Law and ‘the Last Frontier” – the Contested Role of Law in Relation to Marine Living Resources

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1 Introduction

This text is a contribution to a volume dedicated to discussions on whether there is or can be 'law without the State'. However, as will be shown here the regulation of marine living resources is characterized by an increasing rather than decreasing presence of the State and of positive law. What still makes it relevant to discuss the role of positive law in the utilisation and preservation of the living resources of the oceans in this context is a fundamental tension characterizing this area. It is a tension between on the one hand the so-called freedom of the seas, and on the other hand the interests of States to control and regulate marine living resources for their own individual benefit or for the preservation of the resources as such. This situation contains several dimensions that have been of varying significance over time. One such dimension is the conflict between unilateral and multilateral approaches to exercising jurisdiction over the resources of the oceans. Another is between a laissez-faire or 'open for all' attitude to these resources and one premised on regulated (unilaterally or multilaterally) utilization, at least partly in order to prevent uncontrolled exploitation of the resources. As will be seen there are also indications that the challenges posed to resource conservation and management by State sovereignty and the fact that much of the oceans consists of areas beyond national jurisdiction may perhaps be effectively overcome only when the positive law is supported by coordinated action by non-state actors.

2 Historical Background

The right as well as the ability to utilize marine living resources is functionally linked to and has historically developed in close relation to the right to access different parts of the oceans, i.e. the right of navigation. For that reason it is appropriate initially to give some consideration to the wider concept of the freedom of the sea and the freedom of navigation.

The roots of the law of the sea, and at least indirectly of the regulation of marine living resources can be traced back at least to classical antiquity when seafarers such as the Rhodians and the Romans developed the first known laws pertaining to human activities on the seas. Particularly the codification of the commercial practices of the seas known as the Rhodian sea law heavily influenced maritime codes developed in Europe well into the Middle Ages. However, most known classical writing on the topic is of roman origin. These sources have often been interpreted to mean that the classical time was strongly influenced by the idea of the sea, or more specifically the Mediterranean, being a *res communis* or a resource open for all to use.[1] But it is questionable how much can be inferred from statements such as the sea being 'common to all

1 Anand, R. P., *Origin and Development of the Law of the Sea: History of International Law Revisited*, Martinus Nijhoff Publishers, The Hague, 1982, pp. 10-11; Bederman, D. J., *The Sea*, in Fassbender, B. and Peters, A. (eds), The Oxford Handbook of the History of International Law, Oxford University Press, Oxford, 2012 (online edition), section 2.1.

men'.[2] In those days the current distinction between ownership (dominium) and jurisdiction (imperium) was not as elaborate and there is much to suggest that the Romans did in fact lay claim to imperium over the Mediterranean even though they did not accept any claim of dominium over it.[3] It is also not clear that the absence of dominium implied a freedom to appropriate the natural resources of the sea.[4]

Towards the late Middle Ages States and other sovereigns, such as Genoa, Venice, France, England, Denmark and Sweden, started to make claims of sovereignty, or 'empire', over sea areas adjacent to their land territories.[5] Such claims often included control of fisheries.

In 1493 Pope Alexander VI devided the non-Christian world between the two major explorers and colonizers of the time, Portugal and Spain. A demarcation line was drawn from pole to pole west of the Azores and Cape Verde in the Atlantic and the two powers were granted title to all the land they 'discovered' in their respective spheres. In addition to the land titles this led to Spanish claims to control the Pacific Ocean and the Gulf of Mexico and similar Portuguese claims with regard to the Atlantic Ocean south of Morocco and the Indian Ocean.[6] However, these claims were not generally accepted and were rejected in particular by England and the Dutch republic.[7]

2.1 Mare clausum or mare liberum

Although different aspects of human uses of the seas were debated, without much consistency being achieved, even before the 17th century it is the writings of Hugo Grotius (1583-1645) that have come to symbolize, among other things, the emergence of the law of the sea as a legal discipline. However, when writing his famous work *Mare Liberum* in defence of the freedom of navigation Grotius drew heavily on Roman sources and was most probably also much influenced by earlier writers, including Spanish publicists opposing

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2 This is held in Justian's *Institutes*, Justian Dig XLI.3.45 as quoted in Bederman *supra* note 1, section 1.1.

