries" in *Property Rights and the Environment: Social and Ecological Issues*, Susan Hanna and Mohan Munasinghe (eds.), Beijer International Institute for Ecological Economics and the World Bank (1995): 55.

[103] Satish Chand, R. Quentin Grafton and Elizabeth Petersen. 2003. "Multilateral governance of fisheries: Management and cooperation in the Western and Central Pacific tuna fisheries." *Marine Resource Economics* 18: 329-344 (A similar proposal was made by Grafton et al., "The Economics of Allocation in Tuna Regional Fisheries Management Organizations,")

monitor and enforce the allocations at a country level, and also ensure individual vessels meet the required codes of practice."[104]

Pontecorvo and Schrank have argued that in a core fishery, managers could assign long-term rights to a single group of fishers who have agreed to invest in the fishery for the long-term. If there is any surplus of fish beyond the core take limit then the fish could be auctioned off to fishers without a long-term interest in the specific fishery. [105] The auction proposal described in the section below takes a different tack by not focusing on historic capture entitlements or the necessity of property rights but rather on marine resources as global public goods that should be equitably divided among sovereigns in order to ensure the exercise of the freedom to fish for all states including landlocked states.

VI. Proposed Logistics of Institutionalizing and Conducting High Seas Fish Auctions

For any high seas fishing allocation system to work, it must meet some basic requirements. As Gordon Munro and his colleagues argued in a paper in 2004, a system to share stocks must make all "players" better off, have mechanisms to prevent defection from the system, and must have a strong resilient legal framework. [106] This proposal for a global high seas fishing auction attempts to address these concerns by emphasizing the triple goals of equity for States, transparency for fishing operators, and robust enforcement. The challenge will be to translate State's "freedom of fishing" into acceptable fishing allocations for high seas fishing operations. At the outset, it is worth mentioning that State nationals and State flagged vessels do not automatically have legal "rights" in high seas fisheries even though many nationals and vessels operate as if they have an unconditional right to fish located in high seas jurisdictions. Instead of rights, States have recognized freedoms. But freedoms are not boundless; when an exercise of a freedom disenfranchises another State of its freedom, then the parameters of the original freedom must be reconsidered.

Equity concerns are largely ignored by the current system of national fishing quotas and RFMO allocations. This proposal for global fish auctions is a re-imagination of the rules of sharing for marine resources, which are nominally renewable shared resources like a watercourse but in practice are often exploited

[104] Grafton et al., "The Economics of Allocation in Tuna Regional Fisheries Management Organizations," 12.
[105] Giulio Pontecorvo and William E. Schrank, "A Small Core Fishery: A New Approach to Fisheries Management," 25 *Marine Policy* (2001): 43-48.
[106] George Munro, Annick Van Houtte, and Rolf Willmann, *The conservation and management of shared fish stocks: legal and economic aspects*: *FAO Fisheries Technical Paper. No. 465*. (Rome, 2004): 57-58

through extraction races as one-off non-renewable resources like gold veins. A single multilateral institution modeled on the International Seabed Authority is necessary for overseeing a carefully controlled auction of high seas fish allocations that include discrete high seas fishing stocks, highly migratory fish, and ideally straddling stocks depending on the confidence that the states sharing the resource have in the institutional competency of a central body to fairly manage an auction.

The remainder of this section describes some of the practicalities of implementing a centralized auction system such that high seas ecosystem values are protected, states are given equitable consideration in the process, and companies are provided with secure property rights.

a. Large Marine Ecosystem (LME) caps and quotas

In terms of physical spaces, there are numerous ways to chart the high seas from RFMO boundaries to FAO administrative regions to biologically relevant delineations. This paper argues for the urgent need to link social governance systems with ecosystems.[107] No marine governance system currently does this. Ecologists have invested research and resources into mapping large marine ecosystems. Approximately 64 such areas from the East Bering Sea to the Benguela Current to the New Zealand Shelf have been delineated as LMEs by marine ecologists.[108] Since there are no LMEs outside of the continental margins, one of the first efforts for conservation and management beyond national jurisdictions should be to identify either new high seas LMEs or to connect the high seas to existing LMEs. While the high seas do not seem to have the sheer concentration of biodiversity that the EEZs have, there is an urgent need to understand more about the ecology of the high seas ecosystems. As of July 2011, we have yet to describe some 91% of the species in the oceans with many of these species residing at some point of their lives in the high seas.[109]

In order to address equal access to high seas fish as public goods, this paper proposes an auction of fishing allocations. After LMEs have been identified, independent marine ecologists will set a cap on how much biomass can

[107] Victor Galaz et al., "The problem of fit among biophysical systems, environmental and resource regimes, and broader governance systems: Insights and emerging challenges" in *Institutions and Environmental Change - Principal Findings, Applications, and Research Frontiers,* Oran Young, Leslie King, and Heike Schröder (eds), (Cambridge, USA, 2008): 147-182.

