

SLICING PIES: A POLITICAL SCIENCE PERSPECTIVE ON DISTRIBUTIVE ISSUES IN THE UN FISH STOCKS AGREEMENT

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INTRODUCTION

In response to the problem of sustainable use of living marine resources, a number of international agreements that express a growing concern with the conservation aspects of resource management has been developed (Hoel et al 2005). While conservation and efficiency issues have dominated contemporary discussions of fisheries management, the real world of fisheries management is been plagued by problems of distribution (Alcock 2002, Hoel and Kvalvik 2006). At all societal levels, the international, the national and the local, issues of distribution are critical to the performance of resource management regimes.

Up to one third of the global marine fish catch derive from fish stocks that require cooperation among states on their conservation (Munro et al. 2004). This necessitates the resolution of problems of allocation or distribution. The issue of distribution – the “who gets what” - is the essence of politics (Lasswell 1911). Political considerations are likely to loom large in any conservation effort involving scarce natural resources.

In this paper we argue that the introduction of new regulations in a fishery will always entail distributive implications. Changing the way a “pie of resources” is be managed affects the way that pie will be sliced. We illustrate this by discussing a number of governance principles and policy options in both a theoretical and empirical context with a view toward the Law of the Sea and the UN Fish Stocks Agreement.

THE PROBLEM OF DISTRIBUTION

The intuition that fisheries managers could benefit from political science insights is reinforced upon a further review of a 1997 OECD report and its technical appendix. The technical appendix of this report features a prisoners’ dilemma (PD) game, which is depicted as representative of the underlying strategic situation the authors’ see as inherent to fisheries management problems. The example in this appendix is borrowed from Clark (1990), wherein the “players” are taken to be two countries contemplating strategies of conservation vs. depletion of a fisheries resource, representative of the strategies of cooperation and defection in standard PD games. Citing Clark, the appendix “observes that unless the countries reach a binding agreement to conserve and manage the resource, both countries will inevitably decide

to deplete the resource” (Organization for Economic Cooperation and Development 1997: 161).

While there is nothing inherently wrong with this technical illustration it is interesting to note that recent theoretical arguments in international cooperation have claimed that a primary impediment to a better understanding of the interaction between issues of efficiency and distribution, and of international cooperation more generally, has been an over-reliance on the conventional insights gained through the study of the prisoners’ dilemma game in its standard form (Fearon 1998). The basic claim of these arguments is that most real world situations combine elements of different strategic games. In particular, it is suggested that a bargaining phase of cooperation that resembles a coordination game frequently precedes the enforcement phase that is so nicely captured by a prisoners’ dilemma game. With respect to Clark’s example, agreement on how to allocate the resource is not as straightforward as the hypothesized 50-50 split makes it seem. Variation in the distributive consequences that result from alternative rule arrangements – represented in the form of payoff asymmetries by game theorists – are notably absent in PD. The mutually cooperative “solution” to PD, and to PD applications to commons problems, is usually represented in the form of a single cooperative arrangement with symmetric benefits. In most real world situations, however, commons situations that consist of homogenous actors amenable to what they perceive to be an equitable allocation of benefits are rare.

PRISONERS' DILEMMA

Fisheries

| | Country B Conservation | Country B Depletion |
|---------------------------|---------------------------|------------------------|
| Country A Conservation | 5, 5 | 1, 7 |
| Country A Depletion | 7, 1 | 3, 3 |

Figure 1

We will attempt to convey this point through slight variations to the table and graph that comprise the technical appendix of the OECD report referenced above. Figure 1 represents a standard PD game. In a single game, the equilibrium strategy is mutual defection, since defection secures a higher payoff given any move made by each country’s opponent. Both players would benefit, however, by cooperating (both countries would secure a payoff of 5 as opposed to 3). The point of departure for a

multitude of inquiries that begin with this observation has been to examine the conditions under which actors can move toward and sustain the mutually cooperative equilibrium of (5, 5).

