Has the Status of “Maximum Sustainable Yield” Become an International Customary Rule?

Rachel Alberstadt
Alumna (Advanced Public International Law), Leiden University, The Hague, The Netherlands
Email: r.a.alberstadt@umail.leidenuniv.nl

Received 6 October 2014; revised 22 November 2014; accepted 8 December 2014

Abstract
The concept of maximum sustainable yield has emerged as a popularly accepted concept for the benefit of the environment, yet the practical implementation of this concept and the dubious acceptance by fisherman of its lawfulness provides the core discussion of this article. Customary law exists as a two-pillared system depending both on an element of practice in addition to the belief that the behavior in question is lawfully mandated. As such, for customary status to apply to maximum sustainable yield, this requires both pillars. This article therefore evaluates the application of the customary status to maximum sustainable yield and in doing so, demonstrates that maximum sustainable yield is itself an implementation of the greater notion of sustainable development as a whole.

Keywords
International Law, Development, Maximum Sustainable Yield, Environmental Law, Fisheries

1. Introduction
“It has always been assumed that the freedom of the high seas also entailed a freedom to remove the resources that were found in those waters” (Higgins, 1994)

Development as a field and indeed as a discourse holds multiple interlinked objectives which balance the usage of natural resources against that of conservation and management. Economics plays a significant role in achieving development as it serves as both a tool and as an objective of monitoring and implementing the aims of development. Early origins of development pertain to the tenuous relationship between economic development and its impact on the environment. Today, this relationship continues as embedded in this economic-en-
environmental link in practice rests a core concern for the seas and common resources found within, such as fish stocks and other living marine resources.

At present, international law of the sea constitutes one of the most densely populated legal fields under public international law as it incorporates stratified regimes throughout international law and even international relations as evinced in the international and regional organizations erected to ensure sustainable fishing in practice. Ultimately, fisheries laws embody an ideal example of the concept of development as it is fundamentally linked with the concept of sustainability, as the point of development is to achieve multi-faceted progress with minimal negative impact on the present or future situations, or as eloquently put: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission, 2014). As such, this article will evaluate the evolution of international fishing laws under broader international and development laws. It will engage with the question of whether sustainable fishing, particularly that of the principle of maximum sustainable yield, has become customary international norms. In doing so, it will address various international fisheries agreements as well as soft law regimes.

Customary international law derives from State practice and opinio juris (or the belief that practice is legally mandated). The ICJ has first ruled that in the 1968 North Sea Continental Shelf Case order to rise to a customary threshold, the act in question must be extensive and virtually uniform (North Sea Continental Shelf, 1969; Asylum Case, 1950); however, the Court later relaxed this standard in the 1986 Nicaragua case in its declaration that the customary threshold is general consistency (Nicaragua v Honduras, 1988). Accordingly, jurisprudence of the Court indirectly confirms that principles of sustainable use and common heritage or concern of humankind all inform the management regimes for the resources of the seas (Schrijver, 2010).

However, whether or not this indirect confirmation of these principles as significant for responsible fisheries rises to the level of a customary rule will inform the scope of this article’s discussion. To begin its evaluation of sustainable fishing as a debated status as a customary norm, this article will first define maximum sustainable yield and then it will discuss this principle in regards to international treaty regulations. Second, it will evaluate non-treaty regimes, particularly that of soft law and other regional institutional bodies and their contribution to enforcement of fishery regimes. Third, it will then evaluate if the principle of maximum sustainable yield is implemented in practice. Finally, it will analyse jurisprudence before the International Court of Justice (the Court or ICJ) in order to tie together the tenets of international fishery laws by examining whether or not sustainable fishing is a customary norm, and if this status has been confirmed or denied by the Court.

