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A Contemporary Legal Problem in Ocean Development †

Introduction

Recent activities by the governments of influential nation-states, on the international level as well as within internal policy-making processes, provide convincing evidence of a growing concern over the legal and political problems arising from intensified use of the ocean for many purposes.¹ Decisions made by public international organizations, partly in response to initiatives by individual member states, are additional indications of the relatively sudden emergence of the ocean as a major focus of national and international political consideration.² Private agencies, too, primarily national in orientation, are now organizing for examination of the problems expected to emerge as various groups seek to realize greater benefits from the

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† This paper is an extract from a longer study which was commissioned by the International Institute for Peace and Conflict Research, Stockholm, Sweden. It is reprinted here, with slight revision, with the permission of the Institute. The full study also includes discussion of issues pertaining to mineral resources, military use of the seabed and scientific research. This study, along with comments and contributions by other participants in an Institute symposium which met in Stockholm in June 1968, is available from the Institute under the title: *Toward a Better Use of the Ocean: A Study and Prognosis*.

¹ Both the United States and the Soviet Union have taken the initiative on the international level to ask for investigation or, even, resolution of certain problems. United States government officials claim major responsibility for General Assembly Resolution 2172 (Resources of the Sea) adopted in December, 1966. The First Report of the President to the Congress on Marine Resources and Engineering Development, *Marine Science Affairs—A Year of Transition* 35 (1967); Bellman, Deputy Legal Adviser, U.S. Department of State, Address before American Bar Association National Institute on Marine Resources, p. 2, June 8, 1967.

As is well known, the Soviet Union took the lead in pressing for the study of legal problems of scientific research and ocean resources within the Intergovernmental Oceanographic Commission of UNESCO.

² Reference is made to the Economic and Social Council resolution 1112 (XL), March 7, 1966; General Assembly Resolution 2172 (XXI), December 8, 1966; General Assembly Resolution 2340 (XXII); and, Resolution V-6 adopted at the Fifth Session, Intergovernmental Oceanographic Commission, Oct. 19-28, 1967, entitled "The Establishment of an IOC Working Group on Legal Questions Related to Scientific Investigations of the Ocean."

oceanic part of the planet.³ Although there are some indications of concern by international private organizations, the extent of this has been slight to the present time.⁴

The problems to be confronted by states in attempting to maintain a viable public order for the oceans, to the extent that such problems can now be identified with useful certainty, are compounded both of novel legal conflicts and of recurring controversies that have acquired new connotations or urgency. The occasion for the emergence of this mixture of problems consists of several elements, including the rapid progress now being made in scientific and technological developments affecting man's relation to the oceanic environment, the perception that the enlarged capacities in ocean use made possible by science and technology permit mankind to turn to the ocean to relieve certain social and economic problems created by a rapidly increasing population, and the awareness that the nature of the ocean environment requires international consideration and disposition of controversies over its use.⁵

Access to ocean fisheries is a source of conflict that may be traced back for centuries, yet recent developments pose the problem in new forms or in intensified versions of old difficulties. Although on some occasions disputes over fisheries cause serious political difficulties between states, the impact is generally rather minor and, hence, the reason for considering this problem area stems not from its potential for consequential disruption in relations between states, but from its potential for alleviating the world-wide problem of protein deficiency. The objective is to promote the use of marine food sources and to avoid

³ Without attempting exhaustive enumeration, the following groups and activities may be listed within the United States: The American Bar Association has three committees at work in the Section on Natural Resources and the Section on International and Comparative Law; the Law of the Sea Institute has held annual week-long meetings since 1966 at the University of Rhode Island; the Mershon Center for Education in National Security of The Ohio State University and the Carnegie Endowment for International Peace jointly sponsored two conferences in 1967 on Law, Organization and Security in the Use of the Ocean; the American Assembly of Columbia University sponsored an Assembly on The Uses of the Sea in May, 1968; the American Branch of the International Law Association has recently established a Committee on Deep Sea Mineral Resources.

⁴ The principal activity is that of newly formed Deep Sea Mining Committee of the International Law Association.

