The Pursuit of Good Regulatory Design Principles in International Fisheries Law: What Possibility of Smarter International Regulation?

1. Introduction

The regulation of international fisheries is in need of improvement. Many fisheries are marred by unsustainable levels or forms of exploitation. Given the limits of traditional regulatory approaches, the issue this chapter is concerned with is whether or not smart mix approaches offer hope of improvements. Since regulatory approaches are often quite context specific, this chapter focuses on the potential for smart regulatory design principles to be used to shape fisheries regulation. The contribution made by this chapter to this debate is to map out some of the structural challenges presented by the application of smart mix approaches to an issue that is governed at root by agreements and practices at the international level.

International fisheries regulation seems to favour a toolkit of regulatory techniques, as articulated in the FAO Code of Conduct for Responsible Fisheries.[1] Traditionally, fisheries have been the domain of State or public regulation, and international law has left this up to individual States to determine.[2] This has tended to favour command and control type rules that determine what techniques or equipment can be used to take fish out of the sea, when and where. In recent decades, there is increasing use of rights or market based measures, drawing the private sector into the mix, as well as a range of soft law or policy instruments. We are moving towards a more complex range of regulatory techniques to govern fisheries management. At one level this appears to be consistent with 'smart regulatory approaches', which favour instrument mixes. However, it is not clear the extent to which such approaches are consistent with 'good' regulatory design principles, principles that optimise or direct the mix to ensure that certain outcomes are achieved, be it the efficient or fair use of resources. Furthermore, it is not clear the extent to which international fisheries law can and should embrace notions of good regulatory design. To date there has been little consideration of the 'smartness' of the regulatory mix as it applies to international fisheries,[3] rather the focus has been on domestic fisheries.[4]

There is a substantial body of literature that explores the effectiveness of different regulatory approaches, tools and techniques.[5] Labelled variously as smart regulation, responsive regulation, risk-

[1] The FAO Code of Conduct for Responsible Fisheries (available at http://www.fao.org/docrep/005/v9878e/v9878e00.htm) and International Plans of Acts for Reducing Incidental Catch of Seabirds in Longline Fisheries, for Conservation and Management of Sharks, for the Management of Fishing Capacity, and to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing comprise a toolkit of approaches for fisheries management. See: www.fao.org/fishery/code/ipoa/en

[2] Barnes, R., *Property Rights and Natural Resources,* Oxford: Hart, 2009.

[3] Gulbrandsen, L., 'Dynamic governance interactions: Evolutionary effects of state responses to non-state certification programs', *Regulation & Governance* Vol 8, 74-92.

[4] See Howlett, M. & Rayner, J., '(Not so) "Smart regulation?" Canadian shellfish aquaculture policy and the evolution of instrument choice for industrial development', *Marine Policy*, 2004, Vol 28(1), 171-184; Baldwin, R. & Black, J., 'Really Responsive Regulation' *Modern Law Review*, 2008, Vol 71(1), 59-94.

[5] See for example: Gunningham, N. & Sinclair, D., 'Regulatory Pluralism: Designing Policy Mixes for Environmental Protection', *Law & Policy*, 1999, Vol. 21(1), 49-76; Gunningham, N. & Grabosky, P. (eds), *Smart Regulation: Designing Environmental Policy*, Oxford: Clarendon Press, 1998; Bothe, M. & Sand, P.H. (eds.), *Environmental Policy: From Regulation to Economic Instruments,* Leiden/Boston: Brill/Nijhoff, 2003; Howlett,

based regulation or instrument choice theory, the common focus of this literature is on articulating and evaluating the design of regulatory principles. Such principles include: compatible instrument mixes; low level intervention strategies; scaled interventions; empowering surrogate regulators; maximising win-win opportunities; sensitivity to regulate attitudes, cultures and institutional conditions; conducting impact assessments; and engaging in performance responsive governance.

Much of this literature appears to be focused at the level of local or national regulation, with Howlett et al only recently observing the need to diagnose problems of complexity across and at different regulatory levels,[6] and Gulbrandsen examining the interaction of State and non-State actors in the context of certification schemes.[7] There has been no consideration of how such design principle could or should apply to international fisheries. This should not surprise us since smart regulation embraces innovative forms of social control beyond government, thereby engaging a range of non-state actors – something anathema to traditional international law approaches. And yet for matters of common concern, like fisheries, it appears that a mix of complementary regulatory techniques is desirable, especially if this can be adjusted to suit specific contexts.[8] As this chapter argues, fisheries are fundamentally international so we need to understand how this international level of governance influences the regulatory smart mix. The challenge is great, because when we move to the global level, the aims, control of and implementation of regulatory strategies, for want of a better description, explode.[9] The complexity of objectives/outcomes of regulation are magnified as a multiplicity of States, transnational actors, both governmental and civil society, become involved. This makes it difficult to plot and measure not just legal effectiveness, but also problem solving and behavioural effectiveness.[10] Also, the capacity of regulators (States) to reflect upon and adapt international governance mechanisms are hampered due to structural limitations in the way international law operates. It is quite rational for States to press for higher catch limits, despite knowledge of the harm this may do to stocks, unless they can be sure other States will abide by lower limits that will allow stocks to recover.[11] Despite these challenges, the interface between international, regional and national systems must be accounted for because the effectiveness of fisheries management involves factors that transcend each of these levels of governance. Unless we consider some of these structural issues, then we risk misusing or misapplying smart regulatory approaches.

M. & Rayner, J., 'Designing Principles for Policy Mixes: Cohesion and Coherence in "New Governance Arrangements"', *Policy and Society,* 2007, Vol. 26, 1-18; Stewart, R.B., 'Instrument Choice', in Bodansky, D., Brunnée, J. & Hey, E. (eds.), *Oxford Handbook of International Environmental Law,* Oxford: Oxford University Press, 2008, 147-181; van Gossum, P., Arts, B. & Verheyen, K., 'From "Smart Regulation" to "Regulatory Arrangements"', *Policy and Science*, 2010, Vol. 43, 245-261; Baldwin, R., Cave, M., & Lodge, M., *Understanding Regulation. Theory, Strategy and Practice,* Oxford: Oxford University Press, 2012.

[6] See Howlett, M., Vince, J & del Rio, P., 'Policy Integration and Multi-Level Governance: Dealing with the Vertical Dimension of Policy Mix Designs' *Politics and Governance*, 2017, Vol 5(2), 69-78.

[7] Gulbrandsen, (n 4).

[8] Cross reference ch 1 (00)

[9] As Wiener observes, 'The Olympics of instrument choice are underway, the contest joined at the international level'. Wiener, J.B., 'Global Environmental Regulation: Instrument Choice in Legal Context' *Yale Law Journal,* 1999, Vol 108, 677-800, 680.

[10] See chapter 1 (this volume) pp 12-13.

[11] A. Serdy, *The New Entrants Problem in International Fisheries Law,* Cambridge: Cambridge University Press, 2016, 155.

The second part of this chapter provides an account of the nature and development of international fisheries law. The key structural features are extrapolated so as to provide a baseline for how more effective smart regulatory approaches can be applied at the level of international fisheries. This addresses an important gap in the literature, with few scholars having assessed the link between international fisheries law and the requirements of smart regulation.[12] The present analysis shows how different structural and natural parameters influence and constrain regulatory design options at the level of international law. This analysis is continued in part three, where I examine how certain regulatory design principles measure against the main instruments and institutions of international fisheries law. Again, a range of limits are seen to flow from the structure of international law, although some important initiatives are underway that expand and strengthen the toolkit international fisheries law has to use. This includes a brief survey of the specific instruments used in fisheries management, some of which are increasingly used at the international level, and not merely within the domestic part of a fisheries regime. In the final part some tentative conclusions are offered. The legal framework is flexible and broad, so it is largely neutral in the way regulatory approaches are structured. Critically, the sources of international law and limited range of actors constrains the use of certain regulatory techniques, and it is only if we view fisheries issues as both a matter straddling international and domestic frameworks that we can realise the potential for good regulatory mixes. The political nature of the system may limit the use of incentives to improve fisheries regulation. Whilst international fisheries law has traditionally avoided reflective, adaptive governance, this is growing in practice. In the pursuit of solutions to structural limitations, opportunities are emerging to engage more directly with non-State actors, and to revise existing management arrangements to accommodate different regulatory techniques, such as impact assessment and the use of market based approaches.

