

A Second Look At United States Fisheries Management

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Once again commercial fishing is the object of intensive study in certain quarters. Now, as in the past, this study is receiving nurture from the on-going negotiations regarding the broader issues of international law of the sea. Necessary to these discussions is the need to consider the issues important to the fishing nations. Further, it is more than likely that fishing rights are so intertwined with other problems, such as the breadth of the territorial sea, the limits of national jurisdiction on the continental shelf, or the appropriate regime for the governance of the seabeds beyond national jurisdiction, that separate consideration will not be feasible. Additional impetus to fisheries studies is derived from the fact that, unlike many other nations, the U.S. is the parent of a fractionated and diverse domestic industry. An overview of fishery policy problems, therefore, should contain the elements of the most severe problems on both of these levels. Before considering the options, we should pause for a brief report on the status of fisheries.

THE STATUS OF FISHING

Clearly, one cannot be precise about fishing levels. There is sim-

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ply not enough scientific evidence at this juncture. However, certain facts and trends can be discerned, and these will serve to provide an adequate perspective for the consideration of issues and goals.¹

There are more than 20,000 species of marine fish in the oceans. Yet only about a dozen of these are substantially exploited. This concentration of fishing effort is one of the keys to understanding the fishing dilemma. Some of the more popular fish (about 40% of the total world catch) are the herrings, anchovies, and sardines, followed by the cod, haddock, hake, and, in lesser proportions, horse mackerel, tuna, flatfish, salmon and shark. Concentration of effort on the popular stocks leads to local intensification of fishing effort with attendant risk for conflict of interests. Recent improvements in fishing techniques, including the use of long-range processing vessels, have had consequent heavy impacts on the operations of local fishing activities in limited areas.

To compound this situation, fishing in general has been on the increase. World production has climbed from about 20 million metric tons in 1950 to about 63 million metric tons in 1969. However, during that same period of time, the U.S. share of the total catch has remained about level, between 4 and 5 million pounds. This ranks the United States sixth among fishing nations behind Peru, Japan, the USSR, Mainland China, and Norway.

Of all the commercially valuable stocks exploited the demersal fishes (e.g., the flounders, soles, cods, and Atlantic Redfish) are probably exploited close to the limits of their potential yield, particularly in the northern hemisphere where many U.S. fishermen operate. At the same time, the pelagic species (such as some stocks of tuna, sardines, jacks, anchovies and hakes) seem to have potential for an increase in exploitation. Again, the potential is greater in the southern than in the northern hemisphere.

It is difficult to predict exactly what the full potential for fishing is, because experts disagree on the best method for making the

1. For a more complete description of the world fisheries, see IDYLL, *THE SEA AGAINST HUNGER*; 3 PANEL REPORT OF THE COMMISSION ON MARINE SCIENCE, ENGINEERING AND RESOURCES, *MARINE RESOURCES AND LEGAL-POLITICAL ARRANGEMENTS FOR THEIR DEVELOPMENT* sec. 1 (hereinafter referred to as PANEL REPORT); D. JOHNSTON, *THE INTERNATIONAL LAW OF FISHERIES* (1965); F. CHRISTY & A. SCOTT, *THE COMMON WEALTH IN OCEAN FISHERIES* (1965) (hereinafter referred to as CHRISTY & SCOTT).

estimation. Current estimates, therefore, range from an annual production of 80 million metric tons to a high of 2,000 million metric tons.² The figures that are obtained from extrapolating from existing fish landings are on the lower end of that scale, while those on the high end were computed by measuring the energy flow through the food chain. Thus, the low end represents potential fish *production* while the high end approximates potential *yield*. Considering the expansion of technology, the range of 55 to 200 million metric tons annually is considered likely by most experts, with many estimating less than 100 million.

While the upper end of that scale provides hope for increased landings, several natural factors mitigate against those nations in a weaker competitive position. The major fisheries, for example, are concentrated in areas rich in nutrients. This can be caused by natural convection, upwelling of deep water in areas where surface water is driven from the land, or by the mixing of major ocean currents.³ Such localizations mean concentrations of fishing fleets and increases in fishing stress. Only the best equipped can compete. The U.S. fleet has not been singularly successful in most such areas.

While the position of the U.S. industry is relatively weak in terms of amount of catch, there are signs that there are still areas in which the U.S. fleet can be successful. There have been significant changes *within* the U.S. catch over the past few years. While the per capita consumption of fish in the U.S. has remained fairly constant, the demand for certain types has strengthened. Demand for products having good flavor and texture, such as salmon, shellfish, lake trout, and red snapper, is growing. This partly accounts for the fact that shrimp, salmon, and tuna constitute nearly 50% of the landed value of U.S. fish caught and for the popularity of certain ground fish and shellfish for the fresh and frozen trade in New England. It also accounts for the success of the salmon, tuna, crab, and oyster trade in the Pacific, and the shrimp, oyster and crab trade in the mid and South Atlantic and in the Gulf of Mexico. In addition, there has been a marked increase in the volume of industrial fish taken for the fish and oil meal industry, particularly in the Gulf. Convenient fish products such as frozen sticks and canned tuna remain popular. But as the lower income groups improve their financial posture, purchasing may be expected to trend

2. PANEL REPORT, at VII-10, VII-11.

3. Examples of nutrition through natural convection are found in the North Sea or on the Grand Banks. Upwellings occur on the West coasts of Africa and South America. A good example of the mixing of ocean currents occurs where the Gulf Stream meets the Labrador Current.

away from the cheaper grades of fish toward other sources of animal protein such as meat and poultry.

