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AND ITS IMPLICATIONS FOR  
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by

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## THE TWO HUNDRED MILE ECONOMIC ZONE AND ITS IMPLICATIONS FOR FISHERIES MANAGEMENT

Manjula Shyam\*

### The Old Regime: Freedom of the Seas

The basic premise underlying the fisheries regime until the middle of the twentieth century can very simply be described as freedom of fishing on the high seas. Most nations claimed a territorial sea ranging anywhere from three to twelve miles, in which they exercised sovereign rights. But beyond this twelve mile zone were the high seas in which the sole governing principle was freedom of the seas. This old concept of freedom of fishing on the high seas has become dysfunctional as a result of modern fishing techniques and other technological developments.

Freedom of fishing has led to over exploitation and a reduction in the total world catch of fish. Freedom of fishing becomes the license to kill off entire fish stocks. The salmon stocks in the Atlantic have become depleted, the herring stock of the Norwegian sea has now practically vanished and the hunchback whale and blue whale are virtually extinct. This free and unrestrained exploitation is a luxury that contemporary society can no longer afford. It has been estimated that the global demand for marine resources by the year 2000 will be about seven times the 1970 level of harvest. In order to sustain this growth it will be necessary to manage and maximize the harvest from the sea much more effectively than has hitherto been the case.

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Freedom of fishing was not a problem when the sea was regarded as infinite and the fish inexhaustible in relation to man's capacity to fish. Free or open access has become counter productive with the development of large, modern, and highly organized fishing fleets which have a great deal of mobility and adaptability. Using sophisticated electronic gear they can catch fish much more efficiently than was ever possible by smaller coastal vessels. If they deplete the local stock their mobility and adaptability allow them to move on to other grounds. Thus the present system leads to overexploitation and discourages conservation as can be seen in the increasing number of fish stocks that have been depleted.

The system is also economically wasteful and inefficient. Free competition leads to overcapitalization. It leads to the employment of excessive numbers of vessels and fishermen. FAO estimates that it is possible to halve the present cost of landing cod from the North Atlantic thereby saving approximately one hundred seventy-five million dollars a year. It leads to excess and redundant capacity of the fleet as each nation expends more and more capital to build faster, larger and greater number of vessels to increase its in-take in comparison with the other competitors. The fishing season has grown shorter and shorter, for example, in many areas of Eastern Pacific the fishing season for Tuna reduced from the usual ten months to three months which means that all this expensive equipment is idle for a greater part of the year.

But what has really discredited the current system is its problems of allocation. There is a vast difference in the capacity of nations to exploit fisheries at different stages of economic development. The primitive fishing boats of the developing nations are unable to compete with the fishing flotillas of the developed nations which can literally sweep the ocean and leave a dead sea behind. Statistics support the claim that most of the ocean's bounty goes to a handful of rich nations while the vast number of developing nations are unable to get their fair share.

#### The New Consensus: The Economic Zone

<sup>h</sup><sub>g</sub> Thus all these developments have led to the conclusion that the present system of marine exploitation is inadequate and must be supplanted by a new system which guarantees two tenets. They are, first, the exclusive rights of the coastal states over the utilization of the marine fisheries resources should be recognized and secondly, the optimization of the stock or the maximum sustainable yield<sup>1</sup> of marine resources should be encouraged. The result is an emerging consensus around the economic zone concept. Coastal states will enjoy exclusive rights over fisheries in the economic zone which will extend up to hundred miles from the baseline from which the territorial sea is measured. Thus a new legal concept of economic zone has come into being in between the territorial sea and the high seas.

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<sup>1</sup> Maximum sustainable yield is a biological concept which means reaching a balance between the capacity of the resource to renew itself and the harvest that man may safely take. After fishing begins, the catch increases in proportion to the fishing effort. But there is a limit to the total amount that may be caught. If the intensity of fishing increases beyond that point, the total catch will begin to drop because the capacity of the resource to renew itself has been reduced. However, it takes time, almost ten years, to establish the trends in any fish yield because of the natural fluctuations in the fish population.

It should be pointed out that most of the living resources are found in the shallow regions of the oceans close to the land above the continental shelves. The mid ocean regions are the deserts of the sea. It is estimated that approximately 80% of all fish are to be found in the oceans two hundred miles from the shore.