2. The state, structure and development of international fisheries regulation

The most recent FAO report on the state of world commercial fisheries indicates that capture fisheries have been relatively static since the late 1980s, although many regional fisheries have declined.[13] 31.4 percent of fish stocks are fished at a biologically unsustainable level (ie fish mortality through catch and other factors is higher than new recruitment to the stock), fully fished stocks account for 58.1% and under-fished stocks a mere 10.5%.[14] The number of stocks fished at unsustainable levels increased dramatically by 16% between 1974 and 1989, and has increased steadily since then.[15] Demand for fisheries resources remains high with global population expected to exceed 9 billion

[12] This is considered by Techera E.J. and Klein, N., *International Law of Sharks: Obstacles, Options and Opportunities*, Leiden: Brill, 2017, chapter 3. However, their focus is on a narrower range of principles (accountability, consistency, proportionality transparency, effectiveness, flexibility). This misses more reflective approaches, and also remains rooted to a general notion of effectiveness. More generally, see Abbot and Snidal, who state that 'New Governance cannot be uncritically transferred to the very different circumstances involved in the international system, where the role of the state is even more attenuated, but it does provide key insights for improving international regulation'. Abbott, K. & Snidal, D., 'Strengthening International Regulation through Transnational New Governance: Overcoming the Orchestration Deficit', *Vanderbilt Journal of Transnational Law*, 2009, Vol. 42, 501-576

[13] FAO, *The State of World Fisheries and Aquaculture*, Rome: FAO, 2016, 2. Available http://www.fao.org/3/a-i5555e.pdf

[14] Ibid., pp. 5-6.

[15] Ibid, p. 6.

people by 2050. However, wild capture supply remains limited and vulnerable. Demand is increasingly met through aquaculture, which overtook the supply of wild catch for human consumption in 2014.[16] Developing economies are increasingly engaged in fisheries capture and export, although China, the US, Japan and the EU remain the main actors due to the size of the markets for fish products. This basic data indicates the vulnerable state of fishing, increasing pressures and a changing dynamics in the participants and systems for supply of fish products. These factors and dynamics need to be taken into account when designing regulatory systems.[17]

Fundamentally, regulation is required when other modes of organisation fail (eg open access, market failures), thereby generating conflict or ineffective or inefficient patterns of use, or when the conduct of activities needs to be brought into line with social priorities.[18] The effectiveness of any regulatory policy will be context dependent, responding to the nature of the problem, the availability of instruments and institution, regulatory culture and governance discourse.[19] As such it is important to outline the context of fisheries regulation. Fisheries regulation is in part the product of the physical nature of the resource base and the ocean environment, in part the product of historical factors that have emerged from an iterative process of regulation and reaction (bricolage), and in part the product of un-orchestrated or diffusely orchestrated social and political processes. Cumulatively, these have generated a complex picture of fisheries regulation.

Good regulation must respond to the physical nature and context of the regulatory subject matter. A law requiring the sun to stop shining or tides to stop rising and falling would be futile. Regulation must *fit* the regulatory subject matter. Thus a first step is to assess the basic nature of marine fisheries. Marine fisheries form an intrinsic part of ocean ecosystems, conditioned by energy flows, temperature, salinity, chemical composition of waters, ocean currents, patterns of food supply and predation. Marine fisheries are a typical common pool resource.[20] They are a diffuse and fungible resource, frequently moving across legal boundaries. A common pool resource is defined by two attributes. Firstly, it is costly to exclude access, and, secondly, the benefits of consumption by one person subtract from the benefits available to others.[21] Historically, this resulted in most marine fisheries being treated as open access regimes. For much of history marine fisheries have been largely unregulated.[22] Open access may be unproblematic when the level of fishing activity is so low and so diffuse as to avoid conflict between fishermen and any threats to the sustainability of stocks. For most of human history marine fishing has been open access. This presents a challenge for creating win-win scenarios because one person's (or a State's) gain is another's loss. In law, this has been perpetuated under the notion of the freedom of the high seas and reinforced through the perception that marine fisheries were boundless, or, at least, so plentiful as to be incapable of depletion. Open access has also

[16] Ibid, p. 2.
[17] See generally, Quentin Grafton R. et al (eds), *Handbook of Marine Fisheries Conservation and Management*, New York: Oxford University Press, 2010.
[18] Baldwin, Cave and Lodge (n 5), chapter 2.
[19] See generally, Gunningham, N., & Grabosky, P. (1998). Smart regulation. Designing environmental policy. New York: Oxford University Press; Van Gossum, Arts & Verhayen, (n 00) 248.
[20] Gardiner, R., Ostrom, E. and Walker JW, 'The Nature of Common-Pool Resource Problems', *Rationality and Society,* 1990, Vol 2(3), 335-358; Barnes (n **Error! Bookmark not defined.**), 2.
[21] Ostrom, E., Gardner R., & Walker, J., *Rules, Games and Common-Pool Resources*, Ann Arbor: University of Michigan Press, 1994, at 6.
[22] This is not to ignore localised conflicts in respect of coastal fisheries, which have given rise to exceptional regulatory interventions.

prevailed because, historically, States have lacked the legal authority to regulate much of ocean spaces. Fisheries have been subject to limited protection, and such law as there was focused on managing specific local conflicts, rather than conservation and management in general.[23] Significantly, fish stocks were considered to be inexhaustible, even until the late nineteenth century.[24] And it was only once these assumptions were challenged that regulatory interventions were justified.

Modern efforts to regulate fisheries are in part a response to growing awareness that we are depleting fish stocks through overfishing or destructive fishing practices. Initially, regulation was a response to increased conflicts between users, both within domestic fisheries and between local and distant water fishing fleets. A significant driver of change was the expansion of exclusive coastal State control over fisheries to meet domestic food, security and economic needs. [25]

At this point it may be observed that regulatory regimes were somewhat contingent on whether fisheries were domestic or international. Domestic fisheries comprise those fisheries that are exclusive to individual States (i.e. located within a narrow band of exclusive coastal waters), and which could be regulated independently by States. International fisheries are those which straddle different jurisdictions, or which migrate through different jurisdiction, or which are located upon the high seas are areas beyond national jurisdiction. A key feature of 'international' fisheries' is that the subject matter cannot be regulated by States in isolation. Even this distinction is hard to sustain, because most fisheries have some international dimension. First, even domestic fisheries may be subject to some international regulation through the setting of standards and objectives for conservation and management. Second, the nature of the international legal system is such that international fisheries law is polycentric. Regulation must proceed upon the basis of cooperation and standards resulting from deliberations in multiple fora. As noted above, the fluid and complex interaction between components of marine ecosystems means that fisheries cannot be regulated in isolation of other matters which may also be subject to international regulation (e.g. pollution and protection of the marine environment). Critically, international law is fundamental to setting the limits of national jurisdiction, and hence the sphere of domestic fisheries regulation. Only once the exclusive spatial jurisdiction of states over coastal waters was recognised did the basis for domestic regulation become a realistic possibility.

Since fishing is carried out by private persons, immediate regulatory responsibilities have fallen upon states. Here it appears that fisheries regulation has followed the same trajectory as other subjects of domestic regulation.[26]So, historically, domestic fisheries have been dominated by command and control regulation, and in particular input controls, which sought to restrict the location, time, quantity, intensity and types of equipment to be used when fishing. This includes licensing, restrictions on the size and power of fishing boats, gear restrictions (e.g. net sizes, pot numbers), closed areas, and limits on fishing time. Such measures are popular because they are easy to design and implement.

[23] See further Bangert, K., 'The Effective Enforcement of High Seas Fishing Regimes: The Case of the Convention for the Regulation of the Policing of the North Sea Fisheries of 6 May 1882' in Goodwin Gill, G. & Talmon S. (eds), *The Reality of International Law: Essays in Honour of Ian Brownlie*, Oxford: University Press, 1999, 1.

[24] Smith, T., *Scaling Fisheries: The Science of Measuring the Effects*, Cambridge: Cambridge University Press, 1994, chapter 2.

[25] See Attard, D., *The Exclusive Economic Zone in International Law*, Oxford: Oxford University Press, 1987; Kwiatkowska, B., *The 200 Mile Exclusive Economic Zone in the New Law of the Sea,* Dordrecht: Nijhoff, 1989.

[26] See Scott, A., *The Evolution of Resource Property Rights,* Oxford: Oxford University Press, 2008, chapter 4.