It can be concluded that U.S. fisheries, in terms of total catch, will probably not expand dramatically in the foreseeable future. However, the demand for high quality, high priced stocks, stocks conveniently stored and shipped, and industrial fish for protein feed for the meat and poultry market will likely remain high.

The U.S. can be expected, therefore, to have the opportunity to maintain a fairly substantial fishing industry vis-a-vis other nations, but the competition will grow more intense for the popular fishes upon which this industry so heavily depends.

International Management Programs and Problems

Two basic principles historically have been applied to fishing on the high seas. The first is the freedom to fish guaranteed under Article 2 of the 1958 Geneva Convention on the High Seas.⁴ The second is the common property principle⁵ on which that freedom rests, whereby fish are free for the taking by whoever might capture them. This freedom has been somewhat ineffectively limited by the general concept of conservation as stated in Articles 1 and 2 of the 1958 Geneva Convention on Fishing and Conservation of the Living Resources of the High Seas,⁶ which sets a theoretical limit on the extraction of fish from the high seas.

4. Article 2 states:

The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty. Freedom of the high seas is exercised under the conditions laid down by these articles and by the other rules of international law. It comprises, *inter alia*, both for coastal and non-coastal States:

- (1) Freedom of navigation;
- (2) Freedom of fishing;
- (3) Freedom to lay submarine cables and pipelines;
- (4) Freedom to fly over the high seas.

These freedoms, and others which are recognized by the general principles of international law, shall be exercised by all States with reasonable regard to the interests of other States in their exercise of the freedom of the high seas. U.N. Doc. A/CONF. 13/L.53 (1958).

5. See generally, CHRISTY & SCOTT, *supra* note 1, Ch. 2.

6. Article 1:

1. All States have the right for their nationals to engage in fishing on the high seas, subject (a) to their treaty obligations, (b) to the interests and rights of coastal States as provided for in this Convention, (c) to the provisions contained in the following articles concerning conservation of the living resources of the high

If the fisheries were uniform in size, distribution, and quality, the creation of a uniform system of management might be simplified. However, the different problems created by variations in these parameters makes such uniformity unlikely and impractical. In actuality, there are several basic patterns taken by fisheries, as identified by Larkin in 1969.⁷ First, there are those fishes which spend part of their life cycle in lakes and streams within a single coastal State, and part in waters beyond that State's territorial sea. Next, there are those species which spend part of their life cycle on the high seas, and part within the territorial sea of a particular coastal State or group of coastal States. Third, there are those fishes that spend their entire lives on the high seas, and, finally, there are those species that do not spend any of their life cycle outside the territorial sea of a coastal state or groups of coastal States. Each of these patterns is unique, and, therefore, only the broadest of umbrellas can cover them all. That umbrella, as reflected in the 1958 convention, is conservation; that is, the protection of the biological yield of the oceans. Obviously, the maximization of the total biological yield of the oceans bears no relationship to the maximization of the individual stocks presently fished.

As Larkin explained, the first fishery, usually referred to as the anadromous fishing problem, poses one set of competing claims—the freedom of the seas versus the special privilege of a single State by reason of its investment in the nursery or spawning area (sometimes referred to as the principle of abstention). The second poses a conflict between the freedom of the seas principle and claims of special privilege for the coastal State. The third represents a conflict between freedom of the seas and certain historic claims to guaranteed quotas. The last poses no conflict at all on the international level. Since the interests involved are somewhat different in each case, different approaches may be called for

seas.

2. All States have the duty to adopt, or to cooperate with other States in adopting, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas.

Article 2:

As employed in this Convention, the expression 'conservation of the living resources of the high seas' means the aggregate of the measures rendering possible the optimum sustainable yield from these resources so as to secure a maximum supply of food and other marine products. Conservation programmes should be formulated with a view to securing in the first place a supply of food for human consumption. U.N. Doc. A/CONF. 13/L.54 (1958).

7. Larkin, *Critique: Fisheries Management Provisions in the Commission Report*, THE LAW OF THE SEA: NATIONAL POLICY RECOMMENDATIONS 297 (Proceedings of the Fourth Annual Conference of the Law of the Sea Institute, 1969).

in handling each problem. If one were to attempt a uniform system, it would probably have to be based either upon an international agency that would operate the fishery or auction off the rights to fish, or it would have to be done by dividing the sea into assigned fishing areas depending upon some formula based upon population, length of coastline, need, or some other such system. Neither of these is practical, nor is either of them politically acceptable to the fishing nations. Recognizing this, one is forced to the conclusion that a system for international fisheries management must be one of several parts, having a single overall conservation goal, although it has been argued that conservation ought not be pressed, because the best utilization of the resources of the oceans may not necessarily be the increased and guaranteed utilization of high-priced and high-quality stocks, and if they were fished out, the oceans and the fisheries may be the better for it.⁸ Putting this aside for now, we come to the conclusion that if conservation is the goal, then the proper proposal ought to contain the elements of a formula that will assist in solving each of the problems posed. Larkin's proposal for anadromous fish was that they be opened for fishing to all nations, each fishing nation paying a tax to the coastal State as compensation for their costs in protecting the spawning grounds. He would then grant the coastal State a special privilege in the areas of the high seas adjacent to the territorial seas for those fish that spend part of the time in the latter belt. Finally, he would divide the purely high seas fisheries by allocation through an auction mechanism.

