

RESEARCH ARTICLE

Lessons from the “turbot war”: the future of high seas governance*

Manuel Pacheco Coelho^{1,**}, Rui Junqueira Lopes² and André Estrela Pires³

¹ SOCIUS; ISEG, University of Lisbon, Lisbon, Portugal

² Departamento de Economia, Universidade Évora, Évora, Portugal

³ ISEG, University of Lisbon, Lisbon, Portugal

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Abstract – In 1995, the so-called “turbot war” between Spain and Canada was pivotal for Iberian fisheries. The main objective of this research is to revisit the turbot war to reflect on the issue of governing fisheries on the high seas, the cause behind the war, and how it was resolved. This paper provides guidelines for future research on the management of high seas fisheries.

Keywords: Turbot war / game theory / straddling stocks / high seas governance

1 Introduction

In 1995, a fishing war broke out between Spain and Canada over turbot in the area of the Northwest Atlantic Fisheries Organization (NAFO). This paper proposes revisiting this war and reflecting on its causes and its impact on future treaties concerning the high seas.

In January of 2015, the International Union for Conservation of Nature (IUCN) put this headline on its website: “At last some good news for the High Seas”. This “news” was congratulations on the progress towards a legally binding treaty to safeguard the ocean beyond national boundaries that could address the fundamental question of high seas governance. In New York, the delegates of the United Nations (UN) took a historic step towards the management of the international commons: government representatives agreed to launch a formal preparatory process for a global and legally binding instrument for the management and conservation of the oceans’ resources beyond the limits of the exclusive economic zones (EEZs). This decision, which was taken after 4 days of tense discussion, led to a preparatory committee that started work in early 2016 to craft the elements of a draft treaty under the UNCLOS (United Nations Convention on the Law of the Sea). Although the delegates did not agree to an end date for the negotiations, they proposed September 2018 as the deadline for a final decision to be taken at an intergovernmental conference under the auspices of the UN (this deadline is now

2020). This treaty would secure the design of a truly global system of high seas governance that would include all the important issues: from marine protected areas management to biodiversity conservation, from shipping to seabed mining, from providing more effective access to marine genetic resources to fostering and distributing the results of scientific and commercial discoveries. As an important assurance to the high seas fishing countries, the delegates agreed that any new treaty would not undermine any existing agreements and the work of relevant international bodies.

This decision was a natural consequence of the Conference of Kingston (2014) on the future of mineral resources of the seabed in areas beyond national jurisdiction, and of the Global Ocean Commission’s petition for a new agreement on protecting the high seas that was presented to the UN secretary, Ban Ki-moon, in September 2014. This petition stressed that the high seas lack a legal regime to enforce the sustainable use of commons resources.

This paper has the following structure: First, it presents a review of the original problems in managing high seas fisheries. In the next section, it briefly reviews the basic theoretic results of the literature on this issue, in particular those arising from the combination of the basic model of fisheries management with game theory. Then, it introduces the case of the turbot war by developing and explaining the causes of this war. The paper reflects on how the countries resolved the war through diplomatic efforts and reached a cooperative agreement that would avoid the problem of overfishing on the high seas. The paper then presents and discusses the rationale and substance of the 1995 UN Agreement on Transboundary Resources and Highly Migratory

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**Corresponding author: coelho@iseg.ulisboa.pt

Species, and its strengths and weaknesses. Finally, the paper reflects on the theoretical and practical issues that still pose important questions on the problem of managing fisheries on the high seas. The conclusions highlight the social-ecological dimensions of the turbot case and the possible impacts on the future evolution of international maritime law.

2 History and legal background

Use rights are at the core of fishery management, and they become more complex when fisheries are transboundary by nature. The extended fisheries jurisdiction gave the coastal countries use rights that garnered them the potential to sustainably manage fisheries. However, the general evolution towards more exclusive rights has not meant the exclusion of free access to international fisheries. The Law of the Sea, 1982 (hereafter termed UNCLOS) did not exclude the principle of the “freedom of the seas” that remains in force on the high seas.

One of the most important subjects that emerged because of this new framework is the management of the commons in international fisheries. Given that fish are mobile, coastal countries found that despite the establishment of EEZs, they were sharing some of these resources with their neighbours. Many coastal countries also found that some of the acquired stocks crossed over the borders of their EEZs to the high seas, where they were subject to the exploitation of fishing fleets from other countries. Some of these stocks moved great distances, passing through successive EEZs to then enter the high seas. There is no rigorous typology; however we can designate the first as transboundary resources, the second as straddling stocks, and the third as highly migratory species (Gulland, 1980; Caddy, 1997; FAO, 2002).

The legal background for this problem can be stated as follows: The UNCLOS attributes to coastal countries almost exclusive use rights to the fisheries from their coasts to 200 miles out—this fundamental article (art. 56) allows a coastal country the sovereign right to explore and to conserve the resources in its EEZs. A clear definition.