However, as the collapse in marine fisheries indicates, these approaches have not been successful in securing sustainable fishing practices. Input controls are susceptible to regulatory slide, whereby fishermen channel their efforts into uncontrolled areas in order to circumvent limits on effort. Although input controls may be combined to address this, this still fails to incentivise 'good' behaviour. It requires increasing levels of intervention, which is costly and complex, and may in turn generate hostility and non-compliance. Also, given the nature of fishing, non-compliance is difficult to monitor, detect and penalise. States may simply be unable to support effective enforcement action at sea. They may even be reluctant to take hard line on compliance because this will generate resistance from domestic fishing interests and may run counter to domestic socio-economic interests in securing food and employment. Recognition of the limitations of input controls gave rise to interest in output controls, and ultimately rights-based measures (RBM). These tools focus on how many fish can be taken. Usually this is done through the use of annual quotas allocated to fishermen or vessels or landing limits. During the mid-20th century a number of economists began to subject fisheries to critical scrutiny.[27] This began to challenge the predominantly biological approach to fisheries management, and focused instead on how alternative instruments such as RBM could address the tragedy of the commons, and at the same time improve the efficiency of fishing. The basic logic behind RBMs is that by limiting entry to a fishery and vesting those limited entrants with a secure, durable and transferable interest by way of a fixed quota, holders of the entitlement will be able to manage their fishing effort in the most efficient way and take steps to ensure the value of their capital interest in the resource. The stronger the RBM, the stronger the interest holders have in policing and securing the value (and hence sustainability) of the fish stock. RBMs have gained considerable traction in domestic fisheries, with varying degrees of implementation in Australia, Canada, Europe, New Zealand, and the United States. Since private rights generally depend upon the State for their existence, their utility within international fisheries has been somewhat limited. However, there is growing interest in using RBMs, such as tradable quotas, within international fisheries.[28]

For the most part, international fisheries law has been silent on the detail of regulation, favouring the setting of broad objectives, and allowing states discretion as to how they regulate fishing. International fisheries (i.e. those controlled primarily through RFMOs) have tended to adopt the same broad regulatory approaches that feature within domestic regimes, that is to say a combination of input controls and selective output controls (e.g. licenses, gear restrictions, closed areas and quotas). However, this is changing as the limitations of existing regulatory approaches become apparent through continued declines to fish stocks.

At the global level the main threats to fish stocks are considered to be overfishing, IUU fishing and high levels of by-catch and discards. Pollution, climate change (with adverse impacts on marine habitats and species distribution), growth in alien invasive species, and increased competition of space are further threats to the sustainability of fisheries. There is a general acceptance that there is excess

[27] Scott Gordon's analysis was seminal: See Gordon, H.S., 'The Economic Theory of a Common Property Resources: The Fishery' *Journal of Political Economy,* 1954, Vol. 62, 124. It was preceded by Innis, although this did not consider the open access nature of fish. Innis, H.A., *The Cod Fisheries: The History of an International Economy*. New Haven, CT: Yale University Press, 1940. In later years: Christy F.T. Jr. and Scott, A.D., *The Common Wealth of Ocean Fisheries*. Baltimore, MD: Johns Hopkins Press, 1965.

[28] See Barnes, R., *Pathways to strengthen rights based management programs with a "high seas" component in the context of internationally managed tuna stocks,* Report commissioned by the WWF, 2012. Copy on file with author.

capacity in fishing fleets. Excess capacity places pressure on regulators to accommodate high levels of fishing within the law (eg setting total allowable catch too high[29]), or it may incentivise fishing outside of regulatory frameworks (ie IUU fishing).[30] The overarching objectives of global fisheries regulation is to ensure that all fisheries are sustainable, meaning that fishing levels are within biologically sustainable limits. This in turn requires more specific regulatory objectives targeted at unsustainable practices within different fisheries. As indicated below, a further concern is ensuring food security – the desire to ensure adequate supplies of food (including fish) to populations.[31] Given the drivers of fishing effort, and the fact that fisheries are impacted by a wider and more complex set of environmental factors, means that we cannot view fisheries regulation in isolation from other factors.

In summary, mixed regulatory approaches have emerged as the product of a historical and organic process in response to demands to bring fishing within sustainable levels. It has been adaptive, although largely through trial and error, as opposed to reflective, planned regulatory change. Originally, regulation was a response to the simple absence of any instruments and institutions able to control fishing. Latterly this has tended to focus on refining the effectiveness of those instruments and institutions, or developing new approaches to regulation, in light of new knowledge and experience of success and failure in regulation. Key drivers of regulatory innovation have been advances in knowledge of stocks and the impact of fishing, the growth in exclusive coastal State authority, and the availability of knowledge, and the structure and political nature of inter-State transactions. Above all international regulation has been shaped by the physical nature and location of fish stocks.

3. Instrument choice and availability in international fisheries law

International fisheries law can be seen to operate in number of ways. First, there are international rules directly governing the basic framework, objectives and means of cooperation for fisheries. These have general application but, as noted above, they have particular significance for high seas fisheries because in areas beyond national jurisdiction individual States must cooperate to regulate fishing activity. Within coastal waters (territorial sea and EEZ), States authority to determine the goals and manner of fisheries regulation remains fundamentally shaped by international law because the existence of sovereign rights beyond territorial limits is contingent upon the operation of international law. However, since States enjoy exclusive control over fisheries in coastal water, there is less immediate concern with inter-States issues. The main exception to this is in respect of straddling and

[29] Communication from the Commission to the Council - Fishing Opportunities for 2009: Policy Statement from the European Commission (COM/2008/0331 final), para 4.1.
[30] Hatcher, A., 'Incentives for investment in IUU fishing capacity' in Gray, K., Legg, F., & Andrews-Chouicha, E. (eds.) *Fish Piracy: combatting illegal, unreported and unregulated fishing*, Paris: OECD, 2004, pp. 239-254.
[31] Since the mid-1990s food security has become an increasingly prominent feature of global fisheries policies. See Garcia, S.M. & Rosenberg A.A., 'Food security and marine capture fisheries: characteristics, trends, drivers and future perspectives' (2010) 365 *Philosophical Transactions of the Royal Society B* 2869-1880; van der Burgt, N., *The Contribution of International Fisheries Law to Human Development*, Leiden: Martinus Nijhoff, 2013, pp. 194ff.

highly migratory species. Here, the fact that stocks occur or move between different jurisdictions means that some coordination of fishing is required between concerned States.

International fisheries are governed by a range of treaty regimes, customary rules, and soft law instruments. It is important to stress that at the inter-State level, States are both the regulator and the regulatee. This represents a challenge for regulatory design because there is potentially a fundamental conflict of interest in the dual role of States, one that may make it difficult to engage in win-win outcomes and reflective regulatory development. States may be internally conflicted, seeking ambitious conservation targets, yet Incentives may be created through the redistribution of resources and systems of reward, enhancing the opportunities for States (loans or trading opportunities), the creation of reputational benefits, and the imposition (or removal) of sanctions.[32] The creation of incentives may require some states to act altruistically – to induce changed behaviour by other States. Thus the creation of incentives (and promotion of win-win scenarios) incentives may be beyond the gift of individual States. Or they may be simply politically unacceptable to potential grantees.

Within this basic international framework, States regulate the fishing activities of private persons, ie individuals, vessels and companies. This private law framework must be consistent with international law. Thus States cannot grant greater rights to fish than international law permits, nor can States operate fisheries contrary to their wider international law commitments. Domestic fisheries management may encompass a wide range of technical measures and instruments, and rights based instruments and market-based measures. These instruments may present challenges when applied to fishing activities with an international element (eg fishing of shared stocks or fishing conducted on the high seas. First, some instruments may depend upon or require transactions across different maritime zones, or beyond the exclusive jurisdiction of States. This may entail cross jurisdictional arrangements. Second, there may be important structural obstacles to overcome before particular measures can be adopted for an international fishery because international law is not structurally geared to the direct regulation of private persons. For example, RBMs seem to be limited to domestic markets because transfers of permanent rights based entitlements (ie property) might entail a limitation of States' sovereign rights or freedoms to fish. However, as indicated in section (b) below, these are increasingly identified as options for international fisheries.

The precise impacts of different instrument combinations is highly contextual, but it is still possible (and important) to consider the frameworks and instruments available, and to assesses the extent to which they reflect the principles of good regulatory design.[33] Or the extent to which the structure of the system impedes effective regulatory outcomes.

a. International Instruments

i. The United Nations Convention on the Law of the Sea 1982 (UNCLOS)

[32] On compliance with international law, see Guzman A.T., 'A Compliance-Based Theory of International Law' *California Law Review*, 2002, Vol 90, 1823.

[33] There principles, as noted above are: compatible instrument mixes; low level intervention strategies; scaled interventions; empowering surrogate regulators; maximising win-win opportunities; sensitivity to regulate attitudes, cultures and institutional conditions; conducting impact assessments; and engaging in performance responsive governance.