⁵ The text statement is not intended to affirm that the ocean is the source of enormous riches merely waiting to be plucked, as one picks fruit from a tree. However it is to be expected that marine resources and the environment can be used in ways that, with ingenuity and effort, will provide measurable assistance of various kinds to what may be hoped is a widening circle of beneficiaries.

unreasonable interference with the most effective employment of such sources. The yield from the ocean has been increasing faster than population for the past several years and there is reason to believe that under certain conditions it can be increased several times more over the next decade or so. Access to the sea for realizing such increases in ways consistent with sustainable production, and division of the yield or the benefits of it on the most equitable possible basis, call for continued scrutiny and research on an international basis.

Claims and Counterclaims

The trend toward expansion of claims by states to exclusive use and control over adjacent fishing areas has continued unabated, or more accurately in accelerated fashion, since the Geneva conferences of 1958 and 1960 on the law of the sea. The techniques employed for seeking expansion are primarily three: (1) changes in the means for determining the area of internal waters; (2) extension of the territorial sea; and (3) creation of a special contiguous zone within which the same rights apply as are exercised by the state within the territorial sea. An additional, if only locally important, method is that of asserting that certain animal resources are "natural resources" of the continental shelf which, by treaty, are within the control of the adjacent coastal state.

It would advance the discussion relatively little to offer detail regarding claims by states to establish straight baseline systems for fixing the limit of internal waters. Suffice to say that since the 1951 decision in the *Fisheries* case, ICJ Reports, 116 (Dec. 18, 1951), a considerable number of states have adopted such a means of delimitation.⁶ Because of the differing nature of individual claims, the opposing claims alleging unlawfulness must necessarily vary.

There is no doubt whatsoever that state claims to a particular width for their territorial sea have had a notable tendency to expand over the past 10 to 15 years. Dramatic indication may be seen in comparison of claims made in 1951 with those now. In 1951 a comprehensive study by Dr. S. Whittemore Boggs reported only three states claiming 12 miles: the U.S.S.R., Colombia and Guatemala.⁷ As of April 1, 1967, this number had increased to thirty-one, and Colombia

⁶ The United Kingdom, Canada, Iceland, Yugoslavia, China (Mainland), Indonesia, the Philippines are among states claiming the system.

⁷ Boggs, *National Claims in Adjacent Seas*, 41 THE GEOGRAPHICAL REVIEW 185, 192-98 (1951).

had reduced its claim to 6 miles.⁸ In 1951 the great preponderance of states were recorded as claiming a territorial sea of three miles, with at least 45 to be noted, not counting colonial possessions. Today the number of 12-mile states exceeds those opting for 3 miles since the latter number has shrunk to 30. Of the 91 states on which data is available, two-thirds (61) claim more than 3 miles. However, it certainly merits emphasis that of this 61 only 7 make claim to more than 12 miles and that each of these greatly exceeds 12.⁹ The major, if not sole, thrust of counterclaim occurs in opposition to these few assertions of authority that greatly exceed a twelve-mile limit.

Drawing similar comparisons in relation to special contiguous zones for fisheries is complicated by the lack of reliable data for earlier claims, but it is reasonably clear that such zones were very few in number until recent years. A close scrutiny of Dr. Boggs' 1951 survey discloses only about a half dozen such claims.¹⁰ That a very substantial shift has occurred in this respect is evident from that fact that at least 35 states now have provisions for exclusive fishing in contiguous zones of various widths. More significant than numbers, however, are the identity of the states concerned since virtually all western European states,¹¹ Canada, the United States, Australia and New Zealand now extend their authority over fisheries to regions beyond the territorial sea. With very few exceptions the zones are limited to a width of twelve miles. With the exception of the exaggerated claims to zones of 200 miles, sometimes cast in terms of "sovereignty" over natural resources, claims in opposition to exclusive fishing zones are negligible.

Beyond these claims to exclusive disposition of fishery resources, which mostly relate to areas in relatively close proximity to coasts, the overriding claim to fisheries is inclusive in nature. Each state asserts that its nationals are entitled to have free access to the resources beyond

⁸ The text statements are based on the table in H. R. Rep. No. 999, at 161-63, except that the 12-mile group here is considered to include North Korea and North Vietnam.

⁹ These seven states are: Argentina, Ecuador, El Salvador, Panama and Peru (all 200 miles); Guinea (130 miles); and Chile (50 kilometers). It should be added, however, that the archipelago states of Indonesia and the Philippines claim extensive areas within their territorial seas and that the width of the latter is virtually irrelevant to the extent of water area within the limit. This is because of the fact that these states are composed of numerous, far-flung islands.