3 Bederman, *supra* note 1, section 1.1. In the Indian Ocean a more genuine freedom of the seas seems to have prevailed during antiquity as well as during what in Europe is known as the middle ages. Although sea-based trade between Asian kingdoms and communities was at times thriving the dominant powers, including India and China, were largely land powers and did not much attempt to control the seas beyond suppressing piracy. Anand, *supra* note 1, p. 34.

4 Anand, *supra* note 1, p. 83.

5 Bederman, *supra* note 1, section 1.2 and Anand, *supra* note 1, pp. 84-85.

6 Anand, *supra* note 1, p. 44.

7 Treves, T., *Historical Development of the Law of the Sea*, in Rothwell, D. R., Oude, A. G. Elferink, Scott, K. N., and Stephens, T., (eds), The Oxford Handbook of the Law of the Sea, Oxford University Press, Oxford 2015, p. 3.

the Spanish and Portuguese claims to control navigation on the oceans.[8] Grotius wrote *Mare Liberum* in the context of a legal opinion commissioned by the Dutch East India Company.[9] While the company at home had a monopoly on trade with the East Indies it was fervently opposed to the Portuguese claims to control navigation in that region.[10] One of Grotius main objectives was thus to defend free navigation in the Indian Ocean and he based his arguments primarily on the notion, supported by Roman sources, that the sea cannot be occupied.

In fact the idea of *mare clausum*, i.e. the sea being divided between States, was more in line with prevailing ideas and practices at the time of writing. Grotius' arguments were also much contested by other scholars.[11] Nonetheless, the freedom of the seas eventually came to prevail. Not so much by winning over ideological opponents but because it suited the political and economic forces of the age, dominated as it was, from a European perspective, of exploration, colonization and a constant quest for new opportunities to trade. During the 18th century *mare liberum* came increasingly to correspond with the interests of Britain, France and the Netherlands. Mercantilist ideas and competition for raw materials and markets between the different sea nations made free navigation seem to be in the common interest. Particularly if the alternative was extensive claims to control by coastal States threatening that freedom.[12] By the 19th century freedom of the seas had become firmly established.

2.2 Coastal States and Maritime Powers

When the principle of *mare clausum* gradually gave way to *mare liberum* during the late 18th and 19th centuries it became more important to define what right States have to exercise control of the sea immediately adjacent to their coastline, mainly for security reasons. However, claims to such zones, of varying breadth and under various names, had been made already in earlier centuries. Whereas the range a human vision from the shore had strong supporters as a natural delimitation of the coastal States' claim to control a near consensus eventually emerged around the equally vague principle that control could legitimately be claimed over the expanse of the sea which could be reached with a projectile fired by a cannon on the shore. Whether this translated into a general claim to territorial dominion over a continuous

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8 He was also, most likely, well aware of the until then prevailing principles of free navigation adhered to in Asia. Anand, *supra* note 1, p. 86.

9 It was initially published anonymously as *Mare Liberum* in 1609.

10 In fact what prompted the writing of *Mare Liberum* was a dispute concerning the legality of the capture, by a Dutch squadron, of a higly valuable Portuguese galleon in the Straits of Molucca. Bederman, *supra* note 1, section 2.3.

11 Among them the Portugese friar Serafim de Freitas who, in 1625, published a book entitled (as translated) On the Just Empire of the Portuguese in Asia.

12 Bederman, *supra* note 1, section 2.4.

maritime belt or zone, or rather reflected the fact that control could de facto be exercised thus far from ports, cities and fortifications is less clear. Anyhow, this in equal measure pragmatic and imprecise 'cannon shot'-rule, subject as it was e.g. to change due to the technological development of cannons, was from the late 18th century gradually replaced by the more stable and 'formalistic' three-mile maritime belt. But differences remained with some States, inter alia in Scandinavia, claiming a four-mile belt and others significantly more.[13] The major maritime powers tended to support the three-mile limit since more extensive claims were not perceived to be in their interest. Increasingly, claims were made for zones of differing breadth and filling specific purposes, such as preventing smuggling or regulating fishing, by the early 20th century it was hard to discern any consistency between claims for maritime zones.[14]

2.3 Fisheries

Fisheries jurisdiction had for long been highly contentious in parts of Europe. The British and the Dutch even fought several wars prompted by clashing claims to attractive fisheries.[15] Interestingly, in the early 17th century England seems to have opposed exclusive fishing rights only to start, a few years later, to require any foreign vessel wanting to fish in its coastal waters to obtain a licence.[16] Britain only gave up its claims for extensive fisheries jurisdiction in the late 18th century when the emergence of a strong British fishing fleet, and the relative decline of the Dutch fleet, made such claims no longer to the best of Britain's interest. Through a succession of treaties entered into during the 19th century, including ones between Britain and France and one between several North Sea coastal States, three miles became the accepted standard for fisheries jurisdiction. [17] It was not that a three mile zone had any particular logic for fisheries regulation; it was rather a corollary to the three mile zones established for other purposes.