UNCLOS provides a governance framework for all oceans spaces and activities. It has 176 States Parties, and its provisions on the conservation and management of living resources represent customary international law. This means that all States domestic and international fisheries regulatory regimes should accord with the provisions of UNCLOS. If one examines the terms of UNCLOS, it is clear that it does little to drive the development of a range of specific regulatory techniques. Its provisions are mainly focused on the setting of goals, the allocation of competence to manage fisheries in respect of fisheries (eg rules on the attribution of EEZs in Part V). Thus, UNCLOS requires coastal States to determine the total allowable catch (TAC).[34] *Taking into account* the best scientific evidence available, the coastal State shall then ensure *through proper conservation and management measures* that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation. *Measures shall be adopted* that 'restore or maintain fish stocks at the maximum sustainable yield, *as qualified by* relevant environmental and economic factors, including the economic needs of coastal fishing communities and the special requirements of developing States, and *taking into account* fishing patterns, the interdependence of stocks and *any generally recommended international minimum standards, whether sub-regional, regional or global*'. The coastal State *shall take account* of species interdependence and exchange/share scientific information. The objective of optimum utilization is to be found in Art 62, which further requires the coastal State to make surplus catch available to other states. UNCLOS does not dictate specific management measures, although it alludes to a range of regulatory techniques in Article 62, to which third States can be required to comply with when fishing in the EEZ (eg licensing, gear restriction, closed areas and so on). On the high seas, UNCLOS restates similar conservation and management provisions, although it does so in less detail.[35] As the text in italics indicates, the direction of regulation option by UNCLOS is openly structured to ensure high levels of discretion, without mixes of policy instruments being mandated. More specific pathways to achieve conservation and management of fish stocks left to the discretion of States. As such, UNCLOS contributes little to the structured development of instrument mixes, although it certainly does not impede this. If one views UNCLOS as one component in the system of international fisheries law, then it could be regarded as part of and contributing to the regulatory mix. However as noted above, the tools available under international fisheries law remain strongly dependent upon treaty mechanisms, with non-binding codes, such as the Code of Conduct (discussed below), making small inroads into this mix. The regulatory mix envisaged by UNCLOS is somewhat limited, and may be better conceived of as the proper subject of domestic management arrangements.

Where UNCLOS does steer regulation is with the requirement for States to have due regard for the rights and duties of other States in the EEZ under Article 56(2), 58, 60 and 66 and in the high seas under Article 87(2) – thereby driving compatibility of States' regulatory measures. This represents a binding legal commitment to sensitivity to other regulatory matters. It is important because it shows how law reflects the intrinsically fluid and connected nature of marine activities, which in turn generates a commitment to sustainable resource use and science-based (or at least evidence based) decision-making.

In that UNCLOS provides wide discretion over fisheries, UNCLOS could be regarded as non-interventionist, or favoring low levels of intervention in the sovereign affairs of States. However, this

[34] UNCLOS, Article 61(1).
[35] UNCLOS, Article 119.

is more a reflection of UNCLOS broad framework structure, rather than a deliberate regulatory strategy. UNCLOS does little to dictate fisheries management to States, and it has little to say about whether States adopt fisheries management systems with high or low degrees of intervention in the affairs of individuals. Experience indicates that only over time does international law tend to 'interfere' more and more actively to constrain States. An example of this is the more detailed rules on the management of shared fish stocks found in the United Nations Fish Stocks Agreement (UNFSA) which defines the modus operandi of some of the general commitments to cooperate found in UNCLOS.

Despite the possibility of more detailed regulation, there is limited scope within UNCLOS, or other fisheries agreements, 'to escalate up the chain of regulatory responses' in order to compel States by way of more stringent interventions. This is due to horizontal structure of international law, whereby there is no higher law-making and enforcement body than the individual State. Whilst collective measures through the UN Security Council might be conceived of as a form of escalation, one cannot realistically conceive of breaches of international fisheries law as meeting the threshold of 'threats to international peace and security' required to initiate responses by the UN.[36] UNCLOS relies on a high degree of voluntary compliance by States to adopt effective management measures and when this fails there are limited sanctions or options open to other States to induce compliance. Although UNCLOS has compliance mechanisms, including compulsory third party dispute settlement, fisheries matters are excluded from the scope of this.[37] In general, there is a high degree of cost and inconvenience associated with international litigation. States may also recourse to diplomatic protest, retorsion, countermeasures and remedies for breach of treaty as a means of securing compliance, but there is little evidence of the use or effectiveness of such measures in practice.[38] These measures are contingent upon States interests being sufficiently affected to motivate such a response, and the responding State having sufficient influence to make the unilateral responses count against the offending State. These elements are often absent, showing inherent limits of compliance mechanisms in a horizontal legal system. Despite the infrequent resort to compliance mechanisms, it might be argued that the mere threat of such measures can motivate States to comply with the law.[39] However, this is impossible to prove empirically.

As an international agreement, UNCLOS has little concern for non-State actors.[40] Although some regulatory authority is delegated to the IMO in respect of shipping matters, no such empowerment of surrogate actors is envisaged for fisheries. This is not to say it cannot happen. For example the FAO, an intergovernmental organization, has been active in developing a range of binding and non-binding fisheries instruments, such the Code of Conduct for Responsible Fisheries 1995 and the Port State Measures Agreement 2009.[41] However, as noted above the FAO actions are contingent upon States,

[36] This has happened on the context of piracy, where there was a clear and direct concern with security issues. See UN Security Council Resolution 1976 (2011).
[37] UNCLOS, Article 297(3) excludes States from binding third party dispute settlement in respect of disputes arising out of the exercise of sovereign rights with respect to the living resources of the EEZ.
[38] Churchill, R.R., 'The Persisting Problem of Non-compliance with the Law of the Sea Convention: Disorder in the Oceans', *IJMCL*, 2012, Vol. 27, 813.
[39] On compliance, see Guzman, (n 32),
[40] Papanicolopulu, I., 'The Law of the Sea Convention: No Place for Persons?', *IJMCL*, 2013, Vol 27, 867.
[41] FAO Code of Conduct for Responsible Fisheries 1995, FAO Doc 95/20/Rev/1. Available at http://www.fao.org/docrep/005/v9878e/v9878e00.htm; Agreement on Port State Measures to Prevent,

so it is not truly an independent regulatory body. In recent years some States have afforded a degree of regulatory responsibility to NGOs, through for example the use of certification by the Marine Stewardship Council (MSC). MSC certification harnesses market incentives to drive regulatory standards by requiring certified products to come from fisheries with effective management systems, and which comply with relevant local, national and international laws. More generally, NGOs have started to enhance the capacity of enforcement strategies by providing information about fishing activities and non-compliance. This includes initiatives like 'whofishesfar'[42] or 'Global Fishing Watch'.[43]

UNCLOS is a package deal, wherein the distribution of rights and benefits across a wide range of matters is intrinsically connected legally and politically. This means that rules on fisheries cannot be viewed apart from navigational or environmental matters. This means fisheries regulation must be sensitive to other concerns, such as navigation or scientific research. At the same time it renders the adoption of regulatory changes more complex by requiring account be taken of their system effect. The balance of regulatory rights and duties in different parts of UNCLOS is the product of a trade-off, one that States are careful not to upset. This connectivity of issues forms part of UNCLOS' dominant regulatory logic. Indeed, the notion of integration pervades much of the academic literature on the law of the sea.[44] It is also evident in inter-State transactions: thus negotiations on a new internationally legally binding instrument on the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (ABNJ instrument) are committed to ensuring the consistency of any new agreement with earlier agreements.[45] Keeping faith with the UNCLOS approach to oceans issues, development of this new instrument has also proceeded on the basis of a package of issues.[46] Whilst most commentators consider this to be a desirable approach, especially since it corresponds to ecosystem based approaches, in practice this 'packaging of issues' can impede the adoption of new agreements on fisheries management. Thus UNCLOS took some nine years to negotiate and a further decade to enter into force after its adoption. The UNFSA took a mere two years to negotiate, but six years to enter into force. The ABNJ instrument has its roots in an ad hoc working group established in 2004, yet remains under development 13 years later.[47] Another important aspect of the 'regulatory logic' of the law of the sea is the slow progress and politically sensitive nature of legal developments.

The reflexive and adaptive nature of UNCLOS, as a single instrument, with no institutional process for fisheries governance, is somewhat limited. This feature of UNCLOS design principles ought to be evaluated in light of UNCLOS position as part of system of fisheries instruments that have evolved from UNCLOS in response to its perceived shortcomings.