#### The Third Law of the Sea Conference

The Third Law of the Sea Conference is attempting to draw up a new international legal regime not only to regulate fishing but also seabed mining, shipping, scientific research, military use of the ocean and many other issues. A few words about the nature of international law would be appropriate here. International law is dynamic and constantly evolving. International law is the outcome of a political process that is willingly accepted by a large number of nation states because it represents a modicum of compromise most of them can live with. Thus, international law is not separate from international politics but an integral part of it. It will be moulded by the process of give and take between nations with conflicting claims as well as by the format and forum of negotiation.

The emerging legal framework for the regulation of fisheries has to be seen within the context of ocean politics. What are the major coalitions of nations upholding a common position and what are the different proposals that they have espoused?

### Political Coalitions

A first cut would disclose differences in the position of the developing and developed nations. All developing nations would appear to have common interests in securing a fair share of the marine resources near their coasts and in protecting against depletion of those resources. They would seem to have a common interest also in acquiring the technology to better harvest their resources. The developed nations on the other hand would appear to have a common stake in preserving the freedom to fish in distant waters and in ensuring an adequate return on the capital invested in distant water fishing fleets.

However this North - South dichotomy does not adequately explain the different claims. The geographical situation of developing and developed nations differs so widely that there is divergence within developing states as well as within developed states. Some states have long coastlines like USA, USSR, Argentina, India, while others have very short coastlines like Bulgaria, Zaire, Gambia. Some coastal states are endowed with rich marine resources near the coast like Peru while others are not like Kenya. Some coastal states because of their close proximity to their neighbouring states have little fishing zone to claim like Singapore, Iraq and Jordan. These are the shelf locked states whose only hope lies in fishing on the high seas. Then there are the land locked states like Bolivia, Nepal and Mali who in many instances are the poorest among the poor nations and who could also

fish on the high seas if they had transit agreements with the coastal neighbours for transporting personnel and equipment to the coast and the marine catch from the coast to the landlocked state. Thus shared geographical circumstances rather than a common state of economic development are the basis of coalitions on the question of fisheries.

#### Major Proposals at the Third Law of the Sea Conference

We have seen how the existing fisheries regime based on open entry and freedom of the high seas leads to problems of allocation and inefficient management practices. Now let us turn to the alternatives that have been advanced to replace the older system. All the three serious proposals, have in common a two hundred mile resource zone in which the coastal state shall have special rights over the fish. Let us examine each of these three proposals from the point of view of their effect on conservation, optimization of yield, economic efficiency, effective utilization and equitable allocation.

(1) A two hundred mile economic zone where the coastal state will have exclusive exploitation rights is the first proposal. It is argued that the extension of exclusive fishery rights will provide incentives for effective conservation measures and for maintaining the fish stock at the optimum level. It will put an end to the present over-capitalization which encourages commitment of excessive capital and manpower in relation to the fish stock.



It is also argued that it is the coastal environment that accounts for the wealth of the fisheries near the shore and therefore it is appropriate that the coastal state should be allowed exclusive rights over the resources.

This proposal has been opposed on the ground that the establishment of two hundred mile exclusive zones would lead to a gross under utilization of fish which would mean reduction in the total protein supply at a time when world needs are growing. Most of the coastal states do not have the capacity to fully exploit the fish in a two hundred mile zone while those states like Japan, Soviet Union or Poland which have invested heavily in fishing would have idle capacity. However it is argued that coastal state could allow foreign fleets to fish in their zone in accordance with regulations made by the coastal state and on payment of license fees which would provide some revenue to the coastal state.

(2) The second proposal is that the two hundred mile economic zone should not be exclusive to the coastal state but the adjacent landlocked and shelflocked states should also have the right to fish in the zone on a bases of equality. It is argued that the two hundred mile exclusive economic zone would create a new class of privileged states. Those states (both developed and developing) which have long coastlines and border on a wide ocean expanse with good fish stocks would benefit enormously, for example, Canada, Peru, and Chile but for the large number of a states a two hundred mile exclusive economic zone will only aggravate the present inequalities

by denying them the right to fish on the high seas. This proposal of regional sharing of fish gains additional significance when we realize that the landlocked and shelflocked and short coastline states, collectively referred to as the geographically disadvantaged states, constitute a blocking third at the conference, that is, have enough votes to veto any proposal. It seriously threatens the unity and solidarity of the Afro-Asian group since it has so many geographically disadvantaged nations.