However, technological developments, including bigger and more seaworthy and eventually steam-powered trawlers that easily covered large expanses of the sea soon made the tree mile limit seem utterly inadequate for preserving coastal fisheries from overexploitation by foreign fleets. This led many countries to push for an extension of the territorial sea to six miles or for the application of exclusive fishing zones beyond the tree mile limit. These attempts were staunchly opposed by the British who, with by far the largest and most efficient fishing fleet in Europe, had much to lose and little to gain from any expansion of exclusive fishing rights.

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13 Anand, *supra* note 1, pp. 139-140.

14 Anand, *supra* note 1, p. 141.

15 Anand, *supra* note 1, p. 146.

16 Treves, *supra* note 7, p. 3.

17 Anand, *supra* note 1, p. 146.

In 1893 the award in the so-called *Fur Seal Arbitration* confirmed, although in the context of sealing, that a coastal State could not unilaterally regulate activities on the high seas for the conservation of a migrating species.[18]

Although various bilateral and some multilateral agreements on fishing were adopted during the late 19th and early 20th century no consensus could be reached on a general standard for fishing jurisdiction and British opposition to any extension of coastal State jurisdiction even resulted, in 1930, in the failure of the League of Nations Codification Conference to codify rules on territorial waters.[19]

3 Development of Modern Rules on Jurisdiction

In 1945 President Harry S. Truman issued two proclamations greatly extending the areas over which the United States (US) claimed jurisdiction. The first, and more radical, was the Continental shelf proclamation according to which the US regarded the natural resources of the subsoil and sea bed of the continental shelf beneath the high seas but contiguous to the coasts of the US as appertaining to the US, subject to its jurisdiction and control.[20] This claim to the natural resources of the whole continental shelf contiguous to the coast went far beyond what had until then been recognized by international law and reflected the increasing importance and technical availability of oil reserves in the seabed.[21] The second proclamation, which concerned high seas fisheries, held, with reference to the pressing need for conservation and protection of fishery resources, that conservation zones should be established in those areas of the high seas contiguous to the coasts of the US wherein fishing activities had been or in the future may be developed and maintained on a substantial scale.[22] However, this unilateral control was only to apply where fishing activities had been or would be developed and maintained by US nationals alone. It did not entail that only US nationals would be allowed to fish in these areas although all fishing would have to be in accordance with rules set by the US.

Inspired by these declarations several Latin American States soon claimed sovereign rights on their continental shelves and in the so called Santiago Declaration Chile, Ecuador, and Peru proclaimed that they each possessed exclusive sovereignty and jurisdiction over the sea along the coasts of their

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18 Award between the United States and the United Kingdom relating to the rights of jurisdiction of United States in the Bering's sea and the preservation of fur seals, Decision of 15 August 1893, Reports of International Arbitration Awards, Vol. XXVIII, pp. 263-276.

19 Anand, *supra* note 1, p. 148-9.

20 Proclamation 2667 - Policy of the United States With Respect to the Natural Resources of the Subsoil and Sea Bed of the Continental Shelf 28 September 1945.

21 Treves, *supra* note 7, p. 11.

22 Proclamation 2668 - Policy of the United States with Respect to Coastal Fisheries in Certain Areas of the High Seas, 28 September 1945.

respective countries to a minimum distance of 200 nautical miles from these coasts.[23]

From the late 1950's to the mid 1970's Iceland gradually extended or proposed to extend its exclusive fishery zone from 2 to 200 nautical miles. This was fervently disputed, not least by the United Kingdom (UK) and even resulted in three so-called 'Cod Wars' between the two countries. Despite their popular name they were not wars in the strict sense, but did involve certain use of force.