Deter, and Eliminate Illegal, Unreported and Unregulated Fishing 2009. Available at http://www.fao.org/fileadmin/user_upload/legal/docs/037t-e.pdf

[42] http://www.whofishesfar.org/

[43] See http://globalfishingwatch.org/

[44] See for example, Caminos, H. and Molitor, M., 'Progressive Development of International Law and the Package Deal', AJIL, 1985, Vol. 79, 871-890; Tanaka, Y., *A Dual Approach to Oceans Governance: The Cases of Zonal and Integrated management in International Law of the Sea,* Abingdon: Routledge, 2008;

[45] UNGA Res. 69/292, UN Doc. A/Res/69.292, 6 July 2015, para 3. See further Barnes, R., 'The Proposed LOSC Implementation Agreement on Areas Beyond National Jurisdiction and its Impact on International Fisheries Law', *IJMCL*, 2016, Vol. 31, 583-619.

[46] See Letter dated 13 February 2015 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly, UN Doc. A/69/780*.

[47] UN GA Res 59/24 of 17 November 2004, para 73.

UNCLOS is considered a living instrument. This means its language, structures and institutions can adapt to changed circumstances. In part this can be managed through the annual meeting of States Parties, which concerns mainly procedural issues.[48] It is also influenced by the annual resolutions of the General Assembly on oceans and the law of the sea.[49] Mostly, however, this occurs through diffuse and uncoordinated means, through the practice of States and the process of treaty interpretation. By way of dynamic interpretation, the meaning and application of UNCLOS can be kept contemporary with wider technical and legal developments.[50] For example, reference to 'best scientific evidence' in the context of fisheries management decisions means States should continuously reappraise of the basis for their decisions in light of new science. However, such approaches are limited. Interpretations cannot cut across the grain of UNCLOS text or stretch meaning beyond reasonable limits. Thus limitations on the authority of States to take action against foreign fishing vessels on the high seas is fundamentally hampered by the principle of exclusive flag States jurisdiction, something no manner of textual hermeneutics can circumvent. Although UNCLOS contains mechanisms for amendment or modification, these impose procedural barriers so stringent that amendment or modification is all but impossible.[51] UNCLOS is in this respect institutionally rigid. These constraints are widely acknowledged by commentators and form part of the institutional context for fisheries management.[52] This has meant implementing agreements have been used to advance international fisheries law as limitations of UNCLOS were revealed. Of these, the most important is the UNFSA.

iii. United Nations Fish Stocks Agreement 1995

The UNFSA is a free-standing legal agreement, but operates within the general framework of UNCLOS.[53] This is stated in Article 4, which requires the FSA to be interpreted and applied consistently with UNCLOS, and Article 44, which preserves rights and obligations under compatible instruments. It is reinforced by Article 7 which requires the compatibility of conservation measures between high seas and coastal waters. This reiterates the concern for compatibility in fisheries regulation evident in UNCLOS.

The UNFSA has been ratified by 87 States as of December 2017.[54] It adds greatly to the detail of UNCLOS general conservation and management obligations for straddling and highly migratory fish stocks,[55] although it is somewhat contingent on States adopting regional agreements and arrangements to give effect to its provisions. Like UNCLOS, it is facilitative, discretionary and open to

[48] See: http://www.un.org/depts/los/meeting_states_parties/meeting_states_parties.htm
[49] See: http://www.un.org/depts/los/general_assembly/general_assembly_resolutions.htm
[50] See Barnes, R (2016). 'The Continuing Vitality of UNCLOS' in Barrett, J. and Barnes R. (eds.) *The United Nations Convention on the Law of the Sea: A Living Instrument.* London, BIICL, 459-489
[51] Article 312 (amendment process) provides for proposed amendments to be considered by a conference of parties, which requires the agreement of no less than 50% of States Parties to convene. At such a conference amendments must be agreed by consensus and, that failing, by way of a vote (carried by two-thirds majority of representatives present and voting). Article 313 (simplified amendment procedure) permits amendments to be proposed without a conference, but they will only be adopted if no State objects within 12 months, effectively giving all States a veto. No State has initiated either process to date.
[52] Boyle, A. (2006). 'Further Development of the 1982 Convention on the Law of the Sea' in Freestone, D., Barnes, R. and Ong, D (eds), *Law of the Sea. Progress and Prospects* Oxford, Oxford University Press, 40
[53] UNFSA, Art 4.
[54] UNDOALOS, *Table recapitulating the status of the Convention and of the Related Agreements, as at 10 October 2014* <http://www.un.org/depts/los/reference_files/status2010.pdf> Accessed 12/12/17.
[55] See UNCLOS arts 63-4, and 118-9.

regulatory approaches, rather than mandating specific regulatory tools or mixes. It is more detailed than UNCLOS and to an extent represents a sequencing or refinement of the general provisions of UNCLOS. The UNFSA is based on twelve "general principles" which are set out in Article 5. These include requiring coastal States and States fishing on the high seas to adopt measures to ensure the sustainability of fish stocks, to base those measures on the best available scientific evidence, to use the precautionary approach, to assess impact on the wider ecosystem, to minimise by-catch and pollution, to protect biodiversity, to take measures to prevent overfishing, to take into account the interests of artisanal and subsistence fishers, to collect and share data, to promote scientific research and technologies, and to implement effective monitoring, control and surveillance. Of these principles, the precautionary approach is usually regarded as the most significant because it reinforces the importance of sustainability in decisions about exploitation and foregrounds the importance of impact assessment of activities.

Regulation is channelled through inter-governmental organisations called regional fisheries management organisations (RFMOs). In this respect, regulatory authority is redirected from individual States to regional groups of States and may be a form of surrogate regulatory authority. Although this does not introduce new regulators, since RFMOs are groups of States, it does alter the regulatory dynamic, expanding the potential options for regulation and relieving individual States of burdens through, for example, information sharing and cooperative compliance mechanisms.[56] Arguably, the UNFSA introduces a significant incentive mechanism with the potential for win-win outcomes. Under UNCLOS, fishing was a general freedom, subject to due regard considerations.[57] By mandating RFMOs to govern regional fisheries, the UNFSA makes fishing on the high seas contingent upon either participation in an RFMO or compliance with its conservation and management measures.[58] Thus participatory rights which benefit individual States are aligned with enhanced conservation outcomes through inclusion of States within the RFMO. This step marks an important move forwards in changing incentive structures in international fisheries.

The UNFSA is sensitive to the regulatory culture/institutional capacity in respect of developing States, with Article 25 requiring specific forms of cooperation with developing States. This includes assistance, training and capacity building measures at local and regional levels. This marks an important sensitivity to institutional capacity among participating States. This is important because there is little point in imposing demands upon States that lack infrastructure or expertise (de facto authority) to deliver on international legal commitments (de jure authority). Indeed, limitations in States de facto regulatory capacity can effectively render a resource open access, and so unravel the whole edifice of fisheries management.[59]

As noted above, UNCLOS showed little concern with performance review and it is limited in terms of internal capacity to adapt to changed circumstances. In contrast, the UNFSA explicitly engages in this through Article 36, which establishes a mechanism to 'review and assess the adequacy of the provisions of this Agreement and, if necessary, propose means of strengthening the substance and methods of implementation of those provisions in order better to address any continuing problems in the conservation and management of straddling fish stocks and highly migratory fish stocks'. That

[56] UNFSA Arts. 14 and 20.
[57] UNCLOS, Art. 116.
[58] UNFSA Arts 8(4) and 17.
[59] Barnes (n 2), 2

said, the threshold for institutional change remains high, requiring not less than half of States Parties agreement to agree to a review conference, and two-thirds of States Parties for any such negotiated amendments to enter into force.[60] Beyond the UNFSA, there has been some performance review of international fisheries at the level of individual RFMOs. To the extent such reviews have been conducted, they have been useful in identifying good and bad regulatory practices in RFMOs. However, many reviews have been subject to criticisms on the basis of their lack of independence from the RFMO, a lack of thoroughness, and a lack of follow-up action by the RFMO.[61] Some States have also expressed concern about the lack of engagement with performance review in some RFMOs and the lack of follow-up action to implement recommended changes.[62] Other concerns include a lack of a common assessment frameworks, problems with compliance mechanisms and allocation of fishing rights, and more fundamentally, the need for some changes to the legal structure of RFMOs, including strengthening of their mandates.[63] This is particularly so for RFMOs that have not yet accommodated modern fisheries management principles. These initiatives, whilst not perfect reflect a move towards more reflective and proactive regulation of international fisheries law. Yet there is clearly scope to enhance the reflective and adaptive aspects of international fisheries law.

iv FAO Code of Conduct

By way of contrast to UNCLOS and the UNFSA it is worth saying something about the FAO Code of Conduct for Responsible Fisheries. First it is non-binding, and so represents a move in regulatory approaches in international fisheries away from treaties. This expands the range of international regulatory instruments in the mix. Second, its content goes beyond the framework provisions of UNCLOS and the UNFSA to more carefully delimit the kinds of instruments, or rather the qualities or objectives of such instruments, to be used in fisheries management. As a guidance instrument for the benefit of individual States and their fisheries administrations, it potentially bridges and reinforces the connection between international and domestic commitments fisheries arrangements. The objectives of the Code are set out in Article 2 which sets out a lengthy list of aims including to establish principles for responsible fisheries and the conservation of fish stocks, to serve as a reference point and to provide guidance in formulating relevant frameworks, measures, and agreements, and to promote the protection of the marine living resources and their environment. Whilst the Code is not binding, it notes that 'certain parts of it are based on relevant rules of international law'.[64] It operates in a complementary manner to the formal legal texts. Article 6 sets out the guiding principle that 'States and users of living aquatic resources should conserve aquatic ecosystems. The right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and

[60] UNFSA, Art. 45.