2. Maximum Sustainable Yield and International Fisheries Treaties

Maximum sustainable yield is defined as the largest amount of exploitable fishing balanced against the ability for re-population of the fish stock. The origins of this concept in practice dates to the post era World War II with the 1958 Convention on Fishing and Conservation of Living Resources of the High Seas (Schrijver, 2010). This convention defined fish conservation as “the aggregate of the measures rendering possible the optimum sustainable yield” (UN, 2005; Aust, 2005). This relates to general principles regarding sustainable fishing, all of which heavily rely on up to date scientific data relating to age, gender, quality, and quantity of fish populations.

For example, to achieve sustainable stock, efforts might be taken in response to data to re-populate when a certain stock becomes reproductively endangered. This reflects the general framework of sustainable fishing and particularly maximum sustainable yield as daily catches predicate on the guarantee that fish will be able to re-populate indefinitely. This strongly correlates with the essence of sustainable development itself, wherein, development must be achieved to provide progress for the present, but steps taken, particularly those which utilize the environment or natural resources, cannot be at the detriment of future generations.

Therefore, maximum sustainable yield constitutes a key principle of fisheries laws as it introduces the sustainability objective specifically into a daily aspect of development activities—that of fishing. Fishing therefore relates to several economic or market activities but more basically constitutes a food security issue. Thus, the factors used to determine the status of the fish populations, such as quantity, pertain to current availability as much as future availability. This article will evaluate the implementation of maximum sustainable yield in relation to living resources of the high seas only (defined as “all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State”) (UNCLOS, 1982: Art. 86), although it will demonstrate briefly that this principle similarly pierces national waters as well (Aust, 2005) despite the acknowledgement that the vast majority of fish stocks
are found within 200 miles of a coastline.

No framework for sustainable fishing can be discussed without referring to the United Nations (UN) Convention on the Law of the Sea (UNCLOS), a constitution for the ocean which arose following the 1958 and 1960 UN conferences on laws of the sea. Indeed, the preamble text states “Noting that developments since the United Nations Conferences on the Law of the Sea held at Geneva in 1958 and 1960 have accentuated the need for a new and generally acceptable Convention on the law of the sea […]” (UNCLOS, 1982).

This convention purports to distinguish boundaries for maritime zones and distribution of ocean wealth. This treaty subjects States to obligations to enforce principles of conservation and resource management of living resources; it acts as a caveat to the historic tradition of common heritage to that of freedom of access to the seas. It was founded to codify rules for managing the high seas and the living resources found therein (Schrijver, 2010). While this article will focus on Part VII of the convention, particularly section 2 as these articles relate to the living resources of the high seas, the provisions of UNCLOS engender norms for responsible fishing within internal or national waters in addition to the high seas.

Indeed, the freedom of the high seas extends to landlocked States as well, and the national waters found within the exclusive economic zones of States are accessible to other States for fishing purposes subject to and Articles 61 to 74 of the convention and other relevant regimes. Article 55 of the UNCLOS treaty defines exclusive economic zones as “[T]he area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this Part, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this Convention” (UNCLOS, 1982). Further, Article 117 then expressly requires that “All States have the 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.” In addition, Article 61(3) specifically address the requirement of maximum sustainable yield in regards to fishing practices in internal waters such as exclusive economic zones.

Thus, UNCLOS creates a binding framework for the access and behaviour of States amongst the high seas, but predicates on one hand, national incorporation of its principles and on the other, international cooperation of States to abide by its provisions—which are accepted as customary rules (Aust, 2005). UNCLOS acts as an international instrument wherein parties to its provisions comprehend the linkage between freedom of the seas and fisheries conservation (Schrijver, 2010). The primary purpose of the convention regards access to the seas (Schrijver, 2010), yet the cornerstone of the principle of the freedom of access is that of responsible usage of this freedom, primarily that of conservation and resource management.