In 1974 the International Court of Justice (ICJ) found, in a case initiated by the UK against Iceland, that the Icelandic unilateral extension of its exclusive fishing rights to 50 nautical miles from the baselines was not opposable to the UK and that Iceland was not entitled unilaterally to exclude UK fishing vessels from areas between the 12-mile and 50-mile limits. The court also described it as 'one of the advances in the maritime international law, resulting from the intensification of fishing, that the former *laissez-faire* treatment of the living resources of the sea in the high seas has been replaced by a recognition of a duty to have due regard to the rights of other States and the needs of conservation for the benefit of all.'[24] It found both Parties to be obligated to keep under review the fishery resources in the disputed waters and to examine together the measures required for their conservation and development.

This finding was largely the result of the first UN Law of the Sea Conference convened, at the recommendation of the International Law Commission, in 1958 in order to address, inter alia, territorial waters and high seas fisheries. The Conference resulted in four different conventions: the Convention on the Territorial Sea and the Contiguous Zone; the Convention on the High Seas; the Convention on Fishing and Conservation of the Living Resources of the High Seas; and the Convention on the Continental Shelf. Although all of them entered into force between 1962 and 1964 none attracted a sufficient number of parties to firmly establish a new and coherent legal order for the oceans.

In 1960 a second UN Conference on the Law of the Sea was convened to consider the breadth of the territorial sea and fishery limits, issues that had not been agreed upon in the Conventions adopted in 1958. However, no agreement resulted from this conference. While the United States and other major maritime powers of the time preferred to maintain the three mile territorial sea, most could accept its extension to six miles. That, however, was utterly insufficient in the eyes of most African and Latin American States who saw it as a way to maintain a system seriously skewed in the favour of rich European and North American States, many of them former or present colonial powers.[25]

Nonetheless, the codification process led, as evidenced by the above quote by the ICJ, to developments in general international law. The work of the ILC

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23 Declaration on the maritime zone. Signed at Santiago on 18 August 1952 [1976] 1006 UNTS 325.

24 Fisheries Jurisdiction Case (United Kingdom v. Iceland), Merits Judgment of 25 July 1974, ICJ Rep. 3, para 72. A similar case was decided between Iceland and Germany.

25 Anand, *supra* note 1, p. 180.

and subsequently the 1958 Convention on Fishing and Conservation of Living Resources of the High Seas saw the emergence of limitations on the freedom of fishing on the high seas. But these limitations were only in the form of generally phrased requirements on high seas fishing States and coastal States to cooperate in the adoption of such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas.[26]

As is well known, a third UN Conference on the Law of the Sea was eventually convened with a mandate to 'adopt a convention dealing with all matters relating to the law of the sea'.[27] It resulted, in 1982, in the adoption of the Law of the Sea Convention (LOSC). Mainly by taking a global approach to all contentious issues, thereby enabling a balance to be struck between all major groups of States and across a range of issues, the conference succeeded in establishing a widely accepted legal regime for exercising jurisdiction in relation to different parts of the seas. Particularly important for the present discussion is that the LOSC confirmed that coastal States may establish a so-called exclusive economic zone (EEZ) of up to 200 nautical miles in which they have 'sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone'.[28] The establishment of an EEZ does not restrict the freedom of navigation and allows other States to engage in various other lawful activities, such as the operation of ships, aircraft and submarine cables and pipelines, in compliance with the relevant provisions of the Convention.[29] Beyond the outer limit of the EEZ the regime for the high seas, as defined in LOSC Part VII, applies.

4 Jurisdiction Over High Seas Fishing

Although the establishment of EEZs vastly expanded the proportion of the seas under (partial) coastal State jurisdiction so-called 'areas beyond national jurisdiction' still comprise almost 2/3 of the oceans. Here the fundamental tenet is that the high seas are open to all States and that this entails a number of freedoms, to be exercised under the conditions laid down by the LOSC and by other rules of international law. The freedom comprises, inter alia, freedom of

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26 Takei, Y., *Filling Regulatory Gaps in High Seas Fisheries - Discrete High Seas Fish Stocks, Deep-sea Fisheries and Vulnerable Marine Ecosystems*, Martinus Nijhoff Publishers, Leiden & Boston, 2013, pp. 21-22 and Convention on Fishing and Conservation of the Living Resources of the High Seas (HSFC), Geneva, 29 April 1958, Art 1.

27 UNGA Res 3067 (XXVIII) [1973].

28 United Nations Convention on the Law of the Sea (LOSC), 10 December 1982, Montego Bay; in force 16 November 1994, 1833 UNTS 397, Art 56.