By contrast, the UNCLOS was inconclusive when it came to “trans-zonal” species, resulting in the need for a clear debate on the subject of who should be entitled to access and to manage these resources. During the Montego Bay Conference (10 yr of discussion under the auspices of the UN to arrive at the UNCLOS), the distant water fishing nations argued that given the mobility of those stocks, management should not be under the jurisdiction of coastal countries but under the competence of the regional fisheries organizations. Many coastal countries vigorously opposed this idea.

Article 64 of the UNCLOS contains two paragraphs that are seemingly contradictory. Paragraph 1 says that, where a regional fisheries organization exists, coastal countries should cooperate with the countries of distant fishing. The latter countries thought that this paragraph meant they could then influence the regulation of the resources inside those organizations. But paragraph 2 says that art. 64 should be applied “in addition to the other provisions of part V of the Convention”. Coastal states interpreted this paragraph to mean that art. 56 should be applied inside and outside of their EEZs; that is, it applied to migratory species. Therefore, a “preferential” right for coastal countries should be considered inevitable.

Thus, this article created an area of potential conflict. The high negotiation costs in resolving the problem were enough to maintain this vague situation until the 1990s when the problem became acute, especially in the context of straddling stock fisheries. In the early 1980s, many countries considered highly migratory resources to be of little importance (about 90% of the resources were in the EEZs). Further, certain coastal countries believed that the long-distance fishing fleets could only explore the resources of the adjacent high seas because of the guarantee of the EEZs. But everyone was wrong. Managing the transboundary stocks and the straddling stocks became the root cause of serious “fish wars” in the 1990s. The “Turbot war” and the “United States/Canada war on salmon” were interesting examples of this situation.

In essence, this was a problem of use rights. The conviction of the coastal countries that they possessed “de facto” use rights on the transboundary resources was not correct. Currently, these resources are an “international common good” and result in the usual “tragedy of the commons” (Hardin, 1968) in which these resources are overexploited. The vague, imprecise definition in the UNCLOS is the origin of the problem; therefore this is the “unfinished business” of the Law of the Sea (Kaitala and Munro, 1993).

3 Literature review

In the literature, the most common analytical approach to this problem has been to take the basic model of fishery economics and combine it with game theory. At its core, this approach was developed for transboundary resources. The importance of straddling stocks is more recent. However, a common trunk exists that is called shared resource management. This trunk considers the cooperation between interested countries as the key factor in solving this kind of problem.

Cooperation in management means the consideration of various issues such as the distribution of catch shares among partners, the determination of the optimal management strategy (which involves the estimation of resource usage over time), or the implementation and supervision of an agreement. The first issue involves difficult negotiations between partners but is probably the simplest. Determination of the optimal management strategy can encounter severe difficulties as management objectives may be substantially different: one of the co-managers may be more conservationist and be willing to practice lower catch rates to allow more sustainable use. On the other hand, strategies mutually accepted by the co-managers only offer temporary benefits if an oversight mechanism does not exist.

However, is cooperation worthwhile? In fact, the co-managers may not engage in a process of cooperation (with the associated costs) if they are not convinced that the consequences of non-cooperation are more severe.

The starting point is the model of Gordon-Schaefer that deals with two key issues: the nature of open access to the resource (and the consequent effect of full dissipation of rents) and the exercise of intertemporal resource management (a trade-off between present sacrifices and future earnings). Game theory can be understood as an analytical tool applicable to situations in which decision-makers are influenced not only by their decisions and actions but also by those of others.

There are several alternative analyses: the classical approaches of Colin Clark (1980) and Levhari and Mirman (1980), and the approach of the so-called Helsinki Group (see Kaitala, 1986; Kaitala and Pohjola, 1988; Hamalainen and Kaitala, 1990). The general conclusion of these approaches is that non-cooperation leads to lower performance. The authors predict that non-cooperation translates into results very similar to the case of sole country fisheries with open access and unregulated; that is, to the dissipation of rents.

Since cooperation is advantageous for some fisheries, we apply the game theory to cooperative management. In cooperative games we assume that each “player” seeks to maximize his or her benefits, that the two players can communicate with each other, and that they are able to establish firm agreements. In case there is willingness to cooperate, the first question that arises is whether the two players are willing to establish a formalized agreement subject to oversight by a regulatory authority, a coercive (binding) agreement; or a more informal, flexible agreement that is non-coercive (non-binding) without oversight.

Furthermore, there are several alternatives for economic analysis. A seminal analysis is Munro (1979). The co-users must consider two issues: the division of net benefits and the possible existence of different management objectives. If countries have the same management objectives, in theoretical terms, the solution is relatively simple: the appropriate strategy is management as if there was only a single user. If management objectives are not uniform, as usually happens, the problem grows in complexity. The key results of the analysis can be summarized as follows:

- Different discount rates mean different arrangements for the preferred strategies. *Ceteris paribus*, the player that uses a relatively low discount rate favors a conservationist policy and is willing to invest in the resource. So, in the immediate future, the compromise favors the most myopic player because a higher discount rate means this player intensively evaluates the closest benefits. However, in the long term, the conservationist preferences become increasingly more important.
- It is inevitable that each player will place a different weight on the conservation of resources. For Munro (1990), an *optimum-optimorum* occurs when the preferences of the player who assigns a higher value to the fishery are dominant. This player should establish the management program and should compensate the other members. Munro calls this result the “Principle of Compensation” (Munro, 1987).
- The economic analysis indicates that the commitments on fishery policies with transfers (side payments) are more stable. A side payment, in its simplest form, is a type of transfer where the term is defined in a broad sense. It can be a monetary or a non-monetary transfer that may extend beyond the fishery itself: for example, trade concessions on products other than fish. The importance of side payments has become increasingly recognized. Some experts use the term *negotiation facilitators* (FAO, 2002; Munro et al., 2004). Munro (1987) provides evidence that side payments are especially important when there are significant differences in the management objectives between different players. The economic consequence of the introduction of transfers is that they encourage the players to focus on the allocation of economic benefits rather than the division

of quotas (see, Vislie, 1987; Kaitala and Pohjola, 1988; Munro et al., 2004).

When the stock in question is straddling, the analysis of management is similar to that applied to the shared resources. We assume that the coastal country is confronted with one or more fishing fleets in waters adjacent to its EEZ. However, in terms of game theory, an important difference arises that refers to the characteristic of symmetry. For example, the countries of contiguous EEZs have a relationship of perfect symmetry in that each has clearly defined rights in its EEZ and neither can use the resources of the other EEZ without permission. In the case of straddling stocks, this relationship is asymmetrical. Nothing impedes the coastal country from using its free access to the high seas, but fishing fleets only enter the EEZ of a coastal country with permission.

Furthermore, in the case of the straddling stocks, the number of participants can vary. While the hypothesis of two players has been plausible, the most common situation is when a coastal country is confronted with several fleets from distant countries. Additionally, their number can vary over time. When one considers the multilateral management of straddling stocks and the possibility of new “entrants”, the problem becomes significantly more complex. Despite these differences, the basic results of the non-cooperative management of shared resources are not significantly affected. Essentially, if the non-cooperation prevails in resource management, it will result in overexploitation.

Considering the possibility of establishing alliances between partners of the same organization and of the eventual appearance of a new entrant in the organization introduces more complexity to the analysis. There are various alternatives to cooperative management that depend on the viability of the alliances between members and their own ability to transfer property to any new interested player (see Kaitala and Munro, 1997). In practice, this is the key issue of the design and operation of institutions. There are multiple implications, at the political and economic level, that can be introduced by the operationalization of the rules of the game. The definition of a Regional Fisheries Management Organization (RFMO), its constitution, rules of action, powers, and oversight procedures are central issues in this debate.

We now apply game theory to this case:

- The possibility of a country transferring ownership to the new entrant ultimately increases the player’s position in the game by extracting a greater share of the net economic return. The mere threat of transferring the ownership to a new entrant immediately increases its expected payoff from the cooperative agreement.
- Perhaps most “uncomfortable” is the conclusion that in the model, the new entrant can influence the game and receive a part of its income from fishing, even if the transfer does not occur. In a way, the transferability of “a member’s charter”, that is the right to pertain to the organization, to a new partner means the game between two players becomes four players, not just three. It is, of course, only a direct, mathematical result of the application of the model, needing empirical validation. However, this result shows the difficulty of achieving a stable agreement with RFMOs when there are no clear and strict rules against “new entrants”.