[61] See Molenaar, EJ 'Addressing Regulatory Gaps in High Seas Fisheries' *IJMCL*, 2005, Vol. 20, 533; Hoel, AH, 'Performance Reviews of Regional Fisheries Management Organizations' in Russel, DA., and VanderZwaag, DL., (eds) *Recasting Transboundary Fisheries Management Arrangements in Light of Sustainability Principles,* Leiden: Martinus Nijhoff, 2010, 449

[62] Report of the resumed Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, A/CONF.210/2016/5, 1 Aug 2016, paras. 27, 101-3

[63] See the recommendations of Lodge et al (n **Error! Bookmark not defined.**).

[64] Article 1

management of the living aquatic resources.'[65] This goes beyond UNCLOS and the UNFSA, and explicitly links beneficial rights to harvest with commitments to conservation. Sustainable fishing responsibilities are reiterated: Article 6 set out general principles which include the application of the precautionary principle, to develop and use selective and environmentally safe fishing gear and practices, and to protect and rehabilitate 'critical fisheries habitats', especially nurseries and spawning grounds. This reinforces the connectivity of fisheries and environmental matters, and advances potential win-win scenarios for different stakeholders in the marine sector.

The FAO Code is non-binding, and facilitative. Whilst this may weaken its legal force, it also means it is available as a regulatory template beyond State-to-State interactions. Indeed, the FAO Code of Conduct is directed at a range of actors, not merely States.[66] It is a toolkit, guiding all fisheries actors as to how they can manage fisheries. Thus Art 7 sets out a range of approaches to and options for fisheries management, although it is short of being explicit on individual regulatory tools. The range of factors to be taken into account in deciding management approaches is clearly broad enough to include command and control and market based devices, and other innovative approaches. Thus it drives the possibilities for different and complementary approaches within fisheries regulatory regimes.

One aspect of the FAO Code sets it apart from the above instruments. This is its approach to reflective, informed institutional adaption and impacts assessment. Its stated objective is to ''improve the legal and institutional framework required for the exercise of responsible fisheries and in the formulation and implementation of appropriate measures'.[67] It seeks to develop understanding of different management options.[68] And when change is made, this is to be notified and communicated.[69] It seeks to direct in much greater detail the regulatory agenda for fisheries – for example urging the creation of agreements and regulatory instruments in the field of international fish trade.[70] It also is much stronger in facilitating assessment of fishing impacts. It requires the impact of fishing methods and changes thereto on fishing communities.[71] It also urges an evaluation of the cost effectiveness and social impact of conservation and management measures.[72] Para 7.6.8 provides that: 'The efficacy of conservation and management measures and their possible interactions should be kept under continuous review'. Further, 'States, aid agencies, multilateral development banks and other relevant international organizations should ensure that their policies and practices related to the promotion of international fish trade and export production do not result in environmental degradation or adversely impact the nutritional rights and needs of people for whom fish is critical to their health and well being and for whom other comparable sources of food are not readily available or affordable'.[73] Thus the FAO Code is accommodating of the good regulatory design principles concerned with reflective, adaptive approaches to regulation. Despite its soft law nature, the Code has produced some legal effects. A FAO report reviewing implementation of the Code, indicates that it has had some success in

[65] Article 6.1
[66] para 1.2.
[67] FAO Code, para 2(c).
[68] FAO Code, para. 7.4.3
[69] See for example, FAO Code, para 11(3).
[70] FAO Code, para 11.2 and 11.3
[71] FAO Code, para 7.6.4.
[72] FAO Code, para. 7.6.7.
[73] FAO Code, para 11.2.1.15. See also, para 12.10, 12.11,

embedding improved design principles into fisheries laws worldwide.[74] However, the same report is also cautious about reading too much into its impact on fisheries management giving the complexity of factors and variables at play in the real world. Notably, in 2012 the FAO initiated a web-based reporting system to gather more data on this.[75] Data derived from this informs periodic reports on progress implementing the Code, with recent reports indicating high degrees of regulatory implementation.[76] Whether this is contributing to improved stock conditions is another matter.

b. Specific Fisheries Management Tools and Techniques

The success of specific tools and techniques within domestic fisheries has started to generate interest in how such measures could be used directly within international fisheries management regimes, such as RFMOs. Space limits a detailed account of the vast range of fisheries management tools available, but a broad typology and description of the principal tools and techniques is possible, within indication as to how such instruments can cross over into the international aspects of fisheries management.[77]

Typically, fisheries management tools are categorised into three types: technical measures, input control and output controls.[78] Technical measures comprises a range of controls on when and where fishers can fish. Size limits place restrictions on the size of fish that can be caught. They include discard bans and landing requirements. Gear restrictions limit or control the different types of fishing gear that can be used (including boat size, engine size, nets, mesh size, traps, lines, excluder devices) and where the gear can be placed. Area and time restrictions are used to prevent fishing in particular places or at certain times, usually to protect spawning stocks or to allow deplete stocks time to recover. Marine protected areas are a more sophisticated form of area restriction, where limits on fishing are often combined with other measures to protect the environment. Most fisheries management regimes are dominated by technical measures since they are necessary to deal with the particular conditions of a fishery. Input controls limit the amount of effort that can be 'put into' a fishery with a view to controlling the amount of fish that can be caught. Some limit on fishing capacity is generally seen as desirable. Input controls may overlap with the above technical measures, but also includes restrictions on fishing 'units' through licences or permits, or effort quotas. Output controls impose direct limits on the amount of fish harvested. This includes setting a total allowable catch and fishing quotas, RBM such as individual transferable quotas (ITQs), community development quotas catch shares, and exclusive use rights such as territorial user rights in fisheries. Notably, these output control form the basis of market-based regulation of fisheries, since they are essentially market based controls. These three types of control can be imposed at different levels (local, national and international) through different management bodies (eg State, EU, or RFMO). All the above instruments tend to be public law type measures targeted at individual fishers/companies and

[74] Hosch, G., *Analysis of the implementation and impact of the FAO Code of Conduct for Responsible Fisheries since 1995*. FAO Fisheries and Aquaculture Circular. No. 1038. Rome: FAO, 2009, pp. 75-.
[75] See http://www.fao.org/fishery/topic/166326/en
[76] See COFI, *Report on Progress in the Implementation of the Code of Conduct for Responsible Fisheries and Related Instruments*. COFI/2014/INnf.15/Rev 1. Available at <http://www.fao.org/3/a-mk051e.pdf>
[77] Note the references in Chap 1, fn 26. Typology of Bodansky and Wiener preferred as sensitive to international dimension of regulation.
[78] FAO, *Technical Guidelines for Responsible Fisheries*. No. 4. Rome: FAO. 1997. 45-55.

implemented through legislation or international agreements. Even economic instruments like ITQs, which operate in and through markets, still depend upon a statutory basis.