29 LOSC, Art 58.

navigation, freedom of scientific research,[30] and freedom of fishing. The freedom of fishing is subject to certain conditions laid down in section 2 of Part VII of the LOSC. These include, for all States, a duty to take, or to cooperate with other States in taking, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas.[31] States also are required to cooperate in the conservation and management of living resources in the areas of the high seas. States whose nationals exploit identical living resources, or different living resources in the same area, shall enter into negotiations with a view to taking the measures necessary for the conservation of the living resources concerned. To this end they shall, as appropriate, cooperate to establish subregional or regional fisheries organizations.[32]

The obligation to cooperate and to develop regional fisheries management organizations (RFMOs) have been heeded to a large extent. In fact, a number of such organisations were already operating when the LOSC was negotiated. However, these provisions of the LOSC were soon deemed insufficient, e.g. because they do not sufficiently clarify which States are required to co-operate, what form the cooperation should take, and what rights nationals of States which do not participate in such cooperation have.[33] This led to the negotiation and in 1995 adoption of the so-called Fish Stocks Agreement, which aims to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the LOSC.[34]

According to its Article 8 States are, in order to give effect to their duty to cooperate, expected to become members of RFMOs which have the competence to establish conservation and management measures for particular straddling fish stocks or highly migratory fish stocks if they are fishing for these stocks on the high seas. Significantly, only States which are members of such RFMOs, or which agree to apply the conservation and management measures established by these organizations, shall have access to the fishery resources to which those measures apply. The Fish Stocks Agreement thus obliges States fishing certain stocks on the high seas to become parties to relevant organisations or at least to apply the conservation and management measures decided by such organisations. The Agreement also includes provisions on enforcement, including boarding and inspection. This is a significant departure from the idea of fishing on the high seas being a 'free for all' activity. Although the agreement is formally concerned with 'Straddling Fish Stocks and Highly Migratory Fish Stocks' it is clear that it also, at least in

30 Subject to LOSC Parts VI and XIII.

31 LOSC, Art 117.

32 LOSC, Art 118.

33 Takei, *supra* note 26, p. 56 et seq.

34 United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (in force as from 11 December 2001), Art 2.

some parts, applies to so-called discrete high seas fish stocks.[35] Article 8 of the Fish Stocks Agreement is often said to 'institutionalize' the duty to cooperate for the conservation and management of fish stocks.

However, the Fish Stocks Agreement only has about half the number of Parties as the LOSC, i.e. about 80 compared to over 160. That means that many States, including those with significant distant water fishing fleets, are not subject to these rules. As a consequence of State sovereignty and the so-called *pacta tertiis* principle, i.e. that States do not incur obligations through treaties to which they are not parties, ships flying the flag of such States may continue to engage in high seas fisheries without respecting the conservation measures adopted by relevant RFMOs. Although some States have tried to counteract this, e.g. by restricting access to ports for such vessels, or by taking trade measures directed at the States concerned, this remains a significant challenge to the effectiveness of RFMOs since 'free riders', to which the freedom to fish still applies in its more unmodulated form, can undermine the conservation efforts of RFMOs.[36] In fact, the state of many fish stocks is very problematic with significant overfishing, particularly of highly migratory, straddling and other fishery resources that are fished solely or partially in the high seas.[37]

5 Jurisdiction Over Marine Genetic Resources

Whereas the regulation of fishing at sea is centuries old the appropriate way to regulate marine genetic resources is a more novel bone of contention, which, however, adheres to a similar logic to that of fisheries regulation. Genetic material from marine living organisms, often ones that live in extreme environments in the deepest parts of the oceans or by so-called ocean vents where geothermally heated water issues, have become increasingly interesting, not least for the pharmaceutical industry. Certain such resources are expected to represent very high value for those who can access them and turn them into products.

With fishing the main distinction is between resources in the EEZ, which are essentially controlled by the coastal State, and resources on the high seas which, subject to the duty to cooperate on their conservation and management, are in principle open to all. With respect to genetic resources of the deep sea beyond the continental shelves and thus the jurisdiction of any coastal State, there are instead competing and quite different legal regimes that could apply to the same resource. A specific legal regime governs the deep seabed beyond national jurisdiction, referred to by the LOSC as the 'Area'. Although this was somewhat watered-down by the 1994 Agreement relating to the

35 Takei, *supra* note 26, p. 260.

36 Rayfuse, R., *Regional Fisheries Management Organisations* in Rothwell, Oude Elferink, Scott, and Stephens (eds), Oxford Handbook of the Law of the Sea, Oxford University Press, Oxford, 2015, p. 439 at p. 444.