Article 116 of UNCLOS illustrates that the freedom of fishing is subjected to conservation and management of the marine living resources and consequently while “a coastal State has sovereign rights over the fish stocks, it has an international duty to conserve those stocks”, for instance through respecting the maximum sustainable yield (also referred to as total allowable catch) (Aust, 2005). Numerous articles of the convention expressly obligate States to ensure conservation and healthy usage of fish stocks. In particular, Article 119 of the convention requires that States account for scientific measures to ensure sustainability of fish populations, via implementation of the principle of maximum sustainable yield. Its provisions recognize the economic aspects of fishing but require States to account for the environmental impact in exercise of their rights.

Therefore, clearly embedded in the nearly universal convention (UNCLOS, 2014a) for laws of the sea are elements of development specifically through right of access to the seas and subsequently nautical mobility regardless of geographic or territorial location. This freedom, however, is conditional (UNCLOS, 1982: Art. 81(1)-(2)) upon the respect for international regulations such as conscientious usage of the seas as access to the seas includes accountability for both the prevention of polluting maritime resources and otherwise minimizing harm to the living resources (UNCLOS, 1982).

Given the universal nature of the convention (Harrison, 2011) and the acceptance of States to the principles of conservation and resource management for fisheries, especially the cornerstone issue of enforcing the maximum sustainable yield for fisheries, demonstrates a widespread recognition by States of sustainable fishing as legal norm. Therefore, the principle of maximum sustainable yield has been adopted as a key principle of fisheries conservation dually found in both the high seas and within exclusive economic zones, although UNCLOS pertains mostly to national waters rather than the high seas (Aust, 2005). In addition to the provisions of UNLCOS, a subsidiary body of UNCLOS is the 1995 Fish Stocks Agreement, emphasizes the role of regional organizations in managing straddling and migratory stocks (Schrijver, 2010).

This agreement in essence acts as an extension of UNCLOS as it provides greater detail as to measures parties
can institute to give effect to the convention by focusing upon conservation and management of straddling and migratory fish stocks. It obligates parties to implement measures to ensure optimum exploitation of fish stocks through the express application of the principle of maximum sustainable yield (Schrijver, 2008). For instance, together Article 64 of UNCLOS and the 1995 Fish Stocks Agreement specifically address management of tuna stocks and expresses that where tuna is found (in the exclusive economic zones), the “coast State and other States fishing in the exclusive economic zones or on the high seas beyond it have a duty to cooperate in the conservation and management of the species” (Aust, 2005).

As such, while UNCLOS provides the international community with a comprehensive convention regarding laws of the sea, it acts as a broader foundation through which subsidiary agreements funnel into more specified agreements which give meaningful effect to UNCLOS provisions, such as agreements relating to specific species of fish stocks (UNCLOS, 2014b). This again re-affirms that the conservation of fish stocks, particularly through the exercise of maximum sustainable yield, are accorded national and international attention. The various fisheries regimes demonstrate a consistency in language and spirit as specifically including terminology of conservation, management, and sustainability, making it clear that these concepts should guide their daily fishing practices.

3. Non-Treaty Fishery Regimes and Soft Law

The UN Food and Agricultural Organization (FAO) is a UN body which performs a key role in sustainable fishing regulations through enhancing compliance with international treaties and in standard setting (Harrison, 2011). The FAO maintains that the right to fish carries with it the responsibility to protect aquatic ecosystems. It outlines a framework for the maintenance of quality, diversity, and quantity of fish populations (quantity meaning availability) (FAO, 2001). The organization promotes the active role of States in the prevention of overfishing through management of resources. The premise of involvement is that States must certify that their domestic fishing is compliant with fisheries laws ensuring sustainability of resources.

While the UN and subsidiary UN bodies fulfil a role in standard-setting and to an extent monitoring of fisheries laws (Schrijver, 2010), non-governmental organizations (NGOs) for instance that of the Marine Stewardship Council (the MSC) (Marine Stewardship Council, “Environmental”, 2010), act as organizations which facilitate and monitor State and non-State actor’s implementation of fisheries laws. The MSC enforces an environmental standard to certify fisheries. Its scope applies to all wild fish and excludes farmed fish but applies a standard based on three main criteria 1) sustainable fish stock, which means that fish must be able to continue repopulating indefinitely; 2) minimizing environmental impact; and 3) effective management, meaning that fisheries must follow local, national, and international laws (Marine Stewardship Council, Fishery, 2010).