The U.S. proposal tabled in Geneva before the Seabeds Committee on August 3, 1971,⁹ suggested a somewhat different approach but with the same goals in mind. Article III of the U.S. draft would establish appropriate international (including regional) organizations to regulate stocks to assure the conservation and equitable allocation of the fisheries and other living resources of the high seas. These could be new organizations, or existing mechanisms. However, to solve the special management problems previously referred to, certain exceptions are made to the basic scheme. Under the proposal, the percentage of the allowable catch of a stock of fish in an area adjacent to a coastal State shall be that amount

8. PANEL REPORT, *supra* note 1, at VIII-47.

9. Draft Articles on the Breadth of the Territorial Sea, Straits, and Fisheries, Submitted by the United States, Dated July 30, 1971.

that the coastal State can harvest. Furthermore, the percentage of an anadromous stock that can be taken by fishermen of States other than the spawning State is only that percentage the coastal State cannot itself take. Finally, highly migratory high seas species (as identified in a yet to be prepared appendix to the draft) are exempted from the operation of the proposal. But both the U.S. approach and the Larkin proposal are different ways of treating the same problem. Unfortunately, the U.S. draft exempts all existing fisheries arrangements from the operation of Article III, thereby severely interfering with its desired goal of uniformity of treatment.

The major positive step in the U.S. proposal is the rejection of traditional boundaries based upon the limits of territorial seas, or adjacency thereto.¹⁰ The working draft would adopt, instead, biological limits; that is, limits of range of a particular stock sought to be regulated, in lieu of an arbitrary 12 miles or more. While the lack of line-drawing makes enforcement problems more difficult, it is not likely that enforcement in the traditional sense will be a key to the effectiveness of a successful system at all, and hence this problem should not be allowed to control the final selection. It is clear that any limits set should be by stock, and subject to negotiation among the nations involved. It is also clear that the relatively immobile species should be governed by the conservation regulations of the coastal State in whose waters they primarily or entirely are found, subject to the right of other States to fish the stock if the coastal State cannot do so, or chooses not to do so. The exact formula can be worked out, once the parameters are known, if fisheries issues can be resolved absent trade-offs involving other desired ocean goals.

DOMESTIC GOALS FOR FISHERIES MANAGEMENT

Assuming that the mechanism described above is adequate to resolve at least some of the problems of allocation of fish among nations, each coastal State must then be free to establish whatever criteria it deems appropriate for its own industry within its waters, or with relation to such catches as it controls. What, then, should be the objective of the United States with regard to its own share of

10. Previous attempts to accommodate fisheries conflicts included proposals in 1958 and again in 1960 to establish a six mile territorial sea, plus an additional six mile zone in which the coastal State would have the same rights for fishing as it would have in the territorial sea. These fixed limits proved too inflexible. For a historical account of these proposals, and their fates, see VOL. 4, WHITEMAN, DIGEST OF INTERNATIONAL LAW, CH. IX, SEC. 2 (1965).

the overall catch? One choice, of course, is free fishing within the tolerance of biological conservation. In essence, this is the practice in the U.S. today. It follows the theory that it is best for U.S. fishing to maximize the catch to the point where further fishing will decrease the biological yield of the stock. Article 1(2) of the 1958 Convention on Fishing and Conservation of the Living Resources of the High Seas calls upon the States to adopt such measures for their nationals as may be necessary for the "conservation of the living resources of the high seas" and defines the term as meaning the "aggregate of the measures rendering possible the optimum yield from those resources so as to secure a maximum supply of food and other marine products." The proposed Article III of the recent U.S. draft proposal also speaks of establishing the allowable catch at a level designed to maintain the maximum sustainable yield, taking into account relevant environmental and economic factors.¹¹

The adoption of maximum sustainable yield (MSY) within a totally controlled fishery leaves open to the market the manner in which the fish may be taken, or calls for some sort of allocation procedure within the industry. Common forms of reduction of fishing effort call for the regulation of seasons, the control of gear, the closing of nurseries, or the number of trips allowed. These restrictions, however, invite inefficient practices.

Other experts have advocated the institution of a system based upon the maximization of economic rent.¹² If maximum economic yield (MEY) is the selected goal, the result is that fish will be taken to the point where a further increase in fishing effort results in a lowering of the overall economic rent derived from the fishery. While this is appealing from a theoretical point of view, instantaneous adoption of such a policy would result in rapid depletion of the size of the existing fishing fleet in most areas, with the attendant social consequences.

11. Article 3(2)(A) provides that "conservation measures shall be adopted that do not discriminate in form or in fact against any fisherman. For this purpose, the allowable catch shall be determined on the basis of the best evidence available, at a level which is designed to maintain the maximum sustainable yield or restore it as soon as practicable, taking into account relevant environmental and economic factors."

12. CHRISTY & SCOTT, *supra* note 1; Crutchfield, *Management of the North Pacific Fisheries: Economic Objectives and Issues*, 43 WASH. L. REV. 283 (1967); Gordon, *The Economic Theory of a Common Property Resource: LXII The Fishery*, J. POLITICAL ECONOMY, 124-42 (1954).