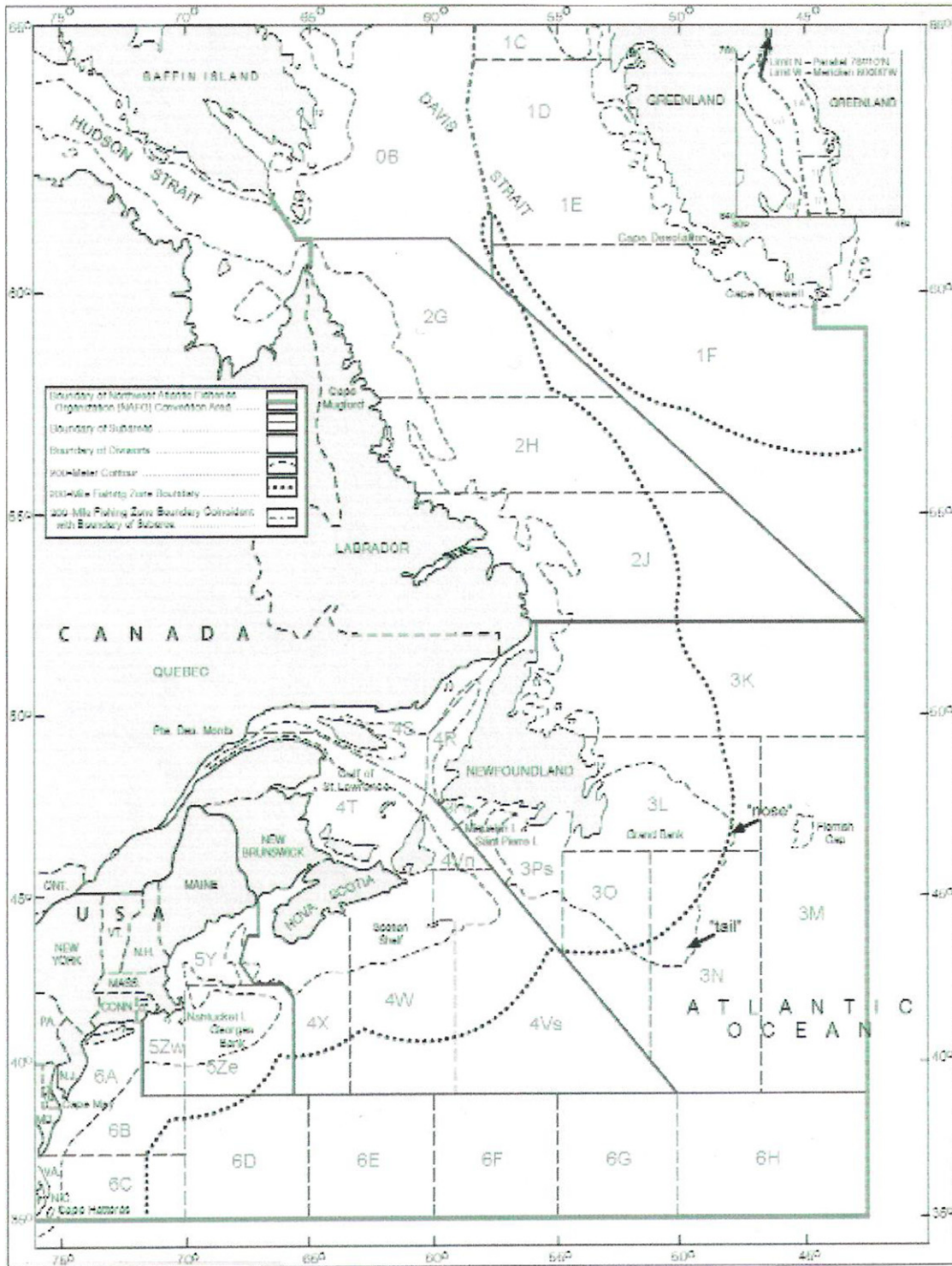


Fig 1. Map of NAFO fishing area; Grand Banks, Newfoundland. Source: Department of Fisheries and Oceans (DFO – Canada).

4 Case study

4.1 The “turbot war”

The turbot war is an example of the issues addressed in this paper. The dispute was centered on a demersal species, the Greenland halibut, which is also called turbot (*Scophthalmus*

maximus), that is abundant in the Grand Banks of Newfoundland. The stock moves from the Canadian EEZ into the international waters outside of the 200-mile limit in an area popularly known as the “Nose of the Bank” (see Fig. 1). It is therefore a straddling stock that Canada, Spain and Portugal have fished for centuries, giving them all “historical rights”.

The portions of the stock in the open high seas have been managed by the NAFO. In the first few years (from its creation in 1979 until the mid-80s), NAFO was reasonably successful in managing its resources, applying the conservation policy preferred by Canada. Using game theory terminology, the relationship among the three countries was moderately cooperative.

However, in the mid-1980s, when Portugal and Spain became members of the European Economic Community (EEC), that cooperative arrangement began to show signs of growing stress. Following the collapse of the Grand Banks cod (*Gadus morhua*) fishery, Canada's fishing industry was struggling to survive. In less than a decade, the cod stock had declined so much that a moratorium on cod fisheries was introduced in the early 1990s. This new situation had devastating social effects: Canadian cod fisheries lost 50,000 jobs. Many communities that were mostly dependent on those fisheries faced a serious social crisis. Furthermore, Canada imposed other conservation measures that included the limitation in the number of trawlers that could go out fishing for other species and limited the mesh size fishers could use to defend against immature fish being caught. These measures also affected the turbot that was relatively plentiful in Canadian waters and was globally growing in table-fish reputation and economic value.

This context increased non-cooperation incentives. On one side, the European Commission began to accuse Canada's dominant management policy for the fall in capture shares. This fall in shares was sufficient to present a formal objection and refuse the attributed catch share. So, the Europeans turned to cod and American plaice (*Hippoglossoides platessoides*). Canada complained that they were exceeding their shares and that this action was destroying resources (namely with the capture of immature fish) and affecting the stocks in its own EEZ.

Canada also cited how this action aggravated the social and political problems in Newfoundland. A policy of subsidies and a reduction in the overcapacity in the fisheries sector had not avoided overfishing and unemployment in areas highly dependent on this activity.

Both sides began to recognize the serious depletion of the stocks (especially cod) in the beginning of the 1990s. An agreement, signed in 1992, worked as a temporary truce. In the year of the Rio-Earth-Summit (UN Conference on Environment and Development) Canada and the European Union (EU) negotiated a cooperation agreement to end overfishing (ratified by the EU, but not by Canada) under which the EU agreed to follow future NAFO quotas. According to the Canadian Department of Fisheries and Oceans (DFO), Canada's share of the turbot had been falling steadily to just 12% of the total catch in 1993. That decline showed a more conservationist-oriented management policy. According to the DFO, foreign catches in the disputed area exceeded foreign quotas in five of the 6 yr prior to 1993. For example, in 1992, the excess was as much as 22,600 tons, about 853% of the quota. The EU catches, primarily by Spain and Portugal, comprised the majority of this foreign catch.