¹⁰ These claims include France, Iceland, Lebanon, Syria, Argentina, Brazil, Colombia, and Ecuador. The list could be expanded a little if claims to sedentary species were included along with those claims put forward in terms of the sea above the continental shelf.

¹¹ For an account of European events see Johnson, *European Fishery Limits in Developments in the Law of the Sea 1958-1964*, 48 (1965) (Special Publ. No. 6 of the British Institute of International and Comparative Law).

exclusive control without limitation other than that accepted in international agreement. Such counterclaims as exist are devoted to attempts to modify this regime in order to establish some degree of shared authority, through explicit agreement, by which regulations may be prescribed for maintaining the yield of a particular stock or stocks in a region.

Clarification of Policy

The fundamental policy problem is that of securing an allocation of competence among states which promotes the utilization of ocean fisheries as a direct or indirect source of food, provides for maintenance of supplies (yield) through time, and encourages a rational allocation of effort to fishery exploitation. Three principal means of achieving such an allocation are commonly recommended: expansion of exclusive fishing limits to various, sometimes extremely lengthy, distances from coasts; creation of a single, all-embracing, public international organization to undertake the management and control of all fishery operations outside exclusive areas; and, emphasis upon improvement in existing international approaches, especially in the work of regional organizations. Existing literature offers ample discussion of the merits of these various alternatives,¹² hence the following is neither an exhaustive nor an intensive survey of the factors relevant to choice of policy.

The fundamental difficulty for policy, which each of the above alternatives is intended to resolve, arises both because the resource is highly migratory and because the traditional legal framework places most fishery stocks beyond the control of any single authority. At the same time it is widely agreed that in order to attain maximum use of the resource, especially under projected conditions of greater intensity in exploitation throughout the global sea, there is a definite need to establish a system by which effective regulations can be prescribed for maintaining the yield of the species exploited. In addition there is little disagreement about the desirability, assuming it were practical to achieve and did not displace more valued goals, of further limiting effort at exploitation so that the economic return therefrom could be maximized or, at least, improved. Under present conditions there is, in

¹² JOHNSTON, *THE INTERNATIONAL LAW OF FISHERIES* (1965); ODA, *INTERNATIONAL CONTROL OF SEA RESOURCES* (1963); CHAPMAN, *FISHERY RESOURCES IN OFFSHORE WATERS*; Alexander, ed., *THE LAW OF THE SEA* 87 (1967); CHRISTY, *THE DISTRIBUTION OF THE SEA'S WEALTH IN FISHERIES*, *id.* at 106.

the absence of agreement, no means by which either of the goals can be achieved.

Since no one owns high seas fishery resources in the critical sense of being able to relate the effects of today's fishing activity on the availability and size of fish that is to be taken in later periods, there is an inherent tendency to use too much capital and labor in any operation involving the exploitation of valuable marine resources. In short, effort will always be pushed to the point where total cost of the operation and total revenues received are approximately equal (including in total cost a reasonable rate of return to capital). Any increase in the price of the end products or decrease in costs of production will induce more fishing effort even after the point has been reached where further effort produces no increase in output and may actually reduce the catch.¹³

From the physical perspective of population magnitude, the present system permits effort to be increased beyond the point of the maximum sustainable yield, i.e., until the stock or stocks are overfished. As will be indicated below, this description of the legal structure is rough and requires to be modified to take into account modifications through agreement. But the basic proposition of freedom of exploitation holds good, as long as states refrain from agreeing otherwise.

In terms of the basic objectives specified above, the establishment of larger and larger areas of exclusive coastal control has little to commend itself except possibly in a very few exceptional situations of limited general significance. Whether these larger areas consist of extensions in terms of 50 miles, of the geological conception of the shelf, or of the complete division of the oceans among "coastal states," the impact is likely to be undesirable for general community goals. Productivity would very probably decrease, when the crying demand is for increase, because the coastal state concerned could not itself engage in full exploitation of the large exclusive area and would be unlikely to permit access to foreign fishermen except under unrealistic, perhaps highly onerous, conditions. The efficiency of existing distant water fishing fleets would almost certainly suffer from the complicated administrative difficulties and outright prohibitions of access which could be expected to attend any such system.