[108] United States National Oceanic and Atmospheric Administration, Large Marine Ecosystems www.lme.noaa.gov/LMEWeb/downloads/lme64_blackwhite.pdf

[109] Camilo Mora, Derek Tittensor, Sina Adl, Alistair Simpson, and Boris Worm, "How Many Species Are There on Earth and in the Ocean?" *PLoS Biol* 9(8) (2011): available at http://www.plosbiology.org/article/info:doi/10.1371/journal.pbio.1001127

be extracted from each LME in light of acidification, fish disease, and other marine phenomena that are already impacting the health of the living marine resources in the various LMEs. Independent of any economic concerns, the scientists will calculate this cap for both exclusive high seas LMEs and LMEs that include EEZ waters. After peer review, these numbers will be published along with any publicly available information on total allowable catches. At the same time, teams of scientists will be asked to set a take limit for each viable commercial species present within a given high seas portion of LME. Based on knowledge about how certain fish are extracted, the total take for each commercial species or set of related commercial species in an LME will be further divided into fishing methods including purse seining, long-lining, and trawling. The setting of each LME cap and the take of each species will be conducted on a regular basis to revisit the health of each LME and of the species within LMEs.

The intent behind repeat assessments of the fisheries at the level of the LME is to transition to a truly ecosystem based management scheme rather than a management scheme based on single species or political boundaries. Unfortunately, this is not merely a scientific endeavor involving comparing and contrasting the merits of various fishery models but also requires a reliable political commitment. The identification of biological limits alone has not prevented the collapse of stocks of many commercial species, such as the North Sea cod. Therefore, States must agree to conform their political fishing caps with caps designated on the best available science.

One of the greatest hurdles in piloting a high seas auction is how to incorporate auctions into a legal geography that already includes the United Nations Fish Stock Agreement and numerous institutions engaged in straddling and migratory stock management for tuna. Coordination will not be simple in light of vested interests by various coastal States. One possibility would be to focus on stocks that are truly discrete high seas stocks such as orange roughy, oreo dories, alfonsino, toothfishes, armourheads, hoki, certain populations of sea basses, certain populations of snappers, and certain populations of jacks.[110] There is currently no international regulatory system for all of these species albeit there has been multilateral attention from RFMOs on certain toothfish species.[111] This would simplify the implementation of the system but may not justify the creation of a whole international institutional framework. The bigger question for the high seas is not simply the survival of key species but the health of the larger

[110] Food and Agriculture Organization, *The state of world highly migratory, straddling and other high seas fishery resources and associated species*, (Rome, 2006): 49-56.

[111] Commission for Conservation of Antarctic Marine Living Resources Toothfish, http://www.ccamlr.org/en/fisheries/toothfish-fisheries (Describing thirteen fisheries licensed under the RFMO and seven exploratory fisheries)

ecosystems of which straddling stocks and migratory stocks are key components.

b. Auctioning of shares based on stock and LME health

Based on the caps designated for each commercial species in the various LMEs, each state will receive an equal share of the take quota regardless of the historic fishing effort of a given country or the location of the country. A centralized high seas fishing office will set a minimum price per share based on the predicted costs of high seas enforcement including pre-fishing inspection of boats, centralized satellite monitoring, LME patrols, regular port inspections of catches, and assignment of independent observers. Such an office would be preferably located and staffed within an organization with some experience in surveillance and enforcement such as Interpol or the UN Office on Drugs and Crime. This office will consult with other ocean related UN institutions such as the FAO and UNEP, but will be independent of these other organizations and agencies.