The MEY theory is based upon the belief that the mass of fish that can be taken without reducing the total level of the biomass is not relevant if it costs more to take the fish than they will produce by way of revenues. As expressed by the Stratton Commission, "unless the end products of the fishery are worth more in money than the cost of producing them, why have a fishery at all?"¹³ Both MEY and MSY rely on a standard curve that tells us that as fishing effort increases from zero, the yield will climb. However, a point is reached where the fish taken will exceed the addition to the biomass by stock recruitment or growth, and thereafter the mass will be depleted at an increasing rate by increased effort. In addition, the economists hold that there is another point along the curve where the increase in fishing cost per unit of catch precisely matches the increase in revenues, and to press beyond this point (MEY), revenues will fall at such an increasing rate that the loss of revenues constitutes economic waste. Economists are critical of maximization of the biological yield because it may be economic to fish certain stocks beyond their biological limit.

The more the theoretical disputes rage, the more it seems that the issues are irrelevant to national needs. Clearly, in some instances, the conservation of a particular stock may be very much in the national interest. Just as clearly, no one desires to create economic waste if there is no other benefit to be derived from such a choice. Conversely, one might make a conscious choice for waste if some more valuable goal, from a social point of view, is to be thereby attained.

The only conclusion that can be drawn with any degree of assurance is that there is no national goal for all fisheries inclusive enough and comprehensive enough to constitute a formula for universal application. The best that can be said is that the elements of an acceptable basic formula are conservation, the prevention of economic waste, and the enhancement of desirable social goals. Some have referred to this as the maximization of social yield, although the term lacks necessary precision. In much of the literature of the past, too much emphasis has been placed on the dispute between the MSY enthusiasts and the MEY defenders, and too little upon the necessity to recognize the realities of the U.S. fishing industry as compared with some theoretical norm. The shift in emphasis here to social factors leads one to the conclusion that there is more than physical and economic yield to be considered. For example, it may not be of benefit to a particular industry to maximize the physical yield, when the result is to entice even more

13. PANEL REPORT, *supra*, at VIII-46.

fishing effort, and place more stress on the individual returns. Likewise, the maximization of economic rent could well lead, in a specific instance, to a highly localized reduction in fishing effort (even though those forced from the business may be compensated) resulting in a severe and undesirable dislocation of the labor market, or perhaps the collapse of an entire coastal community. In like manner, the correct blend of biological, economic, and social factors must take into consideration the need for consumer protection, the prevention or control of pollution, the posture of locally competitive industries, the nature of local politics, and a host of other social factors before one can be assured that the best decision is being made for the specific industry in question. The point is that it is not necessary, nor desirable, that a unified goal be adopted for the entire nation, or, indeed, an entire industry. On the contrary, the national guidelines should include only the three basic elements, with the precise balance being worked out on a level as close to the working level as possible, with participation by decision makers having strong industry representation. The latter point is important, and will be stressed again later.

MECHANISMS FOR FISHERIES MANAGEMENT

Once allocations of various stocks have been assigned to nations, either by formula, preferences, historical rights, or by the political process of negotiation, those nations are free to select whatever goal they prefer in exploiting stocks under their control, so long as the quota is not exceeded nor the agreed-upon rights of other nations impinged upon. Assuming the United States has received an allocation of stock X, it may decide to exploit *all* of that allocation, or only part of it. If, for example, the quota exceeds the maximum biological yield, it may be decided not to utilize the full quota. Whatever the decision, perhaps reached through the process outlined in the previous section, decisions must still be made concerning the best way to take the allowable number of fishes. There are a number of traditional mechanisms that have been used in the past. Among the questions relevant to the problem of regulation are the questions of who has access to the stocks and to what extent. These questions lead to the consideration of such subtopics as the gear to be used, the length of the season, the creation of industry or individual fishing quotas, limitation of entry, and the like; all having as their purpose the control of excessive fishing

capacity to keep fishing effort at the desired point. "Fishing effort" depends upon several variables: the size, type and efficiency of the boat, the type of gear used, the number of trips, and the skill of the fishing crew. Unless all of these factors are taken into account in selecting the type of regulation to do the job, a profit-maximizing fisherman can adjust the remaining factors so that his actual fishing effort is not substantially affected.

There are two traditional ways to limit catches. First, they can be limited through regulations that affect mortality through fishing effort. These regulations would control the number of operating units in the business, the sweep efficiency of those units by controlling the areas fished, the time fishing could take place, or the catching power of the gear. Secondly, regulations could be designed to affect the age and size at which the fish can be taken by control of nursery areas, seasonal closure of fishing grounds, or selectivity of gear. None of these systems is perfect, although any one of them may be adequate to a particular need. For example, the closing of nursery areas is designed to protect the young of a species for exploitation at a later stage of the life cycle. But before this method can be successful, the stock to be controlled must exhibit two essential characteristics. The animals must grow and migrate to the area where exploitation is later to occur, and the species must grow faster than they disappear. In other words, the growth rate must exceed the mortality rate so that the harvest realized by waiting will exceed the harvest that would have been attained by exploiting the juveniles. Clearly, then, this method is not universally applicable.