For instance, one way to manage resources is to rehabilitate dwindling fish populations or repopulating a particular stock when necessary as discussed in the earlier section. The MSC Principles and Criteria for Sustainable Fishing framework asserts in Principle 1 that “Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields”.

Ultimately, the FAO maintains that the act of fishing should be carried out in manners which are conducive to reducing the negative impact on the environment, reducing the waste of fish products, and maximizing nutritional value (FAO, 1995: Art. 6(7)). It acts as a coordinating body of conservation management and operations and in practice manages several regional fishing organizations (Schrijver, 2010). The FAO has codified a comprehensive code of responsibilities for fishing operation and management in its 1995 Code of Conduct, which while voluntary, endorses long term conservation and sustainable use of maritime resources by fisheries. It acts as a detailed framework which provides “a detailed consensus for the scientific, sustainable, responsible and equitable exploitation of fishery resources” (Pitcher, Kalikoski, Pramod, & Short, 2009) in the efforts to enhance compliance with fishing regimes.

While a key aspect of the FAO’s work in practice is the general management of sustainable fishing, this organization also purports to empower developing countries to optimally fish and benefit from fish resources (Schrijver, 2010; FAO, 1995: Arts. 2, 5, 7). As such, this underlines the role of development in fisheries laws as through cautious exploitation of maritime resources, this can provide economic and other security to developed and developing nations as it provides the immediate benefits of a food source and the long-term benefits of employment.
4. Maximum Sustainable Yield in Practice

However, while this article has discussed the multiplicity of regional and international agreements for sustainable fishing under international fisheries laws, there still remains a notable abuse of fishing (Schrijver, 2010). Statistics taken in 2009 estimate that despite the FAO 1995 Code of Conduct, 53 countries catch 96% of global marine fisheries (Pitcher, Kalikoski, Pramod, & Short, 2009). As of 2009 it was estimated that only the US, Canada, Norway, Australia, Iceland, and Namibia were overall compliant in their fishing practices, although four of the six received failing grades in other categories (Pitcher, Kalikoski, Pramod, & Short, 2009). Notably, the higher rates of compliance do not rest entirely with developed nations, but alternatively, some stem from developing nations—although this has been attributed to inherited fisheries systems and development aid in the case of Namibia (Pitcher, Kalikoski, Pramod, & Short, 2009).

In general, statistics demonstrate that while maximum sustainable yield may be accepted as a legal norm, this is not reflected in practice as compliance with this principle has not been met. Indeed, “overfishing has become so bad that in some areas what was once a common fish has now become a scarce delicacy” (Aust, 2005). This demonstrates a key issue with the two pillar system of customary law in that intentions to comply (Fisheries Jurisdiction Case(s), 1973, 1974) in regards to the belief by States that there exists an obligatory norm (opinio juris) fails to be demonstrated in actual State practice. As will be discussed in later sections, subsequent to the ICJ judgment in Fisheries Jurisdiction Case(s), Iceland not only disregarded the Court’s decision but unilaterally further extended its fisheries jurisdictional border to 200 nautical miles.

In response to this problem of noncompliance, the 1993 Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas entered into force in 2003 and provides a detailed framework for compliance with fisheries laws, particularly regarding preventative measures to avert violations (Schrijver, 2010). For example, an issue arises when a straddling stock is over-fished by one State, leading to the detrimental fishing exploitation of another. Issues of this nature constitute a main crux of fishing disputes in part this relates to the multiplicity of types of organizations and their scope as this can lead to narrowed applicability refined to specific actors, and ultimately result in fragmentation or legal uncertainty.