After the ecosystem caps have been drawn and the take quotas announced, what each State will end up with is an array of shares representing a fishing interest in all of the high seas waters but subdivided by LME. Depending on the location of the stock, States may choose to hold their high seas fishing shares and either sell them at the reserve rate to nationals from their State[112] who are also expected to comply with the conservation and enforcement measures described below or retire them. For example, if the U.S. holds a certain number of high seas shares of a straddling stock from an Alaskan based LME, it might sell these to Alaskan high seas fishermen at the reserve price or it might retire these shares in hopes that a reduced fishing effort in the high seas portion of the LME will improve fish numbers within the U.S.'s EEZ. The remaining active shares for stocks will be placed on an open market available to industry fishing groups who have provided proof that the vessels that will be assigned the quota are registered on a centralized high seas registry,[113] are equipped with an operating Vessel Monitoring System, and have the capacity to participate in an electronic catch documentation scheme. It may even be feasible, given the size of the vessels

[112] This provision which has the potential to remove a sizable number of catch shares from the State to industry auction is necessary because of Article 116 of the Law of the Sea which provides that "All States have the right for their nationals to engage in fishing on the high seas." By allowing States to hold their shares preferentially for their nationals, the system will be honoring each State's right. In light of the broader auction concept, it bears mentioning that under the Law of the Sea nationals do not have an independent right to fish on the high seas and nationals do not have a cause of action against their State if their State chooses not to hold shares for its nationals.

[113] See e.g. Deidre Warner-Kramer, Control Begins at Home: Tackling Flags of Convenience and IUU Fishing, 34 *Golden Gate U.L. Rev.* 497 (2004): 500. Registration is critical for regulation. As of 2001, 1300 fishing vessels were flying an "unknown flag"

involved in harvesting high seas fisheries, to require the current best technology of electronic monitoring which allows for monitors to more accurately estimate the total catch amount, the species distribution and the discards.[114]

These requirements are safeguards to protect legal actors in the high seas fisheries and make it easier to distinguish authorized fishing vessels operating in specific waters. In preparation for the auction, the centralized fishing authority must set reserve prices for the shares. The reserve prices must at a minimum cover "attributable" and some "avoidable" costs.[115] Attributable costs will include the costs associated with conducting the auction and monitoring catches. Avoidable costs may include enforcement efforts to protect against illegal fishing and some contribution to the side payments that will be necessary in the first years of the auction system to prevent IUU fishing by parties who are unable or unwilling to obtain sufficient allocations. Any revenue beyond the reserve price per share will be deposited with the country holding a given set of sold shares.

On a set day, the market will open for bidding for a limited period of time. Fishing vessels will bid for individual marine stock shares located in a particular region and extracted using a particularly fishing method. Depending on the difficulty associated with enforcing conservation measures in a particular fishery, different opening reserve prices may be set.[116] The ascending clock-proxy method described in the section above is probably a sound system for conducting the high seas auction. The shares will be sold to the highest bidder as in any commodity auction. What distinguishes this proposal from a more general commodity auction is the specific lot approach. Instead of bidding generically on fish or on a single species, the stocks offered would be highly specific. Parties would bid, for example, on Orange Roughy in a given LME fished using trawling technology. States will have various sale strategies. Countries with large numbers of high seas fishing nationals may sell their global shares quickly at the reserve price. Countries hoping to financially benefit beyond the reserve price may wait until near the close of the auction period before putting their shares up to bid even though this may carry the risk of their shares being retired if no industry member purchases the shares. Conservation groups may have their own strategies. They

[114] Danish Technical Univeristy Aqua National Institute of Aquatic Resources, http://www.aqua.dtu.dk/English/News.aspx?guid={D08D3AEB-76E2-413C-9679-3B55B6BEFD7E} In trials initiated in 2008, the Danish outfitted a number of volunteer commercial fishery vessels with closed circuit television cameras (providing view of the aft deck and closer views of the fish handling areas and discard chute areas for catch identification), a GPS receiver, a hydraulic pressure sensor, a gear rotation sensor and a system control box. Data from this equipment was collected and processed for more accurate catch statistics.

[115] National Research Council, p. 163. (The auction model incorporates costs through a per-unit sum attached to each quota share.)

[116] Tuna fisheries and other migratory species have dispersed fisheries that may require broader surveillance than a geographically contained groundfish fishery.

may agree to privately subsidize certain vessels that they believe are sustainably fishing in order to raise the price of fish shares for fleets that are externalizing environmental costs.

At the close of this auction between State and fishing industry, private companies will have the opportunity to re-assess what fishing shares they have bought. Every fishing fleet will have its own strategy of how best to access the high seas fishing grounds. Because the high seas fishing business today is a heavily capitalized, legally sophisticated industry that is concentrated under the control of a discrete number of owners, States will not have to educate private fishing actors on purchasing strategies.