Rational management, in terms even of limits on effort to protect

¹³ Crutchfield, *Zones of National Interest: Convention on Fishing and Living Resources of the High Seas* 5, Paper presented at the American Bar Association National Institute on Marine Resources, June 1967.

yields, would be virtually impossible to implement for a number of reasons. The migratory character of the major fishery stocks would in most instances preclude management based on the authority of any single state (which means that the present difficulty in this respect would be unresolved) and even the conduct of the scientific research basic to management decisions would likely become more difficult if not impossible to undertake. Such cooperation as has already been achieved in this respect might well suffer a serious setback and the fruits of decades of labor and perseverance be dissipated. For indication of the problems posed by migrating fish, the following description by Dr. W. M. Chapman is enlightening:

The sardine, anchovy, saury, hake, bluefin, and albacore off the coast of Mexico and California typify the complexity that occurs off most coasts. Most of the spawning of sardine and anchovy in this region takes place well to sea offshore both countries, and the fish are available there for fishing although most of the actual fishing to date is done reasonably close to shore. Presumably the anchovy do not make very long migrations, but the sardine may. The hake spawn in this area also, but apparently move north to feed and grow along the coast up as far as British Columbia. Although generally coastal and demersal, they do not always stay close to the bottom, and may often school at or near the surface. Also they can be readily caught off shore more than twelve miles. The jack mackerel form a large population, which is fished on mostly near the coast, but the spawning area extends at least 1,000 miles off the coast, and the fish can be caught out there if large adults are wanted. The saury are found all over the northern part of the North Pacific, and we know nothing of their population structure. It appears to be continuous across the ocean. The albacore spawn thousands of miles from Mexico and California in the west central Pacific, and after coming over to where we can fish them off our coast, go back over to Japan where they can be fished there. The bluefin tuna are commonly caught in the territorial sea of Mexico and California but do not spawn in the eastern Pacific at all. They spawn south of Japan and north of the Philippines, and individuals tagged off Mexico are captured the other side of Japan. Fur seals feed off California and sometimes as far south as northern Mexico. Their nearest breeding ground is the Pribilof Islands in the Bering Sea. Gray whales pass through the territorial sea of southern California proceeding to their calving grounds in the internal waters of the lagoons of northern Mexico; and, having fulfilled this biological purpose, migrate back across the Pacific to the feeding grounds off Kamchatka and the western Bering Sea.¹⁴

¹⁴ CHAPMAN, *supra* note 97, at 96-7.

Improvement in the economic returns of a fishery could not be expected from such a regime. It is notorious that progress in this respect is almost completely non-existent even now in fisheries wholly under national control. With more relevance, the division of the ocean even into "national lakes," and certainly anything less, would still fail to comprehend all the fishing effort expended on a particular stock or stocks and it would still be necessary to seek resolution of this difficulty by international agreement.

It deserves stress that these defects attend all recommended expansions of exclusive fishery limits. In particular the recent spate of extensions to twelve miles, a good many of which seek to protect the relatively inefficient inshore fisherman, is widely acknowledged to contribute little to acquiring necessary control over fisheries.¹⁵ And even if further extensions could somehow secure preponderant control the disadvantages in terms of hindering production and increasing costs would probably far outweigh any exclusive, or even community-wide, advantages that might accrue.

A good bit of the rhetoric, though certainly not all in view of the appeals of American fishermen, in support of extended exclusive fishing zones emphasizes, and exaggerates, the alleged benefits to developing states in terms of meeting the protein needs of expanding populations. Two major points should be recalled in this connection that are pertinent to assessing the genuine, rather than the spurious, interests of this group of states. Dr. Hiroshi Kasahara has observed that "lack of rigid institutional arrangements due to the common property nature of fishery resources, in contrast to the existence of long-established tenure systems in agriculture, is one of the two obvious factors contributing to the expansion of fisheries in developing countries"¹⁶ It is at least open to serious doubt whether this advantageous situation could be maintained for the benefit of these states if the ocean were to be compartmentalized by the establishment of enormous, but still numerous, regions to which national laws and administrative structures were to apply. The obstructions to fisheries expansion by developing states which would flow from such an arrangement need hardly be

¹⁵ The hearings in the United States Congress on legislation to adopt a 12-mile exclusive fishing zone are replete with such acknowledgments. See Hearings on S. 2218 before the Subcommittee on Merchant Marine and Fisheries of the U.S. Senate Committee on Commerce, 89th Cong., 2d Sess. (1966).