Nonetheless, there are efforts to combat this fragmentation, and to enhance general compliance with fisheries laws through regionalization and coordination of fisheries laws. Arguably this has resulted in improved implementation of fisheries regulations as there are more active monitoring and bodies actively engaging in giving guidance on application of fishing regulations in diverse regional areas. Additionally, a more recent example is the 2012 Belize Declaration [on Cooperation for Sustainable Development of Fisheries and Aqua Culture Resources], which is a sustainable fishing agreement applicable to the Caribbean and Central American regions. Significantly, this agreement reaffirmed the principle of the sea as a common heritage and the importance of the sea for regional security (for instance, through employment and general nutrition).

Furthermore, another example of international legal attempts to enhance cohesion and coherence of international fisheries laws is the November 2009 Agreement on Port State Measures which sought to prevent, deter, and eliminate illegal, unreported, and unregulated fishing. As of the 11th of March of this year, this agreement had four ratifications and three accessions. However, to boost soft law authorities on sustainable fishing, the ICJ has dealt with multiple cases on this matter to clarify sustainable fishing principles and more generally, maritime fishing jurisdiction. The recent Whaling Case provides one example and will be discussed in the next section.

5. ICJ Jurisprudence

The ICJ has dealt with international fisheries disputes on numerous occasions, but for the confines of this article, the 1974 Fisheries Jurisdiction Cases and the 2014 Whaling Case will be employed as two case studies for discussion. While in both of these cases the Court expressly dealt with narrowed parameters of the disputes in question, such as alleged violations of a specific article of a convention, the Court’s reasoning regarding status of international fisheries laws remains noteworthy even though these remarks were given outside of the primary purposes of the judgment. Overall, these cases serve as exemplary jurisprudential examples regarding duties of States as pertaining to responsible fishing behaviour, and the interdependence of these duties as they affect neighbouring States and regional marine stocks as a whole.

The 1974 Fisheries Jurisdiction Case(s) regards access to maritime resources wherein, the United Kingdom and Germany asked the Court to clarify the legality of Iceland’s unilateral extension of its fishing jurisdiction to 50 nautical miles. (Iceland disregarded this and unilaterally extended its border to 200 nautical miles.) Signifi-
Significantly, in these disputes the Court determined that maritime fishing is no longer a laissez-faire endeavour (Schrijver, 2008; Schrijver, 2010) as a necessitated legal response to intensified fishing (Fisheries Jurisdiction Cae(s), 1973, 1974) and that States are obligated to ensure that fishing should be accomplished sustainably and responsibly (Fisheries Jurisdiction, 1973). It also found that all States involved are obligated to account for each other’s fishery conservation measures as the need to conserve benefits all (Schrijver, 2010).

Fulfilling these measures necessitated utilization of scientific data to maintain idyllic levels of stock. As such, the reliance upon current data serves as an implication wherein the Court recognized a duty of States to responsibly fish as a duty unto themselves, but also as a duty to monitor measures applied by other States. As science requires testing and as data issued by States is not infallible, this illustrates the heart of contention of several fishery disputes. Accordingly, when issuing scientific data to implement national measures, this data must be reliable and reliably implemented by other States.

Significantly, this implication that States must actively ensure accountable fishing acts consistently with the spirit of previous international fisheries laws. For instance, the UN General Assembly 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 wherein parties are required to adopt measures to ensure conservation of straddling (fish populations which live or migrate into more than one exclusive economic zones (internal waters) and migratory fish stocks. Specifically, in Article 5 it obligates States to “adopt measures to ensure long-term sustainability of straddling fish stocks and highly migratory fish stocks and promote the objective of their optimum utilization” according to scientific data which informs the calculations for maximum sustainable yield (UNGA, 1995; Schrijver, 2008).