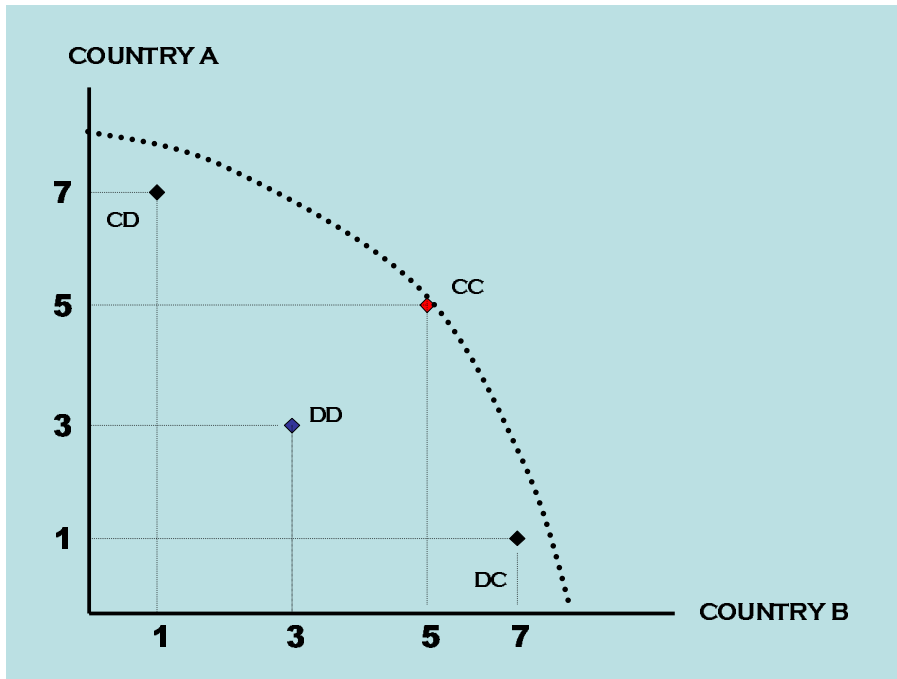


Figure 2

Figure 2 provides a graphical representation of the same strategic situation. In a single play game both countries find themselves stuck at the Pareto inferior outcome, DD. The task is to examine the conditions under which the bargaining parties can move toward the Pareto optimal outcome, CC. Much of literature on cooperation emphasizes the importance of communication and trust as factors that allow actors to move from DD to CC, as well as the importance of monitoring and enforcement as factors that allow actors to stay there and avoid the asymmetric defection outcomes of CD and DC (Keohane 1984; Oye 1986). As the OECD appendix alludes, enforceable agreements that will bind each actor to the mutually cooperative outcome and assure both that they will not fall victim to cheating (their worse case scenarios represented by the asymmetric defection outcomes of DC for Country A and CD for Country B) are normally looked upon as facilitators of cooperation. Now consider Figure 3, below:

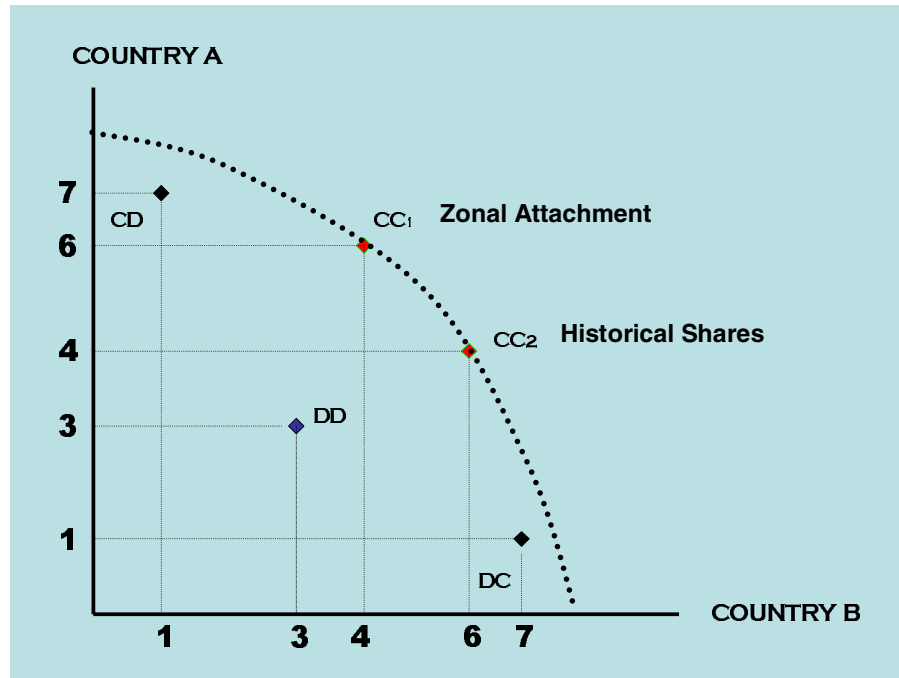


Figure 3

Suppose that two actors find themselves in the Pareto inferior situation represented by the point DD. Suppose, further, that the actors are confronted with competing options for allocating the resource. For the purposes of this argument we will assume that these options reflect principles of zonal attachment and historical shares, respectively. Each option corresponds with what could be considered mutually cooperative behavior in a PD game and each will generate what would be considered Pareto superior outcomes. Importantly, though, neither option results in a symmetric distribution of benefits. In the absence of side payments the actors must choose between options that distribute the total welfare 60%-40%, in favor of one actor or the other. Each actor stands to benefit from reforms regardless of which option is chosen but each stands to gain more if their preferred policy option is selected.