(3) The third proposal is that which is put forward by nations who have distant water fishing fleets. They suggest that the coastal state should have preferential rights over fish so as to reserve for itself a catch proportional to its capabilities which it can harvest in the 200 mile zone. The remainder of the catch, however, should <sup>be</sup> left to those nations which have historically fished in those waters. It is argued that this would encourage conservation and rational management and at the same time lead to full utilization of the marine resources. It would do minimum damage to the interests of the distant water fishing states. As may be obvious, this proposal has a very limited following.

The two hundred mile economic zone modified by the claims of the landlocked and shelflocked states represents the emerging consensus. At first blush there does not appear to be very much in common between Afghanistan, Austria, Denmark, Singapore, Chad, Hungary, Jordan, Bolivia and the Netherlands and Burundi and Botswana. At the Third Law of the Sea Conference these disparate states which all have in common their disadvantaged geographical circumstance have banded together to ensure that the two hundred mile economic zone will not exclude fishing by the neighbouring

disadvantaged nations. What it will mean in practice and how it will be implemented in different parts of the world is quite another matter.

### Implications of the Two Hundred Mile Economic Zone

In any case the two hundred mile economic zone and closed entry will replace the older concept of freedom of fishing and open entry in the high seas. Let us look at some of the implications this new development in international law.

One thing that should be pointed out is that even though the primary impetus behind this move was to protect the interests of primitive fishermen from the fleets of the highly industrialized states, the two hundred mile zone works out quite favorably for many developed states. United States, Australia, Canada, U.S.S.R., U.K., Norway, New Zealand, Portugal, South Africa, Japan among others will gain enormous areas of the ocean's expanse under a two hundred mile zone. This fact also explains why a move towards the economic zone has been so successful.

Another interesting aspect of the two hundred mile zone is the divisions and conflicts it has created within nations. Let us take the example of United States. The tuna fishermen on the Pacific coast have long opposed the two hundred mile economic zone. Until recently, American tuna boats used to be regularly and routinely captured by Ecuador and Peru for fishing in their two hundred mile zones which they had unilaterally declared and which the U.S. had refused to accept. The two hundred mile zone would drive the American tuna fishermen out of business by denying them their traditional fishing grounds. But the New England fishermen on the East Coast have spent millions of dollars to lobby and put up a stiff fight in favour of

the two hundred mile zone. The reason is that on the East coast the American fishermen are the underdogs who were being driven out of business by the superior and far more efficient Japanese and Soviet fishermen who were capturing from twelve miles off the American coast, all the lucrative stocks of cod, haddock and lobster. In the early stages of negotiations, the tuna fishermen had a much bigger say because they were better organized but in more recent years the New England fishing lobby has done its homework and put up a massive fight.

It also brings out the division and divergence among the industrialized states. Japan and the Soviet Union will be the real losers of the two hundred mile zone while the United States and Canada will on the whole have reasons to rejoice over these new developments. Similarly among the developing nations, Taiwan, Singapore, Thailand, South Korea who have recently invested tremendous amounts of capital in building up distant water fishing fleets will find that the fishing grounds in the Indian Ocean and the Pacific Ocean are suddenly closed off to them. The interests of these countries are quite at variance with the interests of other developing countries like India, Sri Lanka and Burma.

A general problem is that the Third Law of the Sea Conference is attempting to impose a uniform solution where there is great dissimilarity between different fisheries and different fishery regions.

Let us look at this a little closely. That fish swim and do not respect man-made boundaries is obvious. But not all fish have the same degree of mobility. Thus there are four general classes.

(1) Where a fish stock falls entirely within the jurisdiction of a single coastal state.

(2) Where a stock swims within the jurisdiction of two or more neighbouring or opposite coastal states, for example, India and Bangladesh or India and Sri Lanka.

(3) Where a stock swims both within the jurisdiction of the coastal state and the high seas.

(4) Where a stock is found entirely outside national jurisdiction. The two hundred mile economic zone would take care of the first situation but not the remaining three.

Another characteristic of fisheries is that partial management is tantamount to no management. If a stock is found in the areas controlled by both state A and B, the stock will have to be subjected to uniform rules in both states otherwise by conserving the stock, state A would simply be reducing its own benefits in favour of its neighbours!

Furthermore, where two or more states share a stock there has to be a controlling agent who can exercise a higher degree of authority. Without sufficient controls the fishery will attract too many fishermen and vessels and the costs of labour and capital will be much greater than they should be.