After a series of demonstrations in March 1994, the Canadian minister Brian Tobin decided to revise the *Law of capture of ships* and declared that the European fishermen were forewarned of Canada's intention to protect their flounder

stock, even outside of the 200-mile limit. By 1994, Canada and the NAFO had tracked about 50 violations of boats crossing the 200-mile EEZ limit to fish illegally in Canadian waters and recorded the use of illegal gear and overfishing on the high seas. For many European observers, this situation needed to be negotiated by the UN and that was the form that the Canadians used to press the negotiations.

The decline in the stock of mature turbot put the issue on NAFO's agenda in 1995. For the first time, the turbot/green halibut was included in the quota table of NAFO's Conservation and Enforcement Measures. For that fishing season, NAFO decided to set the TAC at 27,000 tonnes. The division of the total authorized catches into national quotas was contentious. The NAFO convention required that national allocations take into account the interests of members that traditionally fished the stock in the region. Canada requested the highest allocation based on their traditional turbot fishing and on the proximity of this stock to the Canadian EEZ. The EU argued that they had the largest percentage of the TAC in the previous 2 yr. A slim majority of votes (six to five with two abstentions) voted a division of quotas that allocated 16,300 tonnes (60.4% of TAC) to Canada and only 3400 tonnes (12.6%) to the EU. Japan and Russia received 2600 and 3200 tonnes respectively, and the remaining NAFO members received 1500 tonnes (NAFO, 1996). There was also a different interpretation of the scientific advice of NAFO's Scientific Council. The Europeans argued for a recommendation that the fishing be reduced so as not to exceed a harvest of 40,000 tonnes; and the Canadians responded that the scientific advice did not recommend a TAC of 40,000 tonnes. By contrast, it was asking for a serious cut in catches (Canada's TAC proposal was 15,000 tonnes). The final allocation of 27,000 tonnes resulted from a compromise proposal by the representative of Norway. Interestingly, on February 22, the EU Fisheries Commissioner, Emma Bonino, argued that the turbot allocation was unfair, and the EU objected to the national allocation and felt entitled to a unilateral European quota of 19,000 tonnes (Keiver, 1996; DeSombre and Barkin, 2002; Gough, 2009).

And, finally, the war broke out. After the repeal of the Law of capture, Minister Tobin and the DFO wanted to demonstrate Canadian resolve on this issue by making an example. On March 9, an offshore patrol aircraft detected the Spanish trawler *Estai* in areas 3O and 3N of international waters outside Canada's EEZ. Several armed DFO fisheries patrol vessels, with Canadian Coast Guard and Navy support, pursued the *Estai*, which cut its nets and fled. The ensuing chase lasted several hours after which *Estai* was finally boarded in the international waters of the Grand Banks. The *Estai* was escorted to St Johns in Newfoundland where it received great fanfare. Canada's federal court processed the case, and Spain and the EU protested vehemently and took the case to the International Court of Justice.

4.2 Solving the problem: the 1995 UN agreement

The turbot war illustrates the uncertainty created by the Law of the Sea with regard to the rights and obligations of the coastal countries with straddling stocks. Obviously, Canada maintained its defense based on the principle of Miles and

Turbot Timeline

Antecedents

- 1977 Canada declares its EEZ.
- 1979 NAFO formation
- 1994 UNCLOS enters into force (Spain and Canada – without ratifications);
- Canadian Parliament passes law authorizing enforcement of fishing quotas beyond national jurisdiction.

The Crisis (1995)

- February Canadian Government actively publicizes the turbot issue.
- March 3 Canadian Fisheries Minister Tobin calls for a moratorium on turbot.
- March 6 Canadian cabinet authorizes captures of fishing vessels outside Canada’s EEZ. Portuguese and Spanish vessels added to the “black” list.
- March 9 Canadian Coast Guard captures *Estai*.
- March 28 Spanish bring the turbot case to the International Court of Justice.

The Resolution

- April Tentative deal reached between Canada and the EU.
 - August UN agreement on the Management of Straddling Stocks and Highly Migratory Species.
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Source: Adapted from [DeSombre and Barkin \(2002\)](#)

[Burke \(1989\)](#) that although it did not have jurisdiction beyond the 200-mile limit, there were superior rights for conservation reasons. The EU insisted on the breaking of international law. Only the agreement negotiated by the UN in 1995, on Transboundary Stocks and Highly Migratory Species and a bilateral agreement between Canada and the EU, would finally resolve the situation.

Of course, these agreements resolved this specific situation, but was the problem solved? After two decades, what have we done to solve the original problem in practical terms, or in the theory? Have we discussed the fundamentals and introduced changes to the legal framework? How did we deal with the problems of overfishing and overcapacity? Have we made significant advances in the theoretical and empirical socio-economics literature?

After the turbot war, the bilateral relationship between the EU and Canada has evolved into a more narrow collaboration in terms of conservation measures and control in the NAFO area. The introduction of a “precautionary principle” in the definition of TACs is an example of this new attitude. The most favorable atmosphere that resulted from the agreement between the EU and Canada was also a factor of creating trust. Canada opened their ports once again to the fleets of the EU in June of 1996 and revoked the regulation on ships from Spain and Portugal.