When this coordination problem is embedded within an otherwise PD-like situation the incentive to defect is not eliminated and the resulting monitoring and enforcement problems remain. Fearon's contention is that the bargaining and enforcement problems interact. He models the strategic interaction between the two actors as a two phase game. The initial phase is a war of attrition in which each actor's decision to enter into an agreement will depend in part on the expected costs of delay vis-à-vis the expected marginal benefit of holding out for their preferred terms of cooperation.

Three insights from Fearon's model are noteworthy for international fisheries cooperation. The first concerns the importance of focal points. In response to the hypothetical situation depicted in Figure 3 one might ask what is to prevent the two countries from splitting the difference between competing principles and settling for a 50%-50% split? Indeed, if equal shares of the total allocation are viewed as a fair settlement by both parties than the bargaining problem can be averted. The conventional logic of a standard PD setting should hold. But agreement on what

constitutes a fair distribution of benefits is elusive. More often than not there are significant disagreements over how the gains of cooperation should be divided and when this is the case the issue of side payments becomes moot. Side payments are mechanisms for redistributing benefits; however, if prospective cooperating parties cannot agree on how to divide the cooperative gains then the bargaining problem persists. The bargaining problem is mitigated less by the possibility of side payments than by focal points that can engender a consensus on distribution.

A second insight from Fearon's model relevant to fisheries issues concerns the amount of collective benefits associated with cooperation. Conventional wisdom suggests that the greater the collective benefits from cooperation the more likely cooperation will result. However, if higher collective gains are associated with increased marginal benefits for preferred terms of cooperation vs. default terms then the incentive to hold out is strengthened. In other words, countries have incentive to delay cooperation in the hopes of securing their preferred terms when the stakes are high. Conversely, lower stakes lessen the incentive to hold out. This logic suggests that agreements are often delayed until fisheries have been severely depleted on account of there being little left to fight over.

The third insight concerns temporal factors related to time horizons and discount rates and it is based on a similar logic to the one above. Long time horizons and low discount rates are often looked upon as facilitators of cooperation. However, Fearon's model suggests that they also strengthen incentives to hold out since the future value of the marginal benefits from preferred terms become more significant. Fixed contract periods are one potential way to artificially shorten time horizons and facilitate quicker agreements.

The insight that we find most important in our consideration of the international legal framework for fisheries issues is the first. We shall explore this point further in the context of the Law of the Sea and the UN Fish Stocks Agreement.

THE LAW OF THE SEA AND THE UN FISH STOCKS AGREEMENT

Since the end of WW2, global marine fisheries have grown to some 80 million tons, causing over-fishing of many fish stocks (FAO 2005). At the international level, the institutional response to the overfishing problem has been the construction of a global framework for the management and conservation of living marine resources. This framework consists of legally binding agreements, soft-law, as well as a number of on-going processes for negotiating issues relating to the management of the oceans and their resources.

The most important aspect of this governance framework is the 1982 Law of the Sea Convention ("the Convention"). The Convention establishes a legally binding global framework for regulating the use of the world's oceans (Burke 1994). A key aspect of the Convention is that it provides for the right of coastal states to establish 200 nautical miles (371 km) Exclusive Economic Zones (EEZs) where they have sovereign rights over the natural resources. The Convention obliges states to manage fisheries sustainably, requires them to cooperate with other countries, and to work towards optimal utilization of resources (art. 61-63). On the high seas, beyond the

EEZs, the freedoms of the high seas (Art 87) prevails, and the regime sketched out by the Convention (art. 116-119) is rather lax.

The problems of sustainability in fisheries, inside and outside the EEZs, became ever more visible and drew increasing political attention with the collapse of the cod fisheries off eastern Canada (Harris 1998). These developments instigated a number of initiatives to supplement the existing global framework for ocean governance. In particular, the preparations for the 1992 United Nations Conference on Environment and Development (UNCED) became a hotbed for this issue, resulting in a call from UNCED for the UN to engage the issue of high seas fishing.

As a consequence, the UN General Assembly in 1992 mandated the negotiation of an agreement to alleviate these problems. Following several rounds of talks 1993-1995, the so-called UN Fish Stock Agreement (“the Agreement”) was adopted in August 1995. The major features of the Agreement include the introduction of a precautionary approach to fisheries, the strengthening of regional cooperation in fisheries management, and the development of rules for more effective enforcement of regulations. It also introduces mandatory dispute resolution (Balton 1996).¹ The agreement entered into force in 2001.

The most salient distributional rule of this governance system is the provision of the Convention that coastal states have sovereign rights over the natural resources in the EEZ. This means, essentially, that resources can be reserved for fisheries of the coastal state in question. The introduction of EEZs therefore resulted in redistribution of fishing opportunities in favor of coastal states. Distant water fishing fleets had to look for new fisheries at the high seas or off the coasts of countries that had not established an EEZ. The rules of the Convention sort fisheries into a number of distinct categories: *exclusive* fish stocks are those found in the waters of one state only. However, fish stocks often have a geographical distribution that covers the waters of two or more states. These are termed *shared* (or transboundary) stocks and states are required to seek to agree on their conservation and development (article 63). Worldwide, 1000 –15,000 fish stocks are shared stocks (Munro et al. 2004).

A third type of fish stocks – of particular concern to this paper - are those that have a migratory range spanning the high seas beyond the EEZs. Such *straddling* fish stocks represent particular problems of cooperation, as the high seas freedoms still prevail beyond the EEZs. However, states are also required to attempt to cooperate on conservation, in the area beyond the EEZ.² A fourth category of fish stocks are *highly migratory species*, which are listed in an annex to the Convention.³ In this case the Convention puts more emphasis on international cooperation, and requires states to cooperate.⁴ The Convention gives some vague guidance as to the allocation of fishing rights among states for fisheries on the high seas: the traditional right for all to fish on the high seas is reconfirmed. At the same time, a coastal state preference is

¹ The full title of the agreement is 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.”

² Article 63.2, as well as 116-119 of the Convention

³ These are listed in an annex to the 1982 Law of the Sea Convention

⁴ In addition, *discrete* fish stocks include species found only at the high seas, but not on the list of highly migratory species.

established: states that fish at the high seas shall observe the interests of coastal States (article 116).

The Agreement builds on the rules of the Convention and extends its fisheries regime by providing more specific principles for the distribution of fish resources between states on the high seas.⁵ It establishes rules for distribution of fish stocks by two seats of measures: one that specify how states are to achieve management measures that are *compatible*, and one that specify the criteria for how *newcomers* can get quota rights in a given fishery (Orrego Vicuna 2001).⁶

The principle of compatibility means that fish stocks have to be managed as a whole. If conservation efforts are to be effective, they have to apply to the entire migratory range of fish stocks. For straddling fish stocks, states therefore have to cooperate directly or through a regional organization or arrangement for the conservation of them on the high seas.⁷ Within EEZs, this is a matter for the coastal states. As to highly migratory species, cooperation on conservation measures is to apply to the entire migratory range.⁸

Article 7 of the Agreement specify a number of criteria that, inter alia, require states to ensure that the measures adopted for such fish stocks on the high seas do not undermine those adopted by coastal states for the same stocks in areas under national jurisdictions; to take into account previously agreed measures for the high seas fishery; to take into account the biological characteristics of the stocks and the relationships between stock distribution, the fisheries, and the geography of the region; to take into account the respective dependence of the coastal states and the states fishing on the high seas for the stock in question; and to ensure that the measures adopted do not harm the resources as a whole.⁹

The issue of newcomers in the Agreement is a reflection of the fact that many of the overfishing problems stemmed from flag-of-convenience vessels from states new to a given fishery. The right for all to fish on the high seas is intact, but is in the Agreement made contingent on participation in a regional fisheries body or compliance with its measures. This requirement is balanced with a provision stating that regional management bodies are to be open to all states having a “real interest” in the fisheries.¹⁰ The criteria for allocating with fishing rights to newcomers include the status of fish stocks and the existing level of fishing effort; the interests, fishing patterns and practices of existing members and newcomers respectively; their contributions to conservation and management, collection of data and conduct of research; the needs of coastal fishing communities dependent on the stocks; the needs of coastal states who are overwhelmingly dependent upon living marine resources; and the interests of developing states.¹¹

⁵ The Agreement applies to straddling fish stocks and highly migratory fish stocks only, not other marine species as marine mammals.