The absence of legislative-type processes would appear to limit some regulatory options at the international level. However, quotas and certain types of technical measure (eg internationally agreed gear limits of closed areas) can also operate at the level of States. To date there is little use of other instruments such as right-based mechanisms because of the institutional limitations of high seas fisheries. This is because market-based instruments generally depend upon the creation of property rights. By establishing a form of property (usually an exclusive, durable and secure right to fish) fishers are incentivised to stop "racing for fish".[79] In particular, they won't have to fear that the fishery will close before they have caught their share. As a result they are able to plan their activities in a way that allows them to catch fish most efficiently according to market conditions. In a market, the more efficient fishers should be able to profit and expand lower cost fishing activities. In theory this allows for the economic rent to be captured from the use of a resource.[80] Additionally, owners having a vested capital interest in the resource, should have a rational interest in insuring the resource is both sustainable and not harmed by destructive fishing practices. The difficulty of establishing and controlling property rights directly under international law may limit the availability of such regulatory approaches. So although these measures have emerged in some domestic fisheries over the last few decades, they are not widely used in international fisheries. Here there are some potential options to harness such tools.[81] The first is to draw out the analytical incidents of RBM and use these to help design the instruments used to regulate inter-State transactions.[82] Thus Serdy has suggested that some form of international quota trading could be developed for States shares of catch allocations in RFMOs based upon RBMs.[83] The second is for international law to establish a clearing house for private transactions (eg trades in quota between private parties in different States). The third is to establish forms of RBM directly. One such example is the Vessel Day scheme operating under in the Western and Central Pacific Ocean Tuna fishery.[84] Interestingly such approaches are increasingly driven by some States, NGOs and industry groups, suggesting an alignment of interests/attitudes and blurring of the distinctions between international and domestic fisheries management.[85]

[79] See generally, Neher, P, Arnason, R and Mollett, N, *Rights based fishing*, Dordrecht: Kluwer, 1989; Leal, DR (ed), *Evolving Property Rights in Marine Fisheries*, Langham, Md: Rowman and Littlefield, 2005.

[80] Economic rent is defined as the payment to a factor of production in excess of that needed to keep it in its present use. Changes in rent may result from changes in demand. See Homans, F., and J. Wilen, 'Markets and Rent Dissipation in Regulated Open Access Fisheries', *Journal of Environmental Economics and Management*, 2005, Vol. 49: 381–404; Arnason, R.,'Loss of Economic Rents in the Global Fishery', *Journal of Bioeconomics*, 2011, Vol. 13: 213–32.

[81] See further Barnes (n 2) and Serdy (n 11).

[82] Barnes, R., 'Entitlement to Marine Living Resources in Areas Beyond National Jurisdiction' in Oude Elferink, A.G. and Molenaar, E.J. (eds), *The International Legal Regime of Areas beyond National Jurisdiction: Current and Future Developments*, Leiden: Martinus Nijhoff, 2010, 83-141.

[83] Serdy, A., 'Fishery Commission Quota Trading in International Law', *Ocean Yearbook,* 2007, Vol. 21, 265-88.

[84] Havice, E., 'Rights-based management in the Western and Central Pacific Ocean tuna fishery: Economic and environmental change under the Vessels Day Scheme', *Marine Policy,* 2013, Vol. 42, 259-67.

[85] See for example, ISSF, *Bellagio Framework for Sustainable Tuna Fisheries: Capacity controls, rights based management, and effective MCS*, Washington DC: International Seafood Sustainability Foundation, 2010; ISSF, *The Cordoba Conference on the Allocation of Property Rights in Global Tuna Fisheries*, Washington, DC: International Seafood Sustainability Foundation, 2011; WWF, Rights Based Management: Conserving Fisheries, Protecting Economies, WWF. Available at https://wwf.be/assets/RAPPORT-POLICY/OCEANS/UK/WWF-RightManagement-brochure-final.pdf

Then there are fiscal or tax measures. These include both charges on fishers (eg landings tax) and subsidies (eg investment in new gear fuel rebates). Charges operate on the same principle as the polluter pays principle, which can require the producers of externalities (eg harmful fishing such as bottom trawling) to internalise such costs into the economic cost of fishing. Subsidies can be given to those that generate positive externalities (eg removing predator species allowing prey stocks to flourish).[86] Fiscal or tax measures can be distinguished from purely market-based measures since they not necessarily targeted at influencing market behaviour, but may instead, or additionally, provide some form of means of cost recovery.

Linked to this is the need to enhance sustainable investment in fisheries. Philanthropic, private, public and blended investments can be used to leverage change within institutions and fisheries practice, for example by removing excess fishing capacity or improving harvesting and processing technology to increase the value of marketable products.[87] Investment other than by grant will require some form of return on the initial investment. This is usually linked some form of security, typically in the form of property or secure tenure rights, catch limits and robust monitoring and enforcement capacity. Such investments have emerged at local levels because there is a more secure legal regime and potential asset upon which to hang the investment (eg secure fishing entitlement). The lack of property rights in international fisheries and the riskier legal environment (eg politicised decision making) has generally limited investment directly into international fisheries. If this can be made more secure, then there is potential to secure investment directly in international fisheries.[88]

Finally, we should consider regulatory approaches designed to generate or facilitate the use of information, either by States, managers or fishers. Fisheries management is heavily contingent upon information, since it underpins decisions about what types and combinations of substantive regulatory instrument are used. Thus the mix must include regulation concerning the generation, coordination and sharing of information. This extends from local rules requiring the reporting of catch all the way up to international agreements designed to develop science and advice for the exploitation of the oceans such as the International Council for the Exploration of the Sea.[89] Informational requirements are commonplace in international agreements, at least at a general level, encouraging research data sharing and a contingent decision-making process. Related to this are suasive instruments. These use information to influence individual behaviour, and include education, guidelines, codes of practices, and catch certification schemes. These are common at the domestic level, but increasingly being coordinated at the international level, given the global market for fish products. To an extent they can overlap with market-based mechanisms since they seek to influence consumer behaviour, and so straddle the line between private and public international regulatory tools. Examples of this include the growing body of product and process standards for fisheries developed by the International Organization for Standardization (ISO). This includes traceability standards for finfish and mollusc,

[86] FAO. 2003. Report of the Expert Consultation on Identifying, Assessing and Reporting on Subsidies in the Fishing Industry - Rome, 3-6 December 2002. FAO Fisheries Report No 698.
[87] See Encourage Capital. *Investing for Sustainable Global Fisheries* 2016. Available at http://investinvibrantoceans.org/wp-content/uploads/documents/FULL-REPORT_FINAL_1-11-16.pdf
[88] See for example, the initiative between Althelia Ecosphere and the US Agency for International Development (USAID). They signed a risk sharing agreement under USAIDS Development Credit Authority, which will assist the newly launched Althelia Sustainable Ocean Fund to provide impact financing to ocean projects in developing countries.
[89] Ref to constituent instrument.

environmental monitoring of fish farms, and standards for eco-labelling. Of course, such standards are for use within domestic fisheries, and so do not directly concern inter-State conduct. The example of MSC certification is noted above. Here it is worth noting that there is increasing recognition of this within governance arrangements.[90] In 2009 the FAO adopted Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries.[91] Although these are a reference point, there are as yet no internationally agreed standards regulating this process. Developing this and other common international standards for market related measures, would seem to be a clear opportunity to enhance win-win opportunities in fisheries.

4. Concluding Remarks

International fisheries present a complex regulatory phenomena. This is in part due to the complexity of the physical resource system, its location and interaction with other ocean activities. Layered upon this is a complex regulatory framework encompassing international, regional and local levels of legal control, involving multiple and asymmetrical actors. These actors possess and seek to and advance a range of regulatory agendas and interests, sometimes compatible, sometimes conflicting. A vast array of regulatory tools is available, which are not merely limited to catch activities, but encompass broader environmental standards, landing, trading and marketing controls. It is difficult to evaluate the precise effectiveness of these mixes. Instead we can focus on whether the legal systems are consistent with generally accepted principles of good regulatory design.