¹⁶ Kasahara, *Food Production from the Ocean* 36, in 1 First Conference on Law, Organization and Security in the Use of the Ocean (1967).

imagined. This factor acquires, incidentally, even more serious import in view of character of the expanded fishing industries concerned. Dr. W. M. Chapman notes:

As these developing countries develop coastal fisheries, they trend almost at once into becoming longer and longer range fishermen as well, fishing off the coasts of other countries as part of their necessary fishery economics just about as naturally and necessarily as the fish migrate for biological necessity. Examples are provided by Mexico, Panama, Ecuador, Peru, Chile, Guayana, Cuba, Senegal, Ivory Coast, Ghana, Pakistan and Thailand.¹⁷

The losses to such states from interference with the distant fleets could outweigh the gains, if any, derived from the protection of their own near-shore fishermen. If this experience is generalized, and the implications generally understood, it raises interesting conjectures about the positions the developing states might take in determination of community policy toward further expansion of exclusive fishing areas.

In sum the community policies identified above would not be served, and probably would be harmed, by seeking to resolve international fisheries problems by means of large extensions of national jurisdiction.

No suggestion is intended by the above rather categorical assertions that any great gain would accrue to the community from seeking to declare unlawful, or otherwise remove, those rather limited claims to exclusive fishing zones out to twelve miles. Although the zones contribute nothing of consequence to resolving any of the real difficulties posed by fishery management, and may not accomplish much for the welfare of the particular states concerned, they do exist, are now very widely accepted, and are likely to continue to enjoy acceptance. However, it is important that these arbitrary, in terms of any valid inclusive or exclusive interests, boundaries should be extended no further. It is better by far to refrain from contributing further to irrationality and to get on with the problem of seeking to increase effective use of these resources for a world which is in desperate need of protein, including that available from ocean fisheries. The disruption and conflict generated by seeking to reverse the moderate claims already made also would inhibit genuine resolution of problems.

At the other end of the spectrum in recommendations are those

¹⁷ Chapman, *supra* note 97, at 92.

urging the establishment of a single global authority, probably as an agency of the United Nations, to manage all the fisheries of the world ocean beyond the confines of limited exclusive fishing zones.¹⁸ These proposals are frequently accompanied also by the suggestion that the management goal of such an authority should be that of realizing the maximum net economic yield from the fisheries.¹⁹ Although the major purpose underlying these suggestions is that of providing for suitable management of living resources, a subsidiary objective is often mentioned in an accompanying proposal that the income generated by such a scheme should accrue to the United Nations.²⁰

There is a good deal of reason to sympathize with the international agency approach to fishery problems, primarily because it directly meets the difficulty posed by the migratory nature of marine fish. An international organization would comprehend the great bulk of the world's ocean fisheries, at least so long as no further enlargement occurs in exclusive zones. The proposed goal of such a management scheme, that of realizing the maximum net economic yield of fisheries also has very considerable appeal, especially in view of some demonstrations that, at least in the catching part of the fish business, reduction of effort could increase the net economic yield significantly in some specific situations.²¹ Adoption of the global agency approach might be considered to have the additional advantage of deterring states from seeking to extend the fishery limits further into the sea.

Unfortunately the attraction of these various reasons for favorable appraisal of this international system diminishes rather drastically in

¹⁸ The principal advocate of this approach in the United States is the Commission to Study the Organization of Peace. See the 17th Report, *New Dimensions for the United Nations* 39 (1966).

¹⁹ *Id.* at 38.

²⁰ *Id.* at 38-9.

²¹ The Report of the Second Session of the FAO Committee on Fisheries in 1967, for instance, observes:

"... it was the common conclusion, after a study of three different stocks of demersal fish which are heavily fished in the North Atlantic area, that a substantial cut in mortality would lead after a transitional period of from four to six years, to the same or a larger catch being caught by a reduced (by say 20 percent) fishing effort."

FAO Report of the Second Session of the Committee on Fisheries, Rome 1967, 24-29 April 1967. FAO Fish. Rep. No. 46, p. 2. Halibut, salmon, whales, cod and haddock are specific examples of neglect of the costs involved in a fishery. See also Chapman, Problems of the North Pacific and Atlantic Fisheries 7 (Paper Presented at the Annual Meeting, Fisheries Council of Canada, Montreal, May 10, 1967).

light of a number of pragmatic considerations which suggest strongly that such a universalist approach would be counter-productive.