After the State to industry auction, a second public auction will open where parties who obtained shares in the first round of the auction can trade shares in order to maximize their interest in just a few fisheries. As the sale of internet domain names demonstrated, it is surprising what some willing buyers might pay willing sellers[117] and for some fishing industry participants, trading allocation shares may prove as profitable as actually fishing. In a rational fishing world where fishing companies have to pay for inputs such as fuel and crew time, the high seas fishing effort at the conclusion of the auction should be concentrated among a smaller number of vessels than are currently fishing. During this phase, fleets that are eligible for high seas fishing licenses but were unable to obtain shares during the State to industry auction may purchase shares from other industry members. In both the State to industry auctions and the industry to industry auctions, there must be safeguards put into place to avoid collusive, entry-deterring and predatory behavior on the part of participants.[118] For example, sanctions must be available for parties that default during the bidding. As Klemperer recounts, Australia, the U.S. and India have all had trouble with winning bidders with no easy recourse for the government.[119] One possibility is to require all parties in a high seas fish auction to put money equivalent to their bids into an escrow account or face penalties.

Each final fishing allocation will have additional conservation measures incorporated depending on the LME such as designation of marine protected areas, no-take zones or seasonal closures. These conservation measures can be developed in negotiation with existing RFMOs who will be released from management responsibilities for high seas areas and directed to focus instead on

[117] In 2009, Internet marketing firm QuinStreet purchased Insure.com and its media assets for $16 million. Insure.com had purchased the domain name in 2001 for approximately $1.6 million. *See* Press Release Insure.com Announces $16 Million Asset Sale, Continuation of Business under Life Quotes Brand Name, 9 October 2009 http://www.insure.com/ir/releases/pr100909.html

[118] Paul Klemperer, "What really matters in auction design," *Journal of Economic Perspectives* 16(1) (2002):169-189.

[119] *Id.*

developing biologically effective conservation and restoration policies. To some degree, this is not a radical re-imagination of these institutions since many of the RFMOs have been unable to focus on management because of a lack of needed enforcement authority and resources. Conservation measures should further adaptive governance goals and be capable of being revised to reflect changes in the ecosystem health that may not be directly linked to overfishing such as acidification. Given the current dominance of certain fleets on the high seas, one reasonable condition for licensing would be for each industrial fishing vessel to carry at least two independent on-board observers who will be assigned to review environmental and labor practices on board the ship while at sea.

An additional allocation condition related to boarding and inspection might be considered to alleviate the existing challenge of high seas enforcement which has been traditionally carried out by the flag state who is expected to "exercise its jurisdiction and control in administrative, technical and social matters."[120] Nationally-based high seas enforcement has proven problematic because of the cost and the sheer amount of ocean to cover. Internationally-based high seas enforcement has never been explored as a strategy but may be appropriate in this proposed auction system that attempts to split public national interests in healthy oceans and fair allocations from private corporate interests in resource extraction. A possible boarding and inspection condition may require private fleets fishing on the high seas to agree in advance to boarding and inspection by any vessel authorized by the central high seas fishing enforcement office irrespective of the inspecting vessel's nationality. Related to this boarding and inspection condition might be a condition whereby private fleets agree to submit to the jurisdiction of an administrative tribunal designated to hear alleged IUU cases or gross violations of conservation measures against fishing right holders. In the more straightforward cases involving minimal overages beyond the quota, the tribunal may create a presumption that parties would have to subtract from its catch limit in subsequent auction years the amount of excess fish that it had already taken or be subject to fines that would be sufficient to deter future overfishing.

This additional condition in the auction process would not be a violation of the Law of the Sea's deference to flag states. Here, private actors would be able to freely contract for a new relationship between themselves and international enforcement institutions. What is currently a matter for public international law would become a private international law matter. This allocation condition should be uncontroversial for those vessels that comply with agreed upon conservation and management practices. A vessel would only be likely subjected to inspection if the onboard independent observers, a whistleblower, or

[120] Law of the Sea, Article 94

another vessel (including military ships, other fishing vessels, or civil society watchdog vessels) identify practices in violation of the allocation quantity, the fishing method, or the location for fishing.