The closing of fishing seasons, or establishment of limited fishing periods is also a device of limited feasibility. This method is sometimes adopted when a stock is vulnerable during certain specific periods. While closed seasons provide a period for repair and maintenance of gear, rehabilitation of vessels, and rest for crews, the net effect is to create highly intensified effort during the open season. The total level of fishing may not change proportionately, and higher costs for more efficient gear and larger vessels are encouraged which must be passed on to the consumer. In addition, shorter seasons result in the need for high capacity processing plants which then remain idle for long periods of time, and the consumer loses the enjoyment of longer periods of availability of fresh fish and pays the cost of increased amounts of processing and longer periods of storage.

Regulations restricting vessels to the use of ineffective gear are common,¹⁴ but such regulations are in most cases ill-advised. Fish-

14. Gear restrictions tend to penalize the more efficient producer. *Read*

ery regulation based upon the deliberate choice for inefficiency seems irrational. Regulation by gear selectivity is utilized in a number of U.S. fisheries, but the enforcement of rules is difficult, and if the aim is to increase efficiency, perpetuation of inefficient practices or equipment is not defensible. Perpetuation of inefficiency, however, may be the preferred choice, as previously discussed, if the goal is to maximize some social value, such as the protection of a local fishery.

The case for gear efficiency, when that factor is used alone, can, of course, be carried to extremes. Where maximum sustainable yield is maintained, an increase in gear efficiency may only result in an increased cost to the individual whose increased efficiency will then be matched by others, until the advantage gained by the first to act is nullified. Thus improved efficiency should be sought only in a limited-capital market where marginal operators will be forced out, or where the total sustainable yield can be increased enabling the lowering of costs and expansion of markets, or where other unutilized and marketable stocks of fish may be exploited to absorb surplus fishing capacity.

Quotas are a more precise way of controlling fishing effort, but they can create the same overall effect as the limitation of the fishing season. Each fishing unit will try to expand its effort to increase its own share of the catch.

All things considered, it seems more and more clear that the most generally effective method of regulation would include some form of limited entry, although this method by itself emphasizes efficiency at the expense of social considerations. Reduction of the number of fishing units allows the remaining units to operate for a longer period, and increases efficiency of production. Restricting the number of units does, however, create two significant problems. First, what is to be done with the individuals who are forced from (or unable to enter) the industry? And, second, what should be done with the economic rent derived from more efficient fishing?

The first problem is difficult, because the concept of limited entry is a contradiction of the traditional common property—open

J. CRUTCHFIELD & G. PONTECORVO, *THE PACIFIC SALMON FISHERIES* Ch. 3 (1969).

entry philosophy that American fishermen assumed to be basic when they entered the fisheries and selected their gear. Because we would be changing rules in the middle of the game, those who would lose because of the change must be compensated in some form by the economic rent derived.

One method of restricting entry is through the auction mechanism. Should this method be adopted, the most efficient units would be in the best position to bid the highest amount for the right to fish, and the money received from the auction could be utilized to assist in the economic and social adjustments stemming from reduced employment in the restricted fishery, either through retraining or recapitalization in another enterprise. A second method would gradually reduce the number of fishing units through retirement or voluntary sales. Under this program, the government might buy out fishermen prepared to leave the fishery for a reasonable consideration, and retire the purchased license. This would have the advantage of providing a reasonable phase-out period, reducing individual hardship. It might be possible to combine the two methods by decreasing the number of licenses auctioned each year by the retirement method until the desired level is reached.

A limited entry program has been adopted and seems to be making progress in the British Columbia salmon fishery.¹⁵ This program was initiated by freezing the number of licenses as of a given point in time, and then proceeding with further moves involving the buying up of licenses on a voluntary sale basis.

It would seem that such a system, or a similar one incorporating some form of limited entry, should be the basis for fishery regulation in U.S. fisheries. Whether entry should be limited to the point of MEY, or some lesser efficient point, would be a question to be decided by the government/industry group having primary authority over the industry in question, as previously suggested.

PROPOSED STRUCTURE FOR A U.S. MANAGEMENT/REGULATION SYSTEM

First, and perhaps foremost, it must be recognized that for a fisheries management program to be effective, it must serve the natural system being regulated. Artificial divisions such as those presently found between the sport and commercial fishing segments in the U.S., while they may serve valid political aims, create conflict and diseconomies and should be avoided. A management scheme must be of sufficient breadth to deal with a wide range of fisheries prob-

15. See HERRINGTON, CANADIAN LICENSE CONTROL FOR SALMON, MASTER OF MARINE AFFAIRS DISCUSSION PAPER No. 2, UNIVERSITY OF RHODE ISLAND, MARCH, 1971, for an exposition of this system.

lems. The management program should promote a unified approach to supplant the conflicting sets of laws and restrictive regulations now causing confusion and inequity within a given fishery.

There is a clear lack of unifying authority for fisheries both within and without the limits of the territorial sea. Congress has not elected to exercise its commerce-clause powers that would enable it to regulate fish which are within the three mile limit, but nonetheless are solely in interstate commerce and migrate across state lines during their life cycle. Nor has there been federal regulation of fisheries outside the territorial seas and contiguous zones except in response to specific treaty obligations.¹⁶ The absence of federal presence is complicated by the lack of uniformity among state and county laws and regulations which by and large seem to reflect the political influences protective of local industry. Even in those instances where state and county regulations are effectively structured, the goals are often frustrated by uneven enforcement practices and policies. In addition, individual states often do not have sufficient resources to support the research effort upon which much of effective management depends. These problems are universally recognized, and just as uniformly swept under the rug. The Stratton Commission gave voice to this concern in 1969,¹⁷ yet not one of the Commission's recommendations has been adopted or put into law. The reason is simple. Neither the states nor the industry will support them even though the result might well be a healthier industry. Part of this is due to a lack of trust and communication between the industry and the federal government in some instances.