An initial, fundamental, consideration is that knowledge of marine resources, on a global basis, is woefully inadequate. Estimates of total productivity from the ocean vary enormously, yet if the lower ranges in these estimates were accurate, the problem of overfishing (in the biological sense) would loom before us rather quickly.²² But it is not so much total productivity of which we need greater knowledge and understanding. Rather the greater need exists concerning population dynamics in particular situations. On this score there can be no serious doubt that the levels of expenditures now being made for this purpose are completely inadequate.²³ The importance of this is that such expenditures are, with very few exceptions, made by individual states for their own research efforts and staff.²⁴ It also is now readily apparent that states have been unwilling to finance research by newly established regional agencies,²⁵ probably because this is regarded as diverting funds from national agencies. It seems wholly unrealistic to consider that states will be inclined to support a global fisheries agency with the kind of funds that would be required to see that the necessary knowledge of this resource would be generated by such an agency. While there may be prospects for improvement in this regard in local situations, the blunderbus world-wide agency approach would face enormous obstacles in attracting support and, in the meantime, would be confronted with a gigantic regulatory problem for which it neither had the basic scientific knowledge required nor any reasonably likely prospect of gaining that knowledge.

Objection to the proposed global agency is also founded upon reservations about the usefulness of the goal of maximum net economic yield which is often suggested as the objective such an agency should seek in managing world fisheries. A prime difficulty in this respect is that the objectives of the many fishing states around the world are so varied. Dr. Chapman summarized this situation concisely:

²² CHAPMAN, ON THE MANAGEMENT OF OCEAN FISHERIES, in *Proceedings of the 5th Meeting of the (California) Governor's Advisory Commission on Ocean Resources* 77, 83 (1966).

²³ *Id.* at 80.

²⁴ CHAPMAN, *supra* note 107, at 80; Carroz & Roche, *The Proposed International Commission for the Conservation of Atlantic Tuna*, 61 AM. J. INT'L L. 673, 696 (1967).

²⁵ A brief account of international organization effort is in Burke, *Aspects of Internal Decision-making Processes in Intergovernmental Fishery Commissions*, 43 WASH. L. REV. 115, 154-69 (1967).

It appears to be a wide-spread goal of nations to optimize their gross physical yield of food from the ocean. This may be for the purpose of obtaining foreign exchange, of obtaining needed animal protein to feed its own population, of protecting its sources of foreign exchange by limiting its imports, to increase the nation's gross economic yield, to accumulate capital, to give useful employment to its people, or to obtain some particular type of fish because of the nation's particular demands. These objectives are not all compatible. Examples can be given for each of these objectives. Objectives of nations in this respect change with changing times and circumstances, and sometimes rather rapidly.²⁶

Although conceivably the complexities involved in reconciling diverse objectives under the umbrella of a single "best," or at least "better," yield might be resolved on the more selective basis of a particular fishery or area, there seems ample reason to doubt that such a task can be discharged on an all-embracing, global basis.

Other problems with the proposed goal can also be cited. First, assuming maximum economic yield were somehow acceptable to a sufficient number of states, it would be an enormously complex task to provide for regulations that would approach the end sought. There is every reason to doubt that it is at all feasible to undertake this task now for general application, as some propose. Many fisheries which would be subjected to the proposed system are exploited by a number of states whose economic systems and structure are quite diverse and offer few common denominators for use in constructing a specified economic yield which could be called the maximum for each state.²⁷ Apart from this there is also the consideration that in many fisheries multiple species are utilized which are differently prized by the various exploiting states. The task of regulating such fisheries in order to obtain the maximum sustained yield from the various species is complicated in itself, but to go beyond that to seek economic ends adds much greater complications.²⁸

Recently, criticism of the economic yield criterion has called attention to the fact that proponents of it usually are speaking only of the fish-catching end of the fishing industry and do not take into account that the entire enterprise extends from catching to processing

²⁶ CHAPMAN, *supra* note 107, at 85.

²⁷ See Kasahara, *supra* note 101, at 27-31 and the discussion at pp. A2-A38; CHAPMAN, *supra* note 97, at 94.