Transparency is paramount in terms of distributing information about who has the legal right to fish in a given LME. At the close of the two-step auction, the results of the auctions will be publicly posted as well as sent to an enforcement office. The public announcement of the permit holders might stimulate additional monitoring and surveillance by civil society groups who could follow the VMS tracking for unusual patterns of fishing or for violations of location. In some instances, civil society groups may be able to assist under-equipped developing coastal states to ensure that high seas licensees are not impacting resources within EEZs. As of today, States cannot avail themselves of this sort of civil society watchdog role since high seas VMS data is not publicly available because of concerns of competition and piracy.

VII. Strengths and Weaknesses of High Seas Fish Auctions as Management Tools

Any early iteration of a high seas auction would likely be limited to discrete high seas fisheries since there are no coastal States that can proclaim partial entitlements as they might for straddling or migratory stocks. This means that it will be many years before high seas fish auctions would rise to the challenge of delivering science-based global fishery management. The proposal in this paper is more than simply a thought experiment since there needs to be an alternative to existing high seas management institutions which have not proven capable of timely and effective impact in alleviating environmental stresses.[121] The proposal in this paper is an attempt to create new institutional capacity where none currently exists. There is need for a paradigm shift in regulated management beyond the coastal state and geographically bound regional fisheries management organizations to address the recurring causes of unsustainable high seas fishing which include inadequate domestic governance, excess capacity, IUU fishing, and distorting subsidies. When the seabed authority and the Exclusive Economic Zone were proposed as fundamental legal concepts for the newly negotiated regime of the sea, skepticism abounded. Yet these concepts have transformed marine legal practice and relations between States. The idea of a high seas fishery auction has the potential to address longstanding equity concerns that were not resolved in

[121] *See e.g.* Secretary General's High-level Panel on UN System-wide Coherence in the Areas of Development, Humanitarian Assistance, and the Environment (Illustrating that fragmentation is inadequate to address global issues by evaluating the minimal policy impact of 20 UN organizations collaborating on water and energy issues)

1982 when the LOS was adopted, and modernize an industry to reflect best environmental practices.

From a cost-sharing perspective, the auction approach is a reasonable policy. The permits operate as an upfront tax on legal fishing activity which shifts the financial burden of monitoring from state budgets to private contributions. As a specific market intervention in a currently unregulated market, geographically assigned fishing allocations serve a triad of purposes. First, they protect each State's sovereign interest in a shared international public good and ensure some tangible benefits from living marine resources for each State. Second, they protect resources at the appropriate ecological level. Finally, they internalize the private costs of using a public resource.

The key legal benefit from implementing this system is the formal recognition that each State has a vested interest in high seas marine living resources for which they are entitled to some benefit. The proposed rights based system respects "freedom of fishing" while providing a rational structure to protect public goods and the means to enforce against overfishing. The auction system represents a form of concrete cooperation in fulfillment of existing obligations under the Law of the Sea, Straddling Stocks Convention, and other marine agreements. Once the central institution has been designed and implemented, States will no longer need to focus their cooperation efforts on allocation which will be controlled by scientists and market forces; allocation will become largely an administrative rather than a political matter. Indirectly, this auction system with its contract allowing for licensed ships to be boarded and inspected by more entities than the flag state may reduce the number of at-sea reflaggings. The system presents no incentive for legitimate ships with auction quotas to reflag and plenty of incentive for licensed ships to report ships who are reducing the value of their quotas by illegally fishing.

An effective use rights system will narrow the set of possible users, making for more manageable monitoring if the number of vessels operating on the high seas drops as would be expected through the concentration of fishing allocations. [122] With the cooperation of industry members who have vested interests in the system informing enforcement officers as soon as they see suspicious activity, there could be more rapid deployment of enforcers resulting in more timely apprehension of illegal fishing vessels. Additionally, if total allowable catches are properly set to reflect ecological stressors beyond simply take of the target species, an auction based system such as the one proposed here may improve the resilience of high seas stocks to various stressors.[123] The

[122] Anthony Charles, "Use Rights and Responsible Fisheries: Limiting Access and Harvesting through Rights-Based Management," in *A Fishery Manager's Guidebook: Management Measures and their Application- Fisheries Technical Paper No. 424*, Kevin Cochrane (ed.), (Rome, 2002.)
[123] *Id.*

centralized auction approach avoids the problems of management that arise between RFMO members and non-members competing for similar resources.