I will highlight the disparity in the different situations by comparing the fisheries of the North Pacific, West Africa and the Indian Ocean.

### The North Pacific

This is the area north of Japan and Mexico. The most distinguishing characteristic of the North Pacific is the small number of states that have an interest in the fisheries - basically US, USSR, Japan and Canada.

Second, like all other areas of high latitude, there are relatively few species of fish but large populations of each species. This has led to the development of specialized fleets concentrating on individual species. Furthermore, there are extensive areas of the ocean with high productivity.

Third, most of the fish in this area have been fished to or beyond the point of maximum sustainable yield.

There are more international agreements explicitly dividing up the resources in this region than in any other area of the world - and these agreements have been in effect for many years. These agreements are threatened by increased fishing pressures and by the entry of new fishing states like East Germany, North Korea, South Korea, and Poland. Another problem is that the fifteen or so odd agreements that exist in the region are highly specific and do not provide comprehensive coverage for the needs of the region. Newer fisheries like Pollack and Squid remain unregulated. There is no single forum that can facilitate coordination among the separate ad hoc agreements.

Thus the North Pacific fisheries require the establishment of effective and comprehensive regional institutions. The two hundred mile economic zone will not go very far in solving any of these problems.

West Africa

In the West African region there are fishing vessels from about forty nations. Half of these are coastal states all low income developing nations. The other half are distant water states which are almost all developed. There are large numbers of different species of fish. Furthermore, there are wide differences in fertility along the coast with rich fishing grounds off sparsely populated states like Mauritania and Namibia and relatively unproductive waters near Ghana, Nigeria and the Ivory Coast.

There has been a tremendous increase in fishing in this region in the last decade mostly by large mechanized fishing trawlers so that many stocks are threatened with depletion. Thus there is an urgent need for fisheries management and for the adoption of strict controls, but the critical knowledge about the stocks is missing.

A two hundred mile zone will enable coastal state to control distant water fleets and management of some stocks which fall within the authority of a single coastal state would be facilitated. But for most stocks the two hundred mile zone would not resolve anything.

An important problem will be obtaining and collecting the information about the maximum sustainable yields of different species which would be necessary to undertake management of fisheries.

Another problem will be one of enforcement. But even more difficult will be the problem of allocation. Short national coastlines together with the migratory patterns of many species, mean that many stocks would be found in two or more states. This presents obvious difficulties for determining which state gets what share of the stocks, or of the revenues collected from distant water fishermen. Certain African coastal states may wish to fish in the waters of others but the others may find that the fishermen of developed states are willing to pay higher fees. The presence of numerous landlocked states also complicates the problems.

Thus the two hundred mile will solve some but exacerbate other problems problems which will require growth in regional cooperation.

#### The Indian Ocean

The most distinguishing characteristic of the Indian ocean is that it has greater potential for increased catch than any other ocean. It has been estimated that the catch can be increased five and a half times over the 1970 level whereas for the world as a whole the potential increase may be only two and a half times.

Unlike West Africa, Indian ocean has not attracted significant amounts of foreign fishing. Only five per cent of Indian ocean catch is taken by non-local vessels.

Another significant characteristic is that most fish species are found close to land and that waters beyond the two hundred meter depth are relatively sterile.



However there are a few species such as the widely migrating tuna fish and some other species such as mackerel and sardines that are found far from shore. These may create problems because they migrate between waters and because they may attract large fish meal factory ships from outside species as other oceans become closed.

The most pressing problem of Indian Ocean is that of improving the data base about the quantities and location of the stocks. There are many underutilized and unutilized fish stocks.

Intra regional conflicts particularly bilateral conflicts may become more severe because of the growing development by middle distant water fisheries by a few states. But with the major exception of tuna fisheries which will require some form of regional or international agency, management in Indian ocean can be exercised by individual coastal states.

#### Management of Fisheries in the Indian Ocean

Let us now turn to some of the economic aspects of managing fisheries in the Indian Ocean.

The Indian Ocean countries can be divided into three categories.

High income developed countries with high GNP, having a modern infrastructure, where the bulk of the labour is employed in modern economic organizations. Israel, Kuwait, Australia and perhaps South Africa fall in this category.

Low income developed countries have a modern infrastructure but a large part of the labor force is outside the modern economy in low productivity occupations. They have a reservoir of low wage labour available. Countries like India, Iran, Pakistan, Thailand, Malaysia and Sri Lanka fall in this

category.