37 *The State of World Fisheries and Aquaculture*, FAO, Rome, 2014, p. 41.

implementation of Part XI of the LOSC,[38] which introduced more market oriented principles, the area is still chiefly governed collectively, through the International Seabed Authority (ISA) and resources of the deep seabed are regarded as a common heritage of mankind.[39]

For reasons that will not be elaborated here it is, however, far from evident that the living resources of the deep sea and their genetic material fall under the legal regime for the Area, even when those resouces are bound to the seabed. An alternative view is that the provisions of the Area only apply to minerals and other non-living resources, whereas organisms and their genetic material fall under the regime of the high seas. For living resources found in the water collumn above the deep seabed the regime of the high seas is really the only option. While the view that all resources linked to the deep seabed are governed by the rules of the Area leads to a requirement that the benefits derived from such genetic resources must, at least partly, be divided among States according to equitable principles, the opposite view essentially implies that, like with fisheries, anyone who can explore the resource also reaps the benefits.

Like with fishing, States tend, with some exceptions, to support the legal view that furthers their own self interest. The G 77 group of developing countries and China have tended to insist on the genetic resources being a common heritage whereas some advanced marine powers, including the United States, Russia, Norway and Japan, have been in favour of a 'first come, first serve' approach to the utilisation of these resources.[40] Both groups of States have been sceptical about the elaboration of specific rules to deal with this issue, something that has been promoted primarily by the EU. However, recently many States have come to view the idea of elaborating a new agreement more favourably and in 2015 the UN General Assembly decided to develop an international legally binding instrument under the LOSC on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.[41] The agreement is expected to address not only management of marine genetic resources but also, inter alia, the preconditions for establishing protected areas in the high seas. Although the fundamental tension between more elaborate collective governance of natural resources versus more unrestrained access for individual States remains, it seems that the free-for-all-approach to marine living resources is set to be further restrained and access subjected to more collectively decided rules.

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38 Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, New York, 28 July 1994, 1836 *UNTS* 3.

39 LOSC, Art 136.

40 Tladi, D., *Conservation and Sustainable use of Marine Biodiversity in Areas beyond National Jurisdiction: Towards an Implementing Agreement* in Rayfuse, R. (ed) Research Handbook on International Marine Environmental Law, Edward Elgar Publishing, Cheltenham, 2015, p. 61.

41 UNGA Resolution 69/292, Development of an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, 6 July 2015, A/RES/69/292.

6 Prospects

As has been concluded, 'the issue is no longer whether some fisheries activities should be regulated or unrestricted, but who should undertake the appropriate regulatory functions and what the extent of these should be.'[42] But despite the strong trend of extending formal jurisdiction and legal obligations over the oceans the idea of the seas as a 'last frontier' still exists and is not entirely without merit. A combination of limitations to the law (*pacta tertiis*) and so-called illegal, unreported and unregulated (IUU) fishing makes high seas fishing seem party lawless, in more than one sense of the word. This situation has long been exacerbated by lax or non-existent enforcement of existing rules by some flag States. Commercial actors have been able to register their ships with 'flag of convenience' States which are either not parties to the Fish Stocks Agreement and relevant RFMOs, or which in any case don't exercise any meaningful level of control over ships flying their flag. In that way less conscientious actors can determine what legal requirements relating to high seas fisheries they will be subject to.

Fortunately from a conservation perspective, the level of IUU seems to be declining, in some regions quite significantly so. This development appears to have come about partly by means of the strengthening of legal regimes by the States concerned, but also, and perhaps decisively, through the strong involvement of private actors such as environmental NGOs and responsible fishing companies in enforcing these regimes vis-à-vis non-parties.[43] Since nationals of non-parties to the Fish Stocks Agreement and relevant RFMOs, i.e. in practice ships flying the flag of such States, are not bound by conservation measures decided by the RFMOs there are significant limits on what measures officials of parties to these organizations can take to prevent IUU fishing. However, private actors may be more unrestrained and nimbler than States in taking less formal sanctioning or enforcement measures such as publicly exposing companies involved in IUU fishing and their financiers. They may also be effective in collecting and disseminating information regarding IUU activities as they take place. Although this is not a case of non-state rulemaking it shows that at the outer limits of legitimate State control concerted action by non-state actors may significantly enhance the effect of positive law arrangements.