Several mechanisms have been suggested in the past to accommodate federal and state interests in coastal waters. The National Fisheries Policy Conference held in Washington on June 8-10, 1970, made the following recommendation:

The National Fisheries Policy Conference urges that a high priority be placed upon developing a clear delineation between the Federal Government, the States, the domestic commissions and the international commissions on management of all fisheries and shell fisheries of present and potential interest to the United States.

16. For a discussion of federal powers under the commerce clause regarding fisheries, see Appendix A, PANEL REPORT. Examples of laws enacted pursuant to treaty authorization include, e.g., legislation on fur seals (16 U.S.C. § 722).

17. PANEL REPORT, *supra* note 1, Sec. 1, Pt. VIII.

To implement this, the Conference called for consideration of the following alternatives:

- (a) Where a fishery is located wholly within a state or where a fishery is harvested by citizens of a single state, jurisdiction should reside with that state.
- (b) Where a fishery is located wholly within two or more states or where a fishery is harvested by citizens of two or more states, jurisdiction should rest with a commission composed of members from the state whose citizens are engaged in utilizing the fishery.
- (c) Where a fishery is harvested by both domestic and foreign fishermen, jurisdiction should rest with an international commission composed of members from all countries engaged in the fishery.
- (d) Where a fishery is now under the jurisdiction of two or more states or countries, the existing arrangements should not be disturbed.¹⁸

Of particular note is the absence of any mention of federal powers in the list of recommendations. The Stratton Commission, previously referred to, recommended, *inter alia*:

That the National Oceanographic and Atmospheric Agency be given statutory authority to assume regulatory jurisdiction of endangered fisheries when it can be demonstrated that;
A particular stock of marine and anadromous fish migrates between the waters of one state and those of another or between the territorial waters and the contiguous zone or high seas and
The catch enters into interstate or international commerce, and
Sound biological evidence demonstrates that the stock has been significantly reduced or endangered by acts of man, and
The state or states within whose waters these conditions exist have not taken effective remedial action.¹⁹

Finally, the following was produced by the New England Fisheries Conference:

In view of the increasing jurisdiction over stocks of fish in the U.S. coastal waters as a result of current national and international developments (1973 Law of the Sea Conference) and the responsibility that this places on the U.S. to assume the conservation and wise utilization of these stocks, it is imperative that the U.S. Government have adequate legislative authority to properly discharge this responsibility. Such legislation should direct the appropriate agency of the U.S. Government to study and regulate the stocks of fish in our coastal waters to achieve optimum returns from these resources; and provide the authority necessary for such management. This should be given top priority by the concerned public and Congress and not wait the action of the 1973 Law of the Sea Conference.²⁰

While the three recommendations differ in the degree of inter-

18. Statements *adopted by* the National Fisheries Policy Conference, June 8-10, 1970, Washington, D.C.

19. OUR NATION AND THE SEA, REPORT OF THE COMMISSION ON MARINE SCIENCE, ENGINEERING, AND RESOURCES 97 (1969).

20. A Proposal for a New England Fisheries Position for the Law of the Sea Conference, Herrington Draft, April 19, 1971.

ference deemed desirable on the part of the federal government, and some degree differ in goals, all reflect a growing sensitivity to the problem, and most of the participants in the above statements would, I believe, now favor some stronger role by the executive branch operating under appropriate new legislation.

Assuming the desirability of a stronger federal role, there is still the problem of the best way to approach the accomplishment of that objective. It would seem clear that, since the Reorganization Plan #4 of 1970, that created the National Oceanic and Atmospheric Administration within the Department of Commerce,²¹ the appropriate federal "home" for fisheries management would be located there. At the time of reorganization, the Bureau of Commercial Fisheries, and the anadromous and marine fisheries functions of the Bureau of Sport Fisheries, were incorporated into the new Administration and renamed the National Marine Fisheries Service. Unfortunately, the fresh water functions of Sport Fisheries was left in the Department of the Interior, as the Stratton Commission had recommended,²² for reasons that to this day are not quite clear. The split function was strongly opposed by several members of Congress, particularly the Honorable John Dingell, of the House Merchant Marine and Fisheries Committee, during the period that the Stratton Commission report was being scrutinized.²³ This oversight should now be corrected.

21. Reorganization Plan No. 4 of 1970, *effective* Oct. 3, 1970, 5 U.S.C. App. (1970 ed.).

22. OUR NATION AND THE SEA, *supra* note 19, ch. 7, "Organizing a National Effort."

23. Some of the practical difficulties raised by the split are evidenced by the following exchange between Representative Dingell and witnesses from the Commerce Department:

Mr. Dingell. Which agency, NOAA, or the Bureau of Sports Fishery and Wildlife in the Interior Department is going to be responsible for the Fish and Wildlife Coordination Act? Certainly you must have given thought to that matter?

Dr. Tribus. Certainly we have given some thought to it. . . . You are referring to the Fish and Wildlife Act of 1956?