If fisheries regulation is in part rooted in international law, then it is useful to assess the extent to which key instruments facilitate or meet with the requirements of good regulatory design. Having done this, perhaps the most basic and sweeping conclusion is that international fisheries law has been principally concerned with setting of broad goals and regulatory objectives, as well as allocations of authority, but remained insensitive to advancing substantively principles of good regulatory design. Moreover the structure of international law, as a horizontal system of law, principally conducted by and for States constrains its regulatory capacity and its capacity to harness good regulatory design principles. As Part 3 indicated, international fisheries laws has tended to develop organically, through an iterative approach, reinforcing the absence of deliberative, reflective regulatory approaches. However, this picture is changing, influenced especially by the success of different instruments and approaches domestically, and there is growing evidence of principles of good regulatory design within international fisheries law.[92]

Considering these principles in turn, the first observation is that the general and facilitative content of fisheries agreements leaves open the possibility of different types of regulation and different institutional approaches – at least under domestic law. The above instruments are part of an open tool kit of techniques for fisheries management. There is a growing and more sophisticated use of a range of regulatory techniques in domestic fisheries management, and some of these, in the form of market based approaches, are beginning to spill over into international law. The key challenge is

[90] Washington, S. and Ababouch, L. *Private standards and certification in fisheries and aquaculture: current practice and emerging issues*. FAO Fisheries and Aquaculture Technical Paper. No. 553. Rome, FAO, 2011.
[91] FAO, *Guidelines for the ecolabelling of fish and fishery products from marine capture fisheries. Revision 1*, Rome: FAO, 2009. Available at http://www.fao.org/docrep/012/i1119t/i1119t00.htm
[92] See fn 5, and the related text.

accommodating or integrating these tools into international fisheries management regimes. For example, is it conceivable that some form of tax could be implemented by an RFMO? Such a power would clearly challenge the prerogative of States. Part of the constraint on IGOs is that they depend upon States for authority and finance, and the possibility of fiscal independence would challenge the sovereignty of States. More generally, the range of legal sources under international law that can be used to manage fisheries are limited to treaty, customary international law and general principles, with case law and academic writing being subsidiary sources of law. Some of these sources are ill-equipped to support some of the above regulatory tools. For example, custom is a diffuse, organic mode of law creation incapable of being directed prospectively.[93] It emerges organically from the practice of States. Custom is not the product of a deliberative process, so it cannot be conceived of as an 'orchestrated' process.[94] Some commentators take the exceptional view that customary law may be created deliberatively through international organizations.[95] However, decisions taken in international fora, such as the UN General Assembly, tend to direct law creation through treaties, or at best provide mere evidence of *opinio juris*, rather than be constitutive or directing of customary rules. General principles lack the capacity to advance more detailed technical content. This leaves us heavily dependent upon treaties to govern inter-State conduct. To some extent treaties are deliberative, planned law creation processes. However, they usually occur on an ad hoc basis, negotiated by and for particular constituencies, with little capacity account for system wider factors. Treaties are drafted with little if any rigorous assessment of impacts, in the form of cost benefit analysis or true understanding of behavioral consequences. Such concerns may emerge incidentally through the process of negotiation. However, this is not orchestrated by any supranational authority. International law lacks the governance structures to formalize this aspect of a legislative process. Treaties remain the product of political compromise that in turn may limit optimal regulatory choices. More recently soft law codes have added another dimension to fisheries management. Beyond the obvious addition to the mix, their informal status means they also complement treaties. These codes are more sensitive to proactive adaptive management – at least as a direction to individual States and other fisheries actors. As non-binding instruments the regulatory agendas set in these codes are not constrained by traditionally formal structures of international law. Moving beyond the traditional structural limitations of formal international law, they represent an important change in direction of regulatory design, providing evidence of low level regulatory intervention, drawing attention to win-win scenarios. They work with the logic of State centered legal process, rather than try to challenge the patterns of authority and competence in the international legal system. Of course, this is perhaps the crux of the issue. Can good regulatory design and more effective fisheries management occur within a horizontal system of law?

States are both law makers and subject of the law. They lack autonomy of viewpoint to truly reflect on their position as 'regulatee'. Since international law begins and ends with States, the effect is to

[93] Trachtman, J., 'The Growing Obsolescence of Customary International Law' in Bradley C., (Ed.), *Custom's Future: International Law in a Changing World*, Cambridge: Cambridge University Press, 2016, pp. 172-204.
[94] The term if borrowed from Abbott, K. & Snidal, D., 'Strengthening International Regulation through Transnational New Governance: Overcoming the Orchestration Deficit', *Vanderbilt Journal of Transnational Law*, 2009, Vol. 42, 501-576
[95] Alvarez, J., *International Organizations as Law-makers*, Oxford: Oxford University Press, 591-5. Most writers take the view that decisions of international organizations do have such a 'legislative capacity'. See Johnson, D., 'The Effect of Resolutions of the General Assembly of the United Nations', *British Yearbook of International Law,* 1955-56, Vol. 32, 97-122; Lowe, V., *International Law*, Oxford: Oxford University Press, 2007, 90.

flatten the scale of regulatory responses. Most sanctions are contingent upon individual States having their interests harmed, and having both the will and capacity to take action against other States. There are few effective collective sanctions available against States to advance or encourage the satisfaction of regulatory goals. Although international law has some structures and processes that are capable of facilitating autonomous decisions within the system (eg independent third party adjudication), these processes also remain at the mercy of States self-interest. The absence of effective scaling of response undermines international fisheries regulation and can result in regulatory impasse. For example, a failure to respond to the use of flags of convenience and their role in IUU fishing is a manifestation of the critical role that sovereignty plays in the system.

Related to this is the challenge of accommodating surrogate regulators. International law remains a State-centric discipline; States are the principal actors and the law is mainly contingent upon the consent of States.[96] There is limited participation of non-State actors in process of prescribing international fisheries law. For example RFMOs are responsible for governing certain regional fisheries. However, these are composite bodies of States, established under and limited by their constituent treaty, and so unable to exert regulatory influence apart from their composite State membership. The EU has international legal personality and enjoys exclusive competence to manage living resources on behalf of its member States. However, it remains a composite State entity. NGOs play a minor role in fisheries, often providing advice, data or subjecting States to pressure through the media. Such bodies lack any direct regulatory capacity and so are limited to using suasive or information instruments. Some of these are quite important, such as product or traceability standards, and can complement international legal standards, as shown. These also open the door to new incentive structures. MSC certification, which is open to States as client, can generate incentives to improve fisheries management in order to secure stronger market positions for fish products. This seems better suited to strengthening compliance with fisheries laws. Of course, due to the fact that the locus of authority in international law remains with States, and that there is a large asymmetry in power between States and other actors, the certification schemes appear to have a stronger role to play at national and local levels.

International law is also weak on reflexive governance mechanisms. Whilst international law is generally dynamic and continually evolving (ie an adaptive institution), this does not mean that it is able to accommodate a wider range of interests (beyond States), or be responsive to its regulatory deficiencies. This is reinforced by the lack of effective mechanisms for assessing the performance of international fisheries law beyond annual exhortations from the UN Secretary General and UN General Assembly, and from critical academic commentaries. Only recently have performance reviews of RFMOs becomes part of the toolkit of regulatory measures and there is much scope for these to improve in terms of rigor, scope and impact on future regulatory performance of RFMOs. Most international regulatory approaches accept, but are deferent to the attitudes of States. This is both a strength and a weakness. Since international law must respond to States interests, this is an institutional necessity; a conditioning part of the regulatory domain. However, it may limit regulatory possibilities by reducing everything down to what is acceptable to States. As a result international fisheries law continues to develop (slowly) as a product of political interactions, rather than in response to a formal assessment of institutional effectiveness and future checking of regulatory

[96] D. Hollis, 'Why State Consent Still Matters – Non-State Actors, Treaties, and the Changing Sources of International Law' *Berkeley Journal of International Law,* 2005, Vol. 23, 137.

options. Finally, at an operational level, State do not generally engage in any form of impact assessment when designing or adopting fisheries management mechanisms. Treaty law is purposeful, but only to the extent it meets the political ends of States. There is no capacity, and possibly no political will, to engage in meaningful impact assessment of prospective fisheries laws.[97]

Viewed as a discreet regulatory regime, international fisheries law meets or facilitates some of the principles of good regulatory design. The principal limits of international law are the range of actors (mainly States and IGOs) and tools employed (mainly treaty and soft law instruments), as well as the absence of strong reflective and adaptive governance structures. The absence of the latter two aspects of good regulatory design present more significant concerns for effectiveness because they limit possibilities for change and improvement.

Of course, this question of compliance with principles of regulatory design is very much one of perspective or categorization, and the strong critique of international law proceeds on the assumption that it is only appropriate and possible to assess international management apart from the wider range of fisheries management efforts that are also given effect through domestic legal regimes. Arguably we can only understand international fisheries law as part of a complete system. If we look 'inside' international fisheries law, to those domestic aspects, it is possible to evaluate it more favorably because a wider range of tools and approaches are available. Critically, greater scope exists for adaptive and reflective processes within domestic legal institution. This is important, because if we continue to travel in the direct that smart regulation points, with instrument mixes, compatibility, sequenced interventions, empowered participants, and sensitive, reflective and adaptive performance, then we are likely to see further integration and growing mutual dependence of international and domestic aspects of fisheries regulation.

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[97] Occasionally domestic legislature engage in impact assessments of treaties. However, this usually concerns domestic implications of an existing agreement, rather than prospective impacts of an agreement at the international level. See for example, House of Lords European Union Committee, *The Treaty of Lisbon: an impact assessment*. HL Paper 62-I.

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