Furthermore, the ICJ decision of March 2014 on the Whaling Case regarding the dispute between Australia and Japan (with New Zealand intervening) pertained to compliance with the whaling convention. This case regards Australia’s contestation of Japan’s compliance with the [Schedule to the] 1946 International Convention on the Regulation of Whaling (ICRW). The Court found Japan to be in violation of its obligations under the Convention, particularly Article VIII which protected certain categories of whales, restricted catch limits, prohibited commercialism of whales, and an obligation to submit permits for review to the organization. Nonetheless, both parties to the dispute argued that the express purpose of the convention was the conservation and sustainable exploitation of whale stock (Whaling Case, 2014).

The Convention itself purports this objective with the intent of “safeguarding for future generations natural resources” through “conservation, development, and optimal utilization of whale resources” (International Convention for the Regulation of Whaling, 1946: Art. V(2)). The Court found Japan in violation of these objectives, particularly disagreeing with Japan’s justifications for exceeding the maximum sustainable yield of certain whale species (Whaling Case, 2014) and provided three remedies in the revocation of Japanese whaling permits and the refrainment from authorization permits of whaling outside of scientific research. In doing so, the Court confirmed the status of maximum sustainable yield as an obligatory rule absent exceptions such as scientific research, however, the Court did not expand upon nor did it confirm whether the principle of maximum sustainable yield is a customary rule.

6. Conclusions

In conclusion, while sustainability as a deliberate objective of international fisheries agreements is certainly present in regional and international fishing regimes alike, whether or not this has become an international customary norm is debated. This article has observed that while the presence of this principle is consistently expressed within various fishing regimes, the objective of sustainability embodied in maximum sustainable yield cannot be considered a customary principle absent paralleled practice. Thus, an expression of intention—regardless of repetition—does not equate to actual execution. Established legal regimes which govern local, national, regional, and international actors alike demonstrates States’ appreciation and recognition that responsible fishing through compliance with maximum sustainable yield and other rules, is required of their practice yet few States achieve even passing levels of compliance of this principle.

As evaluated, the Whaling Case buttresses international fisheries laws as it enforces the principle of sustainable fishing as a responsibility for State actors. Indeed, the case confirmed the Court’s position in the 1974 Fisheries Jurisdiction Case(s) wherein the issue of sustainable fishing is not a nationally exclusive issue as fish populations are not always constrained by boundaries but impact all affected States. It is both the duty of States
to actively impose and monitor maximum sustainable yield and other conditions on local or national fish activities, but also to support and monitor other States in their implementation likewise.

However, absent this confirmation of maximum sustainable yield as a core issue of international fisheries laws, the Court did not clarify whether or not this responsibility stemmed from a customary obligation. Whether referred to as maximum sustainable yield or as total allowable catch, regardless of terminology, the principle of conserving and managing the healthy exploitation of fish stocks is regarded as a universal legal rule, however, statistics demonstrate this norm has not been exercised by States and as such cannot be considered customary.

Therefore, this article concludes with the denial of maximum sustainable yield as a customary principle and ventures that while this norm has become well entrenched within legislatures this acceptance fails to be endorsed in practice. This article therefore poses that if maximum sustainable yield indeed exists as a customary rule because States accept it as *opinio juris*, it still fails to embody a customary rule based on the second pillar requiring demonstrated State practice as statistics evince that the belief that this principle is obligatory has not been implemented extensively or consistently in practice. In the alternative, should maximum sustainable yield be found as a customary norm, it is one lacking in compliance.

**Acknowledgements**

Gratitude to R. Larsen for her invaluable perspective on the ICJ *Whaling Case*.

**References**


Food and Agricultural Organization (FAO)/Fisheries and Aquaculture Department(s) (2001). What Is the Code of Conduct for Responsible Fisheries? [http://www.fao.org/docrep/003/x9066e/x9066e01.htm](http://www.fao.org/docrep/003/x9066e/x9066e01.htm)


International Convention for the Regulation of Whaling, 2 December 1946.


Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

Other selected journals from SCIRP are listed as below. Submit your manuscript to us via either submit@scirp.org or Online Submission Portal.