⁶ For a thorough analysis of these matters, see Orrego Vicuna 2001.

⁷ Article 7.1.a of the Agreement

⁸ Article 7.1.b of the Agreement

⁹ Article 7.2a-f of the Agreement

¹⁰ Article 8.3 of the Agreement

¹¹ Article 11a-f.

In addition, the Agreement addresses the concerns of developing countries, among other things the participation in regional fisheries management organizations and the provision of assistance in scientific research.¹² A special fund has been set up for the provision of assistance in this regard.

While the global framework for oceans governance does not provide specific rules on the distribution of shared resources between states, it does so for the fisheries at the high seas for straddling fish stocks and highly migratory species. These principles are sufficiently vague to provide ample room for interpretation, and therefore negotiation, in real-life fisheries negotiations. The distributional principles translate into four norms that states can lay more or less emphasis on in the distribution of resources between them:

- preferential treatment of coastal states
- traditional fishing patterns and practices
- geographical distribution (i.e. zonal attachment)
- fisheries dependency

These rules can affect both the determination of the stock components at the high seas, and the distribution of the high seas portion of any given stock between states. The rights of the coastal states in the EEZ are protected, as the conservation policy of the coastal state will be the prevailing element of any high seas regime (Orrego Vicuna 2001:39).

A crucial aspect of these rules is that they differ with regard to how they can be implemented and operationalized. As a result the rules do a poor job of providing focal points for distributional agreement. Historical fishing patterns and zonal attachment principles can sometimes be too documented and translated into quantitative measures. But consensus is lacking on using either as the primary principle for allocating rights in high seas fisheries. The principles of coastal state preference and fisheries dependency are even more subjective and difficult to quantify. Therefore, the interpretation and operationalization that is required to apply them to practical management problems and situations is likely to default into a distributive bargaining game like the one modeled by Fearon.

In addition to the subjective character of the suite of allocation principles contained within the Agreement the influence of the rules is significantly hampered by non-parties to the Agreement. Several major fishing states have not ratified the Agreement and do not subscribe to its provisions.¹³ This applies to states that host vessels flying their flag, as well as major fishing states that have reservations about provisions of the agreement. Such reservations concern among other things the compatibility issue where some distant water fishing nations feel that the Agreement encroaches on their traditional high seas rights.

¹² Articles 24-26 of the Agreement.

¹³ The collective ratification of the then 15 EU member states in late 2003 provided a much needed boost for the status of the agreement.

Hoel and Kvalvik 2006 have, in an examination of the implementation of these rules in the North Atlantic regional fisheries organization, concluded that in giving effect to the global rules, states accord most weight to zonal attachment and traditional fishing patterns and practices. Also the principles of a coastal state preference and dependency on fisheries may be at work, but are more difficult to observe and quantify. Without the Agreement these distributional arrangements would probably have been more difficult to negotiate. The Agreement gives important impetus for strengthened regional cooperation overall. Not only rules, but also the nature of the management problem states are facing is an important determinant of distribution: whether the fish stocks at hand are shared or straddling, stocks status stable or changing; whether participants are coastal states or not and the history of their involvement; whether the boundaries between countries in the region is agreed; and whether states allow for fishing in each others' waters. Factors such as these can affect the severity of the bargaining problems encountered and the potential for reaching agreement on the management of a given fish stock.

CONCLUSIONS

A fundamental issue of fisheries management at all societal levels is how to deal with the issue of distribution, or "who gets what". We believe that the salience of this issue is often obscured in conventional applications of lessons from PD games. More recent work in international relations literature that conceives of cooperation in terms of both a bargaining and enforcement phase seems instructive for understanding fisheries agreements for straddling stocks and highly migratory species. In particular, we note the importance of focal points that can provide a basis for agreement on allocating fisheries resources.

The Convention and the Agreement establish a variety of distributional criteria for straddling fish stocks and for highly migratory fish stocks that are applicable at the high seas in the case of straddling fish stocks and throughout the migratory range for the latter. The rules state that the efforts to manage straddling fish stocks and highly migratory fish stocks at the high seas not shall undermine coastal state conservation efforts in their EEZs, take previously established measures as well as biological and geographical factors (zonal attachment) into account, as well as the states' respective dependence on fish stocks. While these criteria offer a number of possible focal points for resolving distributive bargaining problems they do not do a very good job of emphasizing any one in particular and thus leave ample room for competing interpretations and associated distributive bargaining. And allocation agreements are all too often delayed until fish stocks have been seriously depleted.

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