Another factor that is likely to increasingly affect the management of marine living resources is the development and dissemination of more effective and accessible technologies for monitoring fishing efforts. This takes the form e.g. of sonar buoys, pilotless vehicles, vessel detection systems, and long-range

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42 Orrego Vicuña, F., *The International Law of High Seas Fisheries: From Freedom of Fishing to Sustainable Use* in Schram Stokke, O., (ed), Governing High Seas Fisheries: The Interplay of Global and Regional Regimes, Oxford University Press, Oxford, 2001, p. 23 at p. 25.

43 Österblom, H., Bodin, Ö., Sumaila, U. R., Press, A. J., *Reducing Illegal Fishing in the Southern Ocean: A Global Effort, Solutions* "www.thesolutionsjournal.org" Vol. 4:5: (2015), pp. 72-79.

radar.[44] As these technologies become more accessible the role of non-state actors in monitoring and enforcement of conservation measures is likely to become ever more important and cooperation between industry actors who oppose 'free riders' and between them and RFMOs may become a vital part in effectuating conservation decisions.

Technology is also likely to further increase traceability of the products resulting from high seas fishing. More determined and coordinated action on the part of conscientious actors in the fishing industry may also contribute. This will lead to better preconditions for reliable labelling, which in turn enable active consumer choices. Consumer boycotts directed at specific companies rather than just the avoidance of certain species of fish or fish from certain areas may ensue. However, with a highly globalized industry this is likely to require concerted action by many actors, otherwise such efforts are likely to be easily circumvented.[45]

It is also quite possible that the emergence of ever more data, generated by accessible and dispersed monitoring technologies, will lead to increasing pressure, not least from non-state actors, for more forceful enforcement action by RFMOs and individual States. If such calls are heeded that could undermine the respect for the overall multilateral regulatory system and its principles on jurisdiction.

The development of voluntary but effective codes of conduct within the fishing industry is unlikely to develop beyond specific fisheries. At least not without very substantial pressure of an official (e.g. state-imposed measures such as refusal to let ships operated by certain companies or flying certain 'flags of convenience' access ports) as well as private (e.g. internationally coordinated campaigns by NGOs backed up by parts of the fishing industry) nature. Although there are large actors in the global fishing business, some of which operate across oceans and continents, there is still such a multitude of actors and markets that effectively shutting out free riders or those intent on 'playing the system' is very hard. That kind of behaviour benefits both from the nature of the overall legal system, notably the freedom of the high seas, and the more or less global nature of many markets.

So although there is a general trend towards increased multilateral rulemaking in relation to high seas fishing the effect of such efforts is likely to depend at least partly on the ability of private parties, both commercial and policy-driven, to support conservation measures and apply pressure on those actors not formally bound by such measures or not subject to any effective enforcement by the State/s expected to do so under the international legal regime.

It should also be remembered that the current trend towards increasing law-based collective management of the living resources of the seas is premised on

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44 On these technologies, see e.g. Miller, D. G. M., *Occupying the High Ground: Technology and the War on IUU Fishing* in Vidas, D., Law, Technology and Science for Oceans in Globalisation, Martinus Nijhoff, 2010, pp. 77-99.

45 On the structure of the global fishing industry, see Österblom, H. et al, Transnational Corporations as 'Keystone Actors' in Marine Ecosystems, PLoS ONE 10:5 (2015): "e0127533.doi:10.1371/journal.pone.0127533".

a belief in and willingness to submit to multilaterally agreed rules and processes. This willingness is at least partly linked to the prevailing attitude towards international law and multilateral structures generally. The need for that system may appear obvious in an increasingly multipolar world but the need for multilateralism and the willingness to adhere to its principles do not necessarily go hand in hand. As the history of the law of the sea illustrates, strong governance regimes tend to emerge in periods when either one or very few States can effectively dominate the area and make others adhere to the rules it establishes, or when a number of important actors are able to align their interests towards common objectives. Current political, economic and military trends may instead lead to increasing regionalisation of international law and politics, with actors unable to dominate at a global scale instead focusing on forming the legal context in their respective region. With respect to the living resources of the seas such a development is likely to be quite problematic, at least to the extent that such regional spheres of dominance do not coincide with the geographical distribution of important fish stocks and other marine living resources. However, regardless of the developments of international law in general, a shared sense of urgency in relation to the preservation of such resources will hopefully enable effective coordination of legislative and enforcement activities across relevant graphical scales.