²⁸ Dr. Chapman reviews and illustrates this and comparable problems, in Chapman, *supra* note 107, at 92-3.

to distribution to the ultimate consumer. Dr. Chapman observes:

A fishery must be considered, from the economic viewpoint, in the context of the entire range from the ocean to the consumer of the product. The catching phase is only one part of the business, and profit (or net economic yield) from it is not always the controlling aspect of the fishery's economics. If a fishery is to be viable economically the entire chain from ocean to consumer requires to earn a profit on capital and labor involved (assets employed) equal to what the same capital and labor employed in another business will yield or the capital and labor will go into the other business. It is quite possible that the fishing link in this chain can be run at a net loss and the whole enterprise be economically viable if the profit from another link in the chain is adequate to keep up the profit level of the total. There are a great many variables in this equation that differ with the different fisheries. Only a few can be touched upon here, briefly, as examples.²⁹

The notion that the global agency approach would produce income is criticized on a number of grounds, ranging from grave doubt that any would be produced to reservations about providing an independent income for the UN as it is presently constituted. The very size and nature of the administrative and regulatory structure of the international agency could mean that costs of operation exceed the income generated by extracting economic rent from fisheries. To the extent income is produced because fisheries are operated to achieve their maximum economic yield, it is also pertinent to note the estimate that probably more than half of world fisheries are now being conducted at levels below that which marks the maximum net economic return.³⁰ Until the level of effort reaches that which corresponds to the maximum net economic yield there is no need to subject the fishery to regulation, hence no opportunity to realize income.

The issue of an independent income for the UN is not really relevant in a discussion of ocean problems. Suffice to note that such income would undoubtedly have to be restricted in terms of the purposes sought in using it, at least so long as disposition would be subject to action by the General Assembly.

The third policy alternative, improving the existing regulatory system for international fisheries, appears to offer more hope for the foreseeable future than the two methods just discussed. Perhaps it is

²⁹ *Id.* at 88; 1 First Conference on Law, Organization and Security in the Use of the Ocean *supra* note 101, at pp. A34-A38.

³⁰ CHAPMAN, *supra* note 107, at 94.

more accurate to phrase it that this alternative seems to be less unsatisfactory than the others, for hardly anyone expresses much enthusiasm for the present method of management. Essentially what is called for by this policy alternative is both improvement in the regional institutions which are the means by which states now seek to agree on conservation policies and prescriptions and the creation of such new bodies as are required to embrace important fisheries which might need regulation in the future. The belief underlying this policy is that it is wiser to build upon existing institutions and that the regional approach offers more hope of adequate surveillance of developing problems and of the necessary selectivity in attempts to resolve such problems. Pursuit of this avenue is further recommended because of the trend now beginning to develop toward efforts at improving existing institutions. Even assuming these are not wholly satisfactory arrangements, it seems wiser to utilize their experience and expertise than to attempt to establish a single gargantuan organization that would seek management of all fisheries on a global basis.

An important part of the approach at improving and revising existing institutional mechanisms should be that of seeking to alter the objectives of management to take greater explicit account of the economic factors relevant to management. The critical comments already made regarding maximum economic yield called attention to the shortcomings of the proposal to adopt this goal for application by a global agency regulating all the fisheries of the world; such criticisms have much less cogency in more selective context. In any event certain aspects of the continuing dialogue about physical and economic goals are worthy of mention as a final observation about policies.

First, there appears to be a failure in communication among those involved. Proponents of maximum economic yield in fisheries regulation often begin by conceding that economic factors are but one element that should be taken into account in choice of conservation policy, but just as often they proceed to elaborate their position as if such criteria were the only ones relevant. Perhaps it is not, therefore, surprising that opposition takes the form of admitting that economic factors are a consideration important for decision but then devotes the greatest part of the rebuttal to arguments against employment of economic factors as the sole criterion for decisions. One of the difficulties that may partially account for this rather sterile debate is the dearth of concrete studies into the economic aspects of fisheries. In terms of empirical investigations there appears to be little evidence

upon which to base normative guides for conservation policy or guides to practical negotiations about such policy.

Secondly the point is usefully made by Professor Crutchfield that the suggestion is not that maximum net economic yield can be employed as an absolute, but that when this consideration is faced explicitly states may be able to make judgments that permit such degree of approximation as is feasible and negotiable at the moment.³¹ The notion is that some improvement in economic yield might be attained as a practical result of regulation if it is consciously sought along with other alternatives. Professor Crutchfield asserts that the gap is so great between the inefficiency engendered by the present lack of management and the gains from introducing direct controls on fishing effort that there is a great deal of room for maneuver in seeking agreement by states for improvement. Even if the optimum cannot be attained, considerable progress is possible. Similar considerations suggest the opportunity of reaