

A FISHERIES MANAGEMENT AUTHORITY
A Keynote Address By Francis T. Christy, Jr.

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"Fishermen's Quotas: A Tentative Suggestion for Domestic Management "
by the University of Rhode Island's Law of the Sea Institute:
an Occasional Paper that permanently changed fisheries management.

Twenty years ago I reached the UN mandatory retirement age of 62 and returned from Rome and my work on small-scale fisheries with the Food and Agriculture Organization (FAO) of the UN, and spent a few years working on various projects with the World Bank and the Inter-American Development Bank. These included a report on the fisheries research needs for developing countries, which I prepared with Jean-Paul Troadec; a study of Namibian fisheries for the World Bank; and studies of Trinidad and the Bahamas for the Inter-American Development Bank. While all of this was very rewarding, it wasn't sufficient to keep me satisfied, so I went through a paradigm shift and became a full time photographer.

This will explain, in part, I hope, my dearth of knowledge of what's transpired in the field of fishery economics during the past decade or so. Though I shouldn't use that as an excuse, I feel that I might be granted some leeway in your consideration. Be that as it may, I am impressed by the amount of articles that have appeared in the past decade, which I have found through Lexis/Nexis, J STOR, and the outstanding work of my assistant, Nancy Forvil. This work will provide the basis for my remarks this morning.

First let me point out that very little of the work that I have found relates specifically to developing countries either in terms of what we might be able to learn from them or what they might be able to learn from us. This has been a major fallacy and drawback. It's a loss because they may have developed new systems for management through trial and error; systems which they have maintained through their traditions. On the other hand, we may not be sufficiently attuned to their situations to know whether something will or will not fit within their structure. For example, when I wrote the article on fisherman quotas in 1972, I was not thinking about developing countries. Indeed it was not until several years later that I found occasion to say that ITQs would not work in developing countries, except under rigorous conditions. This occurred at a Conference in Vancouver where a passel of New Zealanders was in attendance. And who complained loudly when I had the temerity to say that ITQs would not work in developing countries. This was followed by the remark by one of the New Zealanders that his Daddy had told him that anyone who said that something wouldn't work had not given the problem sufficient thought. Be that as it may, I don't think that a fisherman off the coast of Kerala, India, would be satisfied with a quota for a ground fish stock that migrates through several villages before and after his village. It is a matter of trust and I think it is stretching trust too much to believe that all of the fishermen for the same stock are independently honest.

In the attempt to learn what can induce a collective of fishermen to cooperate in the claim to acquire a TURF, (Territorial Use Right in Fisheries, Christy, 1982) we must examine what fishermen want from the use of the resources. Briefly, at the least, they want to maintain their employment, they would like to ensure that declines in yield and economic returns do not affect them, and they would like to benefit from any improvements that can be made to the resource or to its economic characteristics. Unfortunately these kinds of benefits do not automatically appear with increased use of the resources. In fact the opposite is generally true, under the open access condition.

The prevention of these wastes requires the establishment of some form of property rights or exclusive use rights. This in turn may require a TURF which raises a significant question about who should be able to get the rights of access and who should be excluded. Without the assumption of exclusive use rights, these systems would not be put into effect. Although the benefits can be very high, the costs associated with the assertion of claims to exclusive use can be very great. There are three kinds of motivations which will facilitate acquisitions of exclusive use rights by the collective of fishermen.

The first group of motivations has to do with the construction and implementation of fish aggregation devices (FADs) in artificial reefs and floats. Fishermen are not willing to insert fish aggregation devices without some assurance that they can receive satisfactory returns for their investments. This means that fishermen will have to exclude others from the fishing site. John Kurien describes a situation where two different systems have been put into effect (Kurien, John, 1991). In one system a group of wealthy fishermen has tried to capture the entire rents themselves. They are the sole investors in the system and they expect to get full rents. In the other system described by Kurien, the organizers appeal to the members of the community to invest what they can within the association of the artificial reef. Thereafter any member of the community can fish on the reef. This system appeals to Kurien because it is community based. It may also give it more security in its maintenance, although it may not achieve the same amount of economic rents. In both systems the investors assume that they will have full and sole access to the resources. Both of these systems which require some additional investment might be called FADTURFS.

The Second system which could be adopted by communities relates to the potential economic rents. Under the open access conditions there are frequently too many producers with associated economic and physical wastes. Economic rent is dissipated, as the costs of the capital and labor rise to meet the total revenues. In this situation agreement among the fishermen to restrain their own effort will allow them to produce significant rents. In addition, the fishermen can restrain their catch to achieve higher prices for their products. One example occurred in the Haragama Fisheries Cooperative where a sudden decrease in the value of Mantis shrimp simulated the cooperative to restrict the supplies to the market so increase the prices received by the fishermen. This might be called a RENTTURF.

There are some situations in which a TURF derives in part from the desire to maintain stability within communities or user groups. Many TURFS that have emerged traditionally in isolated

societies are essentially social mechanisms that serve to prevent a break down of societies. This kind of EQUITYTURF serves to avoid mutual damages associated with congestion and conflict.

A good example can be seen in cod bottom trawl fishery management implemented in the Akita Prefecture. In 1977, 'collective fishing' became operational to overcome problems which had arisen from excessive competition among the trawlers on the cod fishing ground seeking the most favorable spot. A dense school of fish migrated to the very small area and therefore as the number of trawls cast increased, the productivity per boat drastically decreased. There was severe competition to secure the favorable spots and enjoy the first haul (Hotta, 1992)

"Collective Fishing" was then initiated by the cooperative where the proceeds from all the vessels were pooled and distributed to all the participating vessels on an equal basis after the expenditures were deducted. This method generates positive effects in respect of energy savings (30 percent) alleviation of physical and mental burden, prevention of sea accidents, eliminating marketing responsibilities, increase in productivity through improved exchange of information" (Hotta, 1992).

"These three kinds of motivations for collective effort provide the bases for better management of fisheries. In each case they require the assertion of exclusive use rights which would mean that some fishermen would be excluded from the fisheries. There are some, however, who do not share this view of the importance of exclusive use rights for fisheries. Their view is that (and I quote from MACINKO AND SCHUMANN 2008):"A property right in natural resource management has become something of an obsession in the realm of marine fisheries management and marine conservation. Despite recent challenges, the so-called rights-based fishing movement has considerable inertia. Interestingly, we have remarkably few detailed accounts of the processes by which people have attempted to put these ubiquitous ideas about property into effect by transforming existing fishery management regimes. There are studies of the results. of the performance under the new regime, but not of the process by which a new articulation between humans, nature, and commerce comes to be regarded as preferable for those people in that time and place (Macinko and Schumann, 2008)"

The problem with this point of view is that the authors do not make a case for their position. They maintain that fishermen will be satisfied with rights expressed in terms of inputs rather than outputs or rights to a specific share of a resource. But rights to inputs are noticeably unstable and do not withstand the ravages of time, largely because of the difficulty of ensuring that they do not creep upwards to the point where they can take the whole yield from the stock. It is, for example, common in stocks where there are input controls such as the number of vessels, that individual owners of vessels will increase their investment in the size of the vessels so as to increase the share for themselves. And since all participants have the same motives, the upward movement in capacity to take the fish is large and noticeable. The dilemma is great

since fishermen are used to expressing their effort in terms of inputs rather than as shares of the yield of a stock of fish. Indeed, the authors themselves recognize this force and I quote

“Even while capping the overall number of traps, the plan might *increase* (italics theirs) effort. Once trap tags become a tradable commodity, every trap is likely to be fished to its maximum earning potential. The economic theory of transferability in limited-license fisheries programs predicts that licenses will flow to those who can use them most efficiently. Those fishers thus will pay the most for them on the market. In essence, once traps (trap licenses) are individually valuable (saleable, or, depending upon program detail, subject to lease) each trap has an opportunity cost of being idle or under-used. This opportunity cost will, over time, force traps into their highest and best use.”