Undeveloped countries have a fragmentary infrastructure and lack integrated national economies. Economic trade is directed at subsistence or ~~best~~ within a circumscribed locality. Countries like Burma, Bangladesh, Indonesia and all the African States fall in this category.

The development strategies for the undeveloped will be different from the low income developed countries.

There can be two strategies for the undeveloped country:

(1) Enhancement of productivity in subsistence or small scale commercial fisheries by motorization of canoes, new net materials etc. These will increase the welfare of the fishermen but will not stimulate sustained economic development unless they are tied to a larger regional economy.

(2) Development of enclaves of modern commercial fishing using foreign capital, technology and markets through joint ventures. But the undeveloped country may have little to contribute to the enterprise other than land for a base and its waters. Its benefits will take the form of rents, employment of some local people but its contribution to sustained development will depend upon linkages.

Let us now look at the Low income developed countries.

When we focus upon fishing we also have to include the system of processing and distribution, the production of boats, gear, fuel, repair, port and business services.

Fishing, boat building and fish processing are all labour intensive.. The utilization of low cost labor presupposes a minimum number of technicians and entrepreneurs who are aware what capital goods, supplies, technology are available elsewhere and are capable of adapting them to local circumstances. If low cost labour can be utilized then low income developed countries will have a significant advantage in fisheries development.

The principal handicaps of these countries are:

1. Planning and general business management
2. Repair and maintenance
3. Spoilage and quality control
4. Export marketing and building of internal transport networks.

These shortcomings cannot be overcome with services imported for a limited term and then dispensed with. They are matters of day-to-day management. The lack of these personnel qualities cannot be compensated for simply by taking on more cheap, unskilled labour. In spite of the availability of cheap labour and a developed infrastructure, the low income developed countries still require critical inputs from outside, especially in the export oriented fisheries.

#### Directions for Future Research

The foregoing suggests some avenues for future research in fisheries managements.

The available options for institutional arrangements and development strategies, and their costs and benefits need to be studied. These would range all the way from direct foreign investment, to international joint ventures, to establishing fishing and processing facilities on a wholly domestically owned basis by either local private enterprise, by cooperatives or by government. It could be a combination of these variations for different species of fish. For instance, it is possible that new and export oriented fisheries may be more suitable for international joint ventures than fisheries oriented to local markets.

Another area may be to examine what are the operating basis and what if any the standards of performance that have been laid down for the managers of government fisheries corporations. To what extent do the responsible officials have an understanding of the notions of productivity, cost effectiveness or opportunity cost, particularly with respect to capital?

Next, to what extent does development planning take into account the mutual impact of investment in fisheries and economic processes in the rest of the country. The expansion of Sassoon dock in Bombay could be contemplated only by ignoring the value of the surrounding land, the costs of congestion to the community as a whole and the additional loads imposed upon the utility systems. Similarly planners should have anticipated the positive development spillovers from the growth of fishery activity in Cochin harbour thereby alleviating congestion before it occurred.

Similarly the strategies towards marketing and credit for the small scale, commercial fisheries; especially the roles of cooperatives and state marketing organizations need to be researched. It would be useful to look at the successful instances and to learn what distinguishes them from the unsuccessful ones.

Another direction of future research is determining the costs of establishing estimates of potential productivity of different fish stocks.

We have mentioned earlier how the critical information about the maximum sustainable yield of different stocks in different areas, is missing. How do we make these estimates in order to avoid overfishing? Because there are great fluctuations in catches due to natural factors, it takes five to ten years to establish with statistical confidence the existence of a trend.

It is quite possible that economically the optimum level of investment will be ascertained only after having been exceeded for several years. This has been true of fisheries in Japan and the Soviet Union. But in countries such as India there may be problems in pushing out the excess capacity into new fields after the data has demonstrated overfishing. The persistence of labour surplus conditions will make the exit of labour sticky. So how does one prevent the likelihood of overinvestment?

One possible response would be to proceed slowly by allowing the capital committed to any particular fishery to increase at no more than a given rate say five percent every year after a base limit has been crossed. This way even if it takes ten years to establish definitively that the optimum capacity has been exceeded, it would have been exceeded only to a manageable extent. This then is another very important area of research — the strategy for determining when fishing effort has exceeded the optimum.