From the perspective of the fishing industry, the auction system should theoretically provide for better prices for fish on the market because it will control for the problem of oversupply that is currently being exacerbated by illegal fishing.[124] Based on results of a 2008 meeting with experts in the high seas trawling industry, the legal private fishing industry should be amenable to this chapter's auction proposal. Experienced skippers and fleet managers agreed that quotas, like those which would be sold under the proposed auction system, would be effective fishery management tools as long as there is sufficient enforcement to protect legal fishers.[125] In particular, the private industry representatives championed efforts to limit overall fishing effort on the high seas. As long as the market mechanism is properly capitalized, centralization and standardization of the market should protect State interests, property holders, and the long-term productivity of marine resources.

Yet there are instantly identifiable challenges in implementing an auction mechanism that need to be addressed upfront to avoid subsequent disputes among States as well as among fishing fleets. A primary direct challenge that would need to be confronted is the problem associated with high-grading. Once a vessel has been assigned a particular quota from an auction then the fishing operation will be focused on specifically capturing its target species in order to fully exercise its property right. This could result in high levels of bycatch as vessels take on fish that are not part of their quota and dispose of them overboard. Existing ITQ systems struggle with this problem since it is the landings of fish and not the catches that count towards quota shares.[126]

Aninnovative approach to address inevitable bycatch would be an issuance of licenses to collect bycatch in conjunction with commercial stocks. The winner of the commercial stock license would have the first option to purchase the bycatch licenses which could then be sold into an open market to fish oil or fish meal producers. The long-term viability of this additional auction would depend on whether the bycatch had sufficient market value as fish oil or fish meal to justify the extra expenses in possibly launching an additional "bycatch" vessel if the hold of the commercial fishing vessel is at capacity. The presence of additional "bycatch" vessels on the high seas might inadvertently promote

[124] Ragnar Arnason, Kieran Kelleher, and Rolf Willmann, The Sunken Billions: The Economic Justification for Fisheries Reform (World Bank and FAO, 2008) (Finding a $50 billion global loss due to poor management of fishery governance which includes losses due to IUU fishing)

[125] FAO Fisheries and Aquaculture Circular No. 1036, *Deepsea Fisheries in the High Seas: A Trawl Industry Perspective on the International Guidelines for the Management of Deep-Sea Fisheries in the High Seas*, (Rome, 2008): 7.

[126] McKay, "Social and Ecological Implications of Individual Fish," 12.

opportunities for additional fish-laundering by the subsidiary ships as the additional vessels take on some amount of unpermitted commercial stocks. Until fleets build international confidence in their ability to self-report accurately, monitoring and enforcement will remain essential at all levels of a high seas fishery. One potential tool for promoting more accurate self-monitoring of bycatch is a creation of a bounty system funded by fines levied by either flag states or the central fish auction institution on vessels that are in gross disregard of conservation measures.

In addition to the challenge of bycatch, there is the difficulty of promoting stewardship by auction permit holders. In order for parties to invest in a resource, there need to be incentives for parties to protect resources rather than simply act as short-term lessors who may not benefit from long-term conservation measures. One possibility is for auction permits to be allocated for multiple years to the same licenseholder on the condition that the take quantity could be changed based on annual calculations of TAC. If an initial TAC was set too low, a permit holder's allocation may need to be adjusted but the fleet would continue to hold the same proportion of the fishery and therefore the same market share. To further stimulate active stewardship, if a permit holder implements certain conservation measures that demonstrably improve the health of a stock, States may agree to preferentially increase the TACs for these permit holders.

Economists interested in efficiency might balk at the proposal above because of its transaction costs in holding repeat auctions. This is a legitimate concern. One possibility is to structure the State-private fleet auction in a manner that more closely mirrors a system proposed by Young called the "Australian Drop-Through System."[127] Modeled on a stock capitalization scheme, the fishery would release initial quota shares for a set period of time (License A) with somewhat insecure property tenure on the license. During that period of time, the managers would review the entitlements and based on their review of the health of fishery would issue new entitlements (License B) that would have stronger property tenure. License A holders would be encouraged to change to License B which they would hold for the remainder of the entitlement period which could be many decades. The process would only have so many iterations before either the license period was finished or no more modifications were necessary to protect the fishery.

A second possibility for addressing the trend towards monopolization may be to adopt some of the suggestions for zero revenue market auctions.[128] Under

[127] Michael Young, "The Design of Fishing Rights Systems- the New South Wales Experience," *Ocean and Coastal Management* 28 (1995):54–61.