The expression of fishing in terms of product rather than inputs is necessary for the effective management of the resources. This, in turn, means that management cannot escape the fact that it can only be achieved by determining who gets what from the use of the resource. It essentially requires a distribution decision. This is the difficulty of managing fisheries and the source of all the mischief in the literature, the assumption that one can cook an omelet without breaking an egg.

It is, however, a wealth distribution question for which there are no clear cut criteria. Nevertheless, without such a decision, the chances of improvements in fishing are negligible. The decision depends in large part upon the situation that exists. In many situations there exists a conflict between large and small scale fishing operations. In these kinds of situations, the small scale fishermen may be operating small nets from log canoes (katamurams). And they may be fishing for the same stocks that are used by the large scale operators. But even if not, the obvious differences between the gear strain the situation, and physical conflicts among the vessels may emerge, such as physical destruction of the small-scale gear or even its vessels. Retaliation is not uncommon, leading to the destruction of numerous vessels and gear. Howsoever, in spite of the potential difficulties all parties can be better off with the exclusive use right in place.

One of the elements that is more difficult to achieve is overcoming the absence of trust between fishermen. This lack of trust is the reason why the bountiful resources at Georges Bank and off the coast of Labrador and Newfoundland have been so wasted.

Georges Bank forms the off-shore boundary of New England's own semi-enclosed sea known as the Gulf of Maine. Cold, nutrient rich waters from the Labrador current flow from the North and mingle with warm Gulf stream waters in the shallow areas on Georges Bank. Here, sunlight penetrates the water column, providing the ideal habitat for phytoplankton, which on Georges Bank grows three times faster than on any continental shelf. This phytoplankton production fuels a highly productive food web on Georges Bank and in the Gulf of Maine, where the Atlantic codfish traditionally reigned as top predator. The unique oceanographic features of Georges

Bank and the Gulf of Maine not only fueled a cod-ecosystem, but the cod and other groundfish like flounder and haddock in turn supported the fisheries that helped give rise to our nation. (Fleming and Crawford 2006).

As to the wastes, "We seem to be content-to share 10% or less of what used to be there, and we now just go fighting among ourselves for the scraps that fall off the table. The Grand Banks were once a tremendously productive marine ecosystem" (Dr. Art May, as cited in *The Management of Atlantic Fish Stocks*) "Believe me, after 50 years of knowing the Spanish, the Portuguese, and the rest of these people, particularly the owners who run the fishery, not the governments, I can tell you that despite what they say [...] there will never be any recovery of the fishery on the Grand Banks" (Gus Etchegary, retired industry executive and former Canadian commissioner to ICNAF and NAFE, Committee Proceedings, 9 November, as cited in *"The Management of Atlantic Fish Stocks"*).

Heretofore, this paper has ignored the question as to the ownership of the marine resources. It has talked about the need for exclusive use rights and why without them all management will fail. But it hasn't broached the idea that there could be a separation of authority between the owner of the use rights and the owner of the resource. We've assumed that resources are owned by the public and that the benefits to the public come from the rational use of the resources.

However we might give the public a more direct role in benefiting from the resources. This is particularly important when considering new alternatives in the management of the Georges Bank because of the conflict and lack of trust among the fishermen and because the public has received no benefits by the use of its resources nor is it likely to in the future if management persists in relating use rights to benefits. I propose as a member of the public that owns the resources there be created a Northwest Atlantic Fisheries Management Authority. This management authority will have the sole right to the resources and can determine where and what kind of fishing will take place. It could employ present fishermen and their vessels to harvest the stocks or it could choose a manager who would be responsible for achieving whatever objective the authority wishes whether this be maximum economic rent or maximum production in the cod, flounder, and other groundfish in the area. Through this means, resources could be managed efficiently and the public would benefit by receiving a share of the proceeds. The Management Authority would be able to deal with the splits between the coastal states (U.S and Canada) and between them and the distant water states such as Spain and Portugal. The management authority would also have the right AND responsibility to deal with the illegal fishermen who believe they have the right to prevent the realization of the economic rents. The public has a right to benefit from the use of its resources. Like the Tennessee Valley Authority (TVA) the NWAFA could maximize the rents from the resource and share them with the states involved.