Mr. Dingell. No, I am referring to the Fish and Wildlife Coordination Act of 1958. Who is going to be responsible for administration of that? Is it going to be split down the middle and administered partly by the new agency, NOAA, or is it going to be administered by the Interior Department Bureau of Sports Fisheries and Wildlife?

Dr. Tribus. We will have to decide between Interior and ourselves which is going to take responsibility.

Mr. Dingell. You mean you sent to Congress a plan and you don't

Finally, if a stronger federal role is to be achieved, the industry must first be persuaded that it is desirable. This brings us back to the gap in communications that apparently has existed for some time between the managers and the managed, at least if we are talking about the managers on the federal level. The observation is made simply as a statement of fact, and it is intended to cast no shadows upon any bureau management, past or present. It is perhaps a product of the system more than anything else. Therefore, if the feeling of trust and confidence that is essential within the industry, before there can be adequate support for legislative change (and this support is critical), then industry must be assured in advance that it will have a meaningful role in shaping and supervising the new powers. In the past, there seems to have been little hope that any fisheries group could be persuaded to abide an increase in federal powers, but with the decimation of coastal stocks as a result of increased foreign fishing pressure, there seems to be a mellowing among opponents of federal participation, and a realization that the state system alone is inadequate to afford the desired protection.

Legislation should be enacted, therefore, containing full authority for the National Marine Fisheries Service to formulate and implement management measures, including limitation on entry where that seems appropriate, but the legislation at the same time should contain provisions for a substantive role in the decision-making process for participants in the affected fisheries. This could be done by the establishment of a fisheries advisory group, selected from important fishing industries (including processors and marketers) to assist the agency in developing and promulgating policy. Such a mechanism could, and should, provide for consultation with other representatives of commercial and recreational fisheries on any measure which affects them, and the legislation should contain federal guidelines of a broad nature where the management of fishery resources impinges upon a broad segment of the public. Finally, the legislation should provide for an equitable method of determining the makeup of the participatory advisory group.

The goal of this system is to guarantee that those most affected would be actively involved in the decision and management process, increasing communications and assuring the industry that broader powers to the federal government would mean increased participation on their part. The members of the fishing industry

know who is going to have the conservation organization organ
in the Federal Government?

Hearings of the Subcommittee on Oceanography of the House Committee on Merchant Marine and Fisheries, July 20, 1970.

must believe that the legislative package is not severable, and that their support is needed for the package as a whole and not simply for the parts which they find personally appealing to them as individuals or as small industry groups. They must believe that the intent of the package is to assure full examination and approval by both government and industry of such controversial items as limited entry, with full and frank discussion of all benefits and drawbacks. If the legislation assures agreement on all the steps necessary to implement the agreed-upon programs, a higher degree of trust, cooperation and progress can be fostered.

ASSISTANCE PROGRAMS

One item not yet discussed is the need for assistance programs. To this point management and regulation have been the focus, but the industry as a whole is in such a dilapidated state (of course there are notable exceptions) that it would seem obvious that selected forms of federal and/or state assistance will be required for some time to come. The question is, what forms of assistance tend to be the most productive?

The present thinking of the legislative branch of government with regard to the support of fisheries is set forth in existing legislation. Under certain circumstances, however, these programs operate in contradiction to programs regulating fishing effort and if a new concept of management is adopted, there is no doubt but that there should be a thorough review and reevaluation of existing statutes.

Under 16 U.S.C. § 724(c),²⁴ the federal government may make loans to fishermen to finance or refinance operations, maintenance, replacement and repair of equipment, and for research. The Administrator may set reasonable rates of interest on these loans which can extend for periods of up to ten years. The U.S. Fishing Fleet Improvement Act, 46 U.S.C. § 1401,²⁵ provides for subsidies for

24. 16 U.S.C. § 742(c) (1956) *as amended*. These loans are subject to several requirements, including the furnishing of security, proof of the owner's qualifications to operate the vessel and gear, proof of nationality, and availability of loan funds.

25. 46 U.S.C. § 1401-13 (1960) *as amended*. The red tape here is sometimes too much for the fishermen to bear. The vessel must be constructed under the supervision of the Maritime Administrator. He, in turn, submits the plans and specifications to the Department of Defense which must assure itself that the plans are such that the vessel would be suitable for

fishing vessel construction, but this program has not been funded for a period of at least two years. In order to qualify for a subsidy when money is available, the applicant must show that he is qualified to operate the vessel he has requested, and that the vessel will aid in the development of U.S. fisheries. He must promise that he will deliver his catch only to U.S. ports and that he will employ only U.S. citizens or U.S. domiciled aliens. If he meets all requirements, he will be eligible for a construction subsidy on the lowest responsible U.S. bid. This subsidy interrelates with the Jones Act²⁶ which renders foreign built hulls ineligible for registration. Other laws also seek to protect the fisherman, and the boat builder, from foreign competition.

For instance, 16 U.S.C. 1081²⁷ makes it unlawful for any but a U.S. vessel (except as provided therein) to engage in fishing in the territorial waters and contiguous zone of the U.S. In addition, 46 U.S.C. § 251²⁸ provides that (except as provided for by treaty or convention to which the U.S. is a party) only vessels of the U.S. may land fish caught anywhere on the high seas in U.S. ports. Certain exceptions are made for landing fresh fish in the Virgin Islands for immediate consumption.