The parties involved pursued several approaches to resolve the conflict ([DeSombre and Barkin, 2002](#)). As already mentioned, Spain appealed to the International Court of Justice. However, at the same time, the EU and Canada worked to negotiate a new division of the turbot’s TAC as well as more restrictive rules for monitoring and inspecting catches at the NAFO level. The International Court decided in 1998 that it had no jurisdiction to hear the case. In spite of the ongoing negotiations between the EU and Canada, the strong Spanish position served as pressure on Canada. Even though the International Court had ruled favorably, partial “disillusion” existed among other members of the EU that defended the Canadian perspective against Spain and Portugal, as was the case for the United Kingdom.

For 1996, the quota of 27,000 was divided into a 7000 tonne quota within Canada’s EEZ, all of which accrued to Canada, and a 20,000 tonne quota in international waters, of which Canada obtained 3000, the EU 11,070, Japan 2050, Russia 2255, and the remainder to other NAFO members. The TAC remained the same in 1997 and increased slightly up to the new millennium ([NAFO, 1997](#); [DeSombre and Barkin, 2002](#)). The parties also agreed to more restrictive regulation on mesh size and introduced important new rules and procedures for monitoring and control. New measures of increased independent observers and satellite tracking of fishing vessels in the NAFO area were included. A new system was created that required that all vessels of NAFO members be equipped with satellite tracking devices. The existence of a team of independent NAFO inspectors with more powers in terms of inspection of members’ vessels was an important signal of this new attitude on the enforcement of rules. A new scheme to improve compliance with the strategy of conservation developed by NAFO made possible the inspection of vessels of non-members under flags of convenience and placed diplomatic pressure on the countries caught in illegal activities (to put the adequate legal processes and apply the sanctions).

Canada agreed to repeal the regulation that allowed enforcement outside its EEZ but won an important fight in terms of enforcement and compliance in the NAFO area. Spain, in turn, won an increased percentage of the TAC. So, the governments of the two “contenders” could easily go to their voters claiming victory.

The fundamental aspect in the resolution of the problem was the UN commitment to the management of high seas fisheries. In fact, many observers in Portugal and Spain highlighted the fact that the turbot war broke out at a special moment when these questions were the centre of the debate, and that was a form of putting some pressure on this discussion.

In 1992, at the Rio Summit, the UN accepted the creation of the Conference on the Management of Transboundary Resources and Highly Migratory Species. The final agreement came in August 1995 after the war was over.

In the negotiations, two schools of thought emerged. The first school supported the “consistency principle” that states that the applied regime to the portion of the stock in the area of the high seas adjacent to the EEZ should be consistent with the established regime for the portion of the stock inside the EEZ. Innocuous (or perhaps not), the principle seemed to repeat the need for no divergence in the management regimes for the same stock. This was in line with article 56, which stated that the coastal country determined the management regime in its EEZ and, consequently, the same regime should be in force for the remaining part of the stock. The preferences of the coastal country appear to be dominant. Miles and Burke (1989), great defenders of this solution, maintained that article 116 of the convention established that the coastal country had a superior right, responsibility, and interest in the management of the straddling stocks.

For the maritime powers, this principle simply reflected the “creeping jurisdictionalism” that shaped the recent evolution of international maritime law. Distant water fishing nations stressed that some coastal countries, especially those with extensive continental platforms (like Canada or Norway), intended to maintain that principle of dominance. By contrast, these distant nations spoke about co-management and justified their important and non-substitutable role in the determination of a management regime for those stocks. However, if such a rule was established because of the principle of “same regime in and out of EEZs”, then the maritime powers could influence the administrative regime in and out of the EEZs. For the coastal countries, this position, which they designated as “School of Art 64”, limits the sovereignty in their EEZs.

In this context, a commitment emerged (United Nations (1995)). The fundamental guidelines can be summarized as follows:

- It maintains free access after the 200-mile limit and guarantees the regional fisheries organizations the regulatory power in the areas adjacent to the EEZs. The largest innovation is the capacity of these organizations to extend their rules to non-members.
- It did not solve the problem of new entrants. The agreement just defined that any country with a “real interest” could be a member and should be encouraged to integrate into the organization. However, it did not define what real interest means in practice.
- It gave the regional fisheries organizations the right to establish capture shares and control the number of boats for a given stock or area. But the agreement did not say anything about the procedures in the decision process, namely should the decision reflect a consensus or a majority. Once again, this will depend on practice.
- Enforcement is another problem. A single country cannot apply international law out of its territory. The agreement concedes that each country has the right to inspect ships of any other country. However, the legal action against possible infraction can only be taken by the country of origin of the ship found at fault. So, it seems that the potential effect of the enforcement is broadly bounded.

The extension of EEZs over 200 miles was not mentioned for two reasons: the experience of administration inside the EEZs was not brilliant, and there were historical reasons that put irreconcilable interests face to face.

The agreement foresees the constitution of a regime of management and control to ensure the sustainable use of the stocks in the high seas and appeals to international cooperation. In practice, cooperation has been substantial, especially in the NAFO area, and the new rules seem to work.