[128] National Research Council p. 144 ; Michael Young and Bonnie McKay, "Building Equity, Stewardship and Resilience into Market-Based Property Rights Systems", in *Property Rights and*

this auction mechanism, rights holders are expected on a regular basis to open some of their existing rights of exploitation or use to the market. The rights holders receive right of first refusal after the auction and will have a choice between buying back the right at the cost of the highest bid (hence the "zero revenue") or being paid for the sale of the right. The value in this model is that it permits new entrants into a market. Assuming that the transaction costs are not excessive in establishing either the initial Australian Drop-Through System or the zero revenue auction, then both of the systems should avoid excessive administration costs.

The greatest direct challenge to the success of high seas auctions as an effective high seas fishery management strategy is sufficient enforcement. Assuming a competitive auction mechanism, some fishing fleets would be winners and others would be losers. For those vessels that have lost a business opportunity to fish, they may not be graceful losers but may retaliate in the form of increased IUU fishing. Focused state-based enforcement would be essential in the first years of auction implementation to ensure that vessels do not benefit from free-ridership. Side-payments are likely to be necessary to parties that fail to secure property rights in early iterations of the auction. Some of these side-payments may help certain fleets to transition into fisheries where they already have a larger competitive advantage or to help other fleets to transition out of high seas fishing into other livelihoods such as aquaculture or value-added fish processing. States may also need to collectively provide retraining opportunities as well as opportunities for private owners who are exiting the fishing industry to sell vessels at favorable market rates.[129]

Two additional indirect challenges exist in the form of potential long term monopolies and new pressures on EEZs of States with already weak governance. In issuing permits, the system would need to guard against the creation of long-term monopolies. Presently, there are too many players in the world fishing industry who are plying the high seas. After full implementation of an auction mechanism and assuming that there is no substantial leakage of vessels into illegal fishing efforts because of effective enforcement efforts, there is the possibility of having too few actors competing in an auction. Long-term monopolies might lead to low rates of returns on fishing permits as well as less reporting of overfishing since vessels will be less likely to report improper fishing activities within a single-owner fleet. To the extent that economic power could be heavily

---

the Environment: Social and Ecological Issues (ed. Susan Hanna and Mohan Munasinghe) Beijer International Institute for Ecological Economics and the World Bank (1995): 87-103, 93

[129] One potential model would be the U.S. Cash for Clunkers program which provided rebates for citizens to purchase more fuel-efficient cars. Rebates might be offered to provide opportunities for vessel owners to engage in closed system aquaculture or other emerging activities such as marine protected area efforts.

concentrated in the hands of a few of the largest fishing multinationals, unintended monopolies might be countered by restricting the percentage of auction shares that can be purchased by a single group of owners.

Finally, the implementation of this system would need to develop some sort of safeguard to ensure that the auction mechanism does not inadvertently put additional stresses on the EEZ of states with weak enforcement mechanisms. While initial pressures on the resources of the high seas arose post-LOS in part because of the designation of EEZs, the implementation of an auction mechanism may result in vessels that are either unable or more likely unwilling to obtain permits, returning to the EEZs of States that lack sufficient capacity for surveillance, monitoring, and enforcement. This may be particularly detrimental for developing coastal States who would have to contend with vessels that had previously operated largely in the high seas crossing illegally into their EEZ waters to conduct fishing operations. Since the multilateral boarding and inspection process for infractions on the high seas would not apply within the EEZ, the former high seas vessels would be able to operate with impunity if the coastal state lacks enforcement resources. If the high seas auction infrastructure is in place, it might be possible for a developing nation to opt to have all or a portion of their EEZ managed by an auction process similar to the proposed high seas auctions with the proceeds from licenses allocated entirely to that country. This could provide some needed marine science capacity building for States that currently lack adequate resources to set fishing limits that are protective of the larger ecosystem.

In spite of some potential misgivings in implementing an auction approach, the dual strengths of having one body with oversight over fish management and creating a new transparent relationship between States and the industry overcome the potential faults of the system. If the auction mechanism fails to improve ecosystem conditions in the oceans, it would be because we had already reached tipping points such as ocean acidification or because nations refused to commit the political will and monetary resources that are essential for international organizations to succeed in their infancy. In an age when the increasing rate of global climate change with its long-ranging consequences can seem demoralizing as a global commons challenge, the challenges of managing high seas fisheries present most States with a unique problem-solving opportunity rather than another opportunity cost for States. The high seas fisheries allocation is a problem that unlike climate policy has far fewer factors to control and is located beyond any State's singular jurisdiction. The high seas must be an incubator for cooperation. Short of enforced fishing moratoria by every State that flags vessels on the high seas, there is no unilateral action on the part of flag states that will be sufficient.

The high seas auction model is a new model to enforce the venerable

concepts of equity and cooperation in a dynamic political space. Statesman Benjamin Disraeli is credited with saying that "In a progressive country change is constant; change is inevitable."[130] This is also true of international and transnational relations where change can help to fulfill the promise that is inherent in just relations. Relations between States will change after the model's implementation—they will be based on full sovereign equality. Relations between companies will change since vessels that fail to implement best practices in order to participate in the auctions will be unable to compete. Relations between customers and fish will change since the price of fish caught on the high seas will reflect the costs of effectively managing environmental resources. Consumers can and will adapt to change overtime. The bigger question is whether industry and States can adapt? In the face of impending regulation, industry has proven itself nimble and quick to address certain environmental challenges. [131] Will States reject change and remain conservative—what will they be conserving? The status quo?

VIII. Concluding Thoughts

The impact of this high seas equity auction proposal is limited in protecting fishery resources because 90% of the fishing of commercial stocks occurs within EEZs and not on the high seas. The impact of this auction is much more broad in terms of promoting equitable concerns that the existing implementation of the Law of the Sea have failed to address. Some critics are quick to dismiss these ideas as utopian, citing for example, the lack of political will and democracy.[132] It is not the role of law to transform political will since politically crafted law, which includes the necessary treaties to make a centralized ocean auction possible, is the handmaid of political will. It is, however, the role of international justice, law's other avatar, to seek equitable solutions to social problems.

These are days that demand state leadership at the highest levels to address historic inequities. It seems as long as there are fish in the nets and on the lines, States are willing to accept unhealthy and scarce stocks as the new norm. In doing so, States have rejected their equitable obligations to this generation and to future generations. By conflating individual business interests with collective sovereign

[130] Elizabeth Knowles, *Oxford Dictionary of Quotations* (Oxford, 1999): 269.
[131] Leaving aside some of the more complicated issues of HCFCs as greenhouse gases, industry was relatively quick to transition from ozone-depleting substances to non ozone-depleting substances once HCFCs were readily available rather than pushback against the emerging international and domestic regulatory regimes.
[132] Rognvaldur Hannesson, "Rights Based Fishing on the High Seas: Is it Possible?" *Marine Policy* 35 (2011): 667–674.

interests, States have neglected to effectively protect public international goods. The proposal in this paper is one attempt to reconcile States sovereign interest in the freedom of the seas with the reality of a diminishing resource and with the need to address the socioeconomic component of equity among coastal and land-locked States as well as developed and developing States.

What is most concerning about the current fishery crisis is not that independent fishing fleets are maximizing profit. We should expect that. Rather, the lack of coordinated State response to explore publicly managed and enforced solutions is disconcerting. What model will work in a given situation requires a flexible governance approach with parties open to experimentation. Whatever allocation system is ultimately designed for the high seas, the managing entity will need to collect reliable biological data on healthy fisheries, assign manageable costs for permits, and ensure the legitimacy and transparency of the process.

In 1983, Phillip Allot wrote that the LOS convention is largely a jurisdictional framework that answers questions like "who am I? who is that over there? where am I? what may I do now? what must I do now?"[133] In some part, these questions emerged from the "me generation" of the 1980s. While fishing fleets may still be asking themselves these very same questions, States must ask a different set of questions by replacing the "I" with the "we" to include the public at large. Perhaps States would answer these questions as follows. We, the coastal and land-locked parties to the Law of the Sea and the Straddling Stocks Convention, are stewards for this generation and subsequent generations. We may choose to continue to permit the exploitation as usual practices as part of the "freedom of fishing" but we do so at our own peril of depleting a fundamental component of food security. Therefore, we must exercise our public authority equitably and responsibly before we lose our narrow window of opportunity to collaborate and cooperate as sovereign States instead of contending as corporate competitors.

[133] Philip Allott, "Power Sharing on the Law of the Sea" 77 *American Journal of International Law* (1983): 8.