Finally, the government provides aid by way of certain kinds of risk protection. The Fishermen's Protective Act of 1967, 22 U.S.C. § 1971,²⁹ is an example. It provides that in any case where a United States vessel is seized by a foreign country on the basis of rights or claims not recognized by the United States, the Secretary of State will attempt to secure the release of that vessel and see that the owners are reimbursed for any fines that they might be forced to pay on account of such claim. Further, under Section 1977,³⁰ any fisherman may at his option enter into an agreement with the Secretary whereby he can be reimbursed for certain other losses incident to such confiscation.

Federal money is also channeled into research programs. The

conversion into a naval auxiliary in the event of a national emergency. All construction must be performed in a U.S. shipyard under a system of competitive bidding, and all materials used must, so far as practicable, be of U.S. origin, etc.

26. 46 U.S.C. § 11 provides that only vessels built within the U.S. and belonging to U.S. citizens may be registered and employed in the coastwise trade.

27. 16 U.S.C. § 1081 (1964) *as amended*. There is a provision here for an exception to be allowed if the vessel's nation of registry grants reciprocal rights to the U.S., and if the granting of a waiver is in the national interest.

28. 46 U.S.C. § 251 (1950).

29. 22 U.S.C. § 1971-77 (1954).

30. 22 U.S.C. § 1977 (1968).

National Marine Fisheries Service funds programs for research, exploration, and gear development. The Commercial Fisheries Research and Development Act³¹ directs funds to individual states for research and restoration, and the Anadromous and Great Lakes Fisheries Act of 1965³² provides funds for cooperative projects aimed at developing the anadromous fisheries.

This brief survey of some of the assistance programs indicates that the pattern has been to rely upon financial support, protective legislation, risk allocation measures, and research to foster fishing. Not all of these programs have been successful. The subsidy program for new vessels, for example, can better be viewed as a subsidy to shipyards than to fishermen. This deficiency is aggravated by the high bidding practices of yards who increase their bids to compensate for the cost of government related delays and red tape.

Any revamp of the legislative support program should begin with an evaluation of the goals to be attained. These goals should be integrated with the goals for fisheries management and regulation. Hence, if overfishing is a problem, the building of new vessels may be more detrimental than helpful in the long run. Assistance programs, whether in the form of research or direct assistance, should be perceived in terms of enhancing the general benefit of the industry, but with the full realization that there should be enough flexibility to allow for special benefits to specific fisheries which from time to time might require specialized or emergency aid. This is not the way things are normally done at this time. The second principle, and perhaps the most vital, is that assistance programs should provide incentive; not the opposite. For example, it may prove more productive to invest in ways and means to improve market response, and present new kinds of fish to the consumer, than to buy new boats. Such incentives might be supplemented by incentives to increase safety aboard ship, with resultant decreases in insurance rates. The possibilities are endless. Training should not be overlooked. The fisheries are in need of new blood as the labor market is decreasing as a consequence of high work loads and long periods at sea. The expenditure of money for the training of fishermen, however, should be critically re-

31. 16 U.S.C. § 779 (1964).

32. 16 U.S.C. § 757 (1965) *as amended*.

viewed at periodic intervals to assure that the programs remain productive. Experience dictates that this is necessary.

Finally, there will always be a need for fisheries research support. Without this there can be no meaningful regulation, nor can sensible support programs be developed. One must first, and last, know the state of the stock he is dealing with and its dynamics. Further, research on gear and techniques will still be required when new management techniques are developed. All of this research is generally too costly for the industry, or for individual states, and thus the ultimate burden must fall on the federal government. Because it may take some time before substantial funds can be made available (unfortunately, the cost of research approximates the yield from U.S. fisheries), some serious ordering of priorities will be required, again another reason for stronger federal powers for the fisheries service. While pure research is still sorely needed, the more immediate demand may well be for applied research directed at providing information needed for effective management and regulation.

SUMMARY

The effective management and regulation of United States fisheries depends in part upon the type of management selected on the international level. As previously pointed out, there should be adequate approaches to this depending upon the characteristics of the stock being regulated, but in the last analysis much of the choosing will be done on the basis of international political factors and negotiation. Once a system is established whereby the share of a coastal State in a specific stock or stocks can be identified, then that State must develop for itself an appropriate mechanism to utilize it. Within the United States, a combination of factors, including MSY and MEY should be utilized by a group on as low a level in the bureaucratic system that is competent to deal with the totality of the stock. To insure that the appropriate political and social factors are also considered, industry participation at this level is essential. While the formula must be flexible, it seems that limited entry will play some substantial role if the fisheries are to grow and prosper. Since, however, this would be unfair for one local group, such decisions should be under the supervision of the federal advisory group proposed in these pages. The federal role in fisheries management must be strengthened, and total federal management and regulation is called for in those fisheries clearly affecting the public interest. The Stratton Commission's recommendation concerning endangered species reflects such a priority. Assistance should be continued, but on a modified scale

to conform to management decisions. The thrust of federal assistance should be to increase information and incentives for the local fisherman, and not to sustain ineffective or nonproductive practices.

A unified policy of management, with a strong element of industrial participation, with an enlightened regulatory structure, and with incentive assistance may not pull the U.S. fisheries into world dominance. But it is quite sure that continuation of the same course presently being steered can only produce more of the undesirable results we have been suffering with for some years. Why not try something new?