4.3 The future of high seas governance: Portuguese concerns

The agreement intended to promote a new cooperation formula for states interested in the administration of resources. Somewhat surprisingly, in the EU, US, and Canada, the agreement was well received, but in Portugal it met with reservations. The cooperative atmosphere was not strong enough to hide some important problems. In the Portuguese Parliamentary Report (“Portugal in the European Union in 1995 and 1996”), the Commission of European Affairs did not hide its disagreement with the partition of turbot captures in the NAFO area. It viewed partition as being harmful to the EU because it was based on the “preferential right” of the coastal country. The truth was that the convention of 1995 seemed to be clearly favorable to the interests of Canada. The so-called “Coastal Fisheries Protection Act” gave Canada the power to develop controls on the flags of convenience in the NAFO area. Canada always claimed that the high seas were not controlled but “regulated” by the Canadians. Nonetheless, they did not hide the fact that the conservation measures taken for the high seas would only be effective if compatible with the existing ones in Canada. Diplomatically, they were declaring their “dominant position” in the definition of the management objectives. In the words of an important minister in the Portuguese government at the time the war began, the “real aim of Canadian intervention” was to pull Portuguese and Spanish vessels away from the fishery of the real prize: the cod. There was a hidden intention: “behind everything lay the historical right to cod fishing and the Canada/Norway alliance to remove the Portuguese and Spanish fleets from the waters that the precious fish inhabits”.

So, a new group of questions needs now to be answered:

Is the “domestic authority” that Canada is claiming for the areas adjacent to its EEZ, like Russia and certain countries of Latin America, a pressure position?

Is the cooperative atmosphere that surrounded the 1995 agreement a case of co-management or just a necessary truce because of the depletion of the stocks? Is cooperative management of the high seas possible? Are we approaching “res communes”, in the sense of Bromley (1991), “property of all, managed by all?” Or, by contrast, when the stocks are replenished (if still possible) will the enlargement of the EEZ become the first priority of Canada?

This last issue is especially relevant for Portugal. In fact, despite some interesting results, the 1995 agreement continues to be debated, especially in the context of the NAFO. Facing the weak recovery of cod stocks, the leaders of the fishermen organizations of Newfoundland have proposed the enlargement of the EEZ to a limit of 350 miles to coincide with the edge of the continental platform.

The continental platform (and its own statute) lost importance in the new Law of the Sea but did not disappear. We should remember that the pretensions to the 200 miles

started after and grew upon the platform. So, it is possible (and probable) that the eventual failure of the system proposed by the 1995 agreement will encourage attempts to resolve the problem of the straddling stocks with a simple answer: to enlarge the EEZs. And the most evident corollary will be that the extension should coincide with the continental platform.

The UN recognizes that the limit of 200 miles does not make any biological sense. On the contrary, the continental platform has an unquestionable geo-morphological existence. It is natural that the coastal countries consider it as an extension of their territory and that they should manage those resources, both in the sea bed, but also in the waters above.

According to [Hannesson \(1996\)](#) the solution to the problem of high sea fisheries would be a new extension of EEZs. This extension would be a logical step in the process that led to the establishment of EEZs by recognizing that the existing limit was not enough to assure the necessary conservation of the stocks. To extend EEZs to the waters above the continental platform would be in agreement with the rules that govern the bed of the platform. These rights belong to the coastal country whose terrestrial mass the platform naturally extends.

The Canadian Minister of Fisheries denied these claims. However, he also reminded that in agreement with the Law of the Sea, the management of sedentary species in the continental platform further than the 200 miles is already the domain of the coastal state and that Canada will never stop exercising all their rights. We can also consider the position of the Portuguese Fisheries Minister in an interview after the turbot war. He claimed the intention of Canada was “to increase its negotiation power and to justify a possible increase of its EEZ to 300 or 400 miles”.

In Portugal, recent governments have assured the fishing industry that a fundamental objective of the Portuguese marine policy is to exploit the continental platform. Without considering the economic, political, and scientific interests of this action, we think that the Portuguese media reporting that has accompanied this declaration is perhaps not very diplomatic, especially because this intervention could be interpreted as agreeing with the possible extension of EEZs. Does Portugal have reasons to align with the process of “creeping jurisdiction”, desired by Canada and Norway? In the context of Portuguese fisheries, the extension of EEZs would have undesirable effects. Portugal would lose fishing opportunities for its long-distance fleet without gaining additional benefits or resources, given the closeness of the platform. So, a clear evaluation of costs and benefits should be made before taking such a “visible” position.

4.4 Routes for further research

There are many practical areas of interest in terms of fundamentals and new forms of regulation. Discussions about these topics also open new areas of economic analysis that call for further research on at least three fundamental aspects, as described below (game theory still has a central role in every domain).

First, the “new entrant” problem. Despite some interesting developments in this subject (many of them arising from the research of the so-called “Lisbon School”; see [Brasao et al. \(2000\)](#); [Coelho and Lopes \(2002\)](#); [Coelho et al. \(2011\)](#);

[Coelho \(2014\)](#); [Duarte et al. \(2000\)](#); [Pintassilgo \(2003\)](#); [Pintassilgo and Duarte \(2001\)](#); [Pintassilgo and Lindross \(2008\)](#)), this issue still requires further investigation. The charter members of a RFMO are faced with a dilemma. They can attempt to prevent non-members from becoming explicit free riders, that is, turn poachers into game keepers by encouraging them to apply as new members. If the offer is too generous, the existing RFMO will be undermined. If the prospective new members feel that the proposed shares are not enough, they will return to explicit free riding. The solution to the problem involves the application of a coalition bargaining analysis in the form of a partition function. New developments are expected in this area. Also, the possibility of creating a market of “charter member” should be investigated. The possibility that each member has the right to sell his or her charter creates a market for the rights to access the organization that is a matter of discussion and research because it involves a lot of problems in the division of the benefits from cooperative use. And, there are the problems of coalitions between partners.

The second problem can be referred to as the “time consistency” issue. As we have mentioned, considering side payments in the models is a form of obtaining more stable commitments. The problem of time consistency refers to the question of knowing what the conditions are that make the commitments more stable for the future. Should the rules be more or less flexible? In a situation in which the stocks’ recovery is uncertain, what kind of agreement can be more trusting and less dependent on members’ own motivations? What are, for example, the effects of introducing climate change issues? We return to the central question: coercive or non-coercive agreements? How can we design the organizations (their structure and rules) to make them more resistant to the passage of time and to future changes?

Third is the “interlopers” issue. This is a different form of looking at the new entrant issue. Suppose that a possible new entrant in the fisheries decides not to enter the RFMO and stays a free rider to exploit the straddling stock. With the present rules of the game, how can the “co-managers” enforce their rules on non-members? Without any real capacity to intervene or to enforce, cooperation will turn into disillusionment and encourage free riding, even for the members of the RFMO. Most of the literature on fishery management, since the seminal paper of Gordon (1954), implicitly assumes that enforcing the laws is a flawless and costless process. Even when such costs and flaws are recognised, they are not incorporated into the analysis to show how management and regulatory policies are affected by their presence. Even so, there are many studies that deal with the question of non-compliance problems in fisheries, and they often explore this issue with a formal model of fishery law enforcement that combines standard economics of fisheries and game theory, and the theory of “crime and punishment” from [Becker \(1968\)](#). These models show how fishing firms behave and fishing policies are affected by costly, flawed enforcement of the law, and their application and operationalization should be revisited.

5 Conclusions

The aspects surrounding the relationship between use rights and the sustainable use of natural resources represent an

excellent field of research. The question of managing straddling stocks is clearly one of the most interesting, not only for its intrinsic importance, but for what it could mean in terms of future developments concerning international maritime law.

Extended fishery jurisdiction gives coastal countries use rights and the potential for sustainable management; however, this general evolution towards more exclusive rights does not mean the exclusion of free access to the high sea fisheries.

The unfinished business of the Law of the Sea, that is, the imprecise definition of use rights in the high seas adjacent to the EEZs, and the consequent difficulties in managing straddling stocks, was the basis for many discussions and “fish wars” in the 1990s. The turbot war is a good example of one of these wars. There are different narratives about it that present several multidisciplinary focuses. This particular paper highlights the social-ecological dimensions of the case.

The literature on this area pays special attention to the need for cooperation to solve the problem. The 1995 UN agreement on the Management of Straddling Resources and Highly Migratory Species was intended to overcome this problem and to promote a new form of cooperation among states interested in resource management.

Despite some interesting results, this agreement remains the subject of debate, especially in the context of NAFO. Given the poor replenishment of cod stocks, the leading fishing organizations of Newfoundland are promising a solution to the conservation problem: the extension of the EEZ up to the limit of 350 miles to coincide with the edge of the continental platform. The discussion on the extension of the EEZ and a certain rehabilitation of the legal and economic status of the continental platform that has followed could bring life to the debate on the possible evolution of international maritime law.

Nonetheless, even though this debate on “deep waters” is continuing, it would be important to again discuss these issues in conjunction with the actual process of constructing a legally binding instrument under UNCLOS on the conservation and sustainable use of biological resources beyond national jurisdiction. The scope of this instrument is larger and involves many subjects other than the fisheries. It is interesting to note that in several steps of this process, the methodology used in the case of the fisheries, such as the management of fisheries in the high seas by RFMOs, was emphasized and ultimately seen as a particular case of success and a possible source of inspiration.

The development of discussions at the UN seems to be a perfect occasion to re-discuss the governance model and to try to find new solutions to the problems that still affect the management of high seas fisheries. Are we going to take advantage of this occasion to reform the 1995 agreement and, at least in practice, to attack the problems of new entrants or the problems of enforcement and control? Of course, we cannot forget that achieving a global commitment is not easy. Perhaps important gains in the domain of fisheries are not feasible. The apparent satisfaction with the status quo is not a favorable outcome in our opinion. Are there convincing advantages to “business as usual”? Or, by contrast, as soon as the stocks are replenished will the enlargement of EEZs become a priority for some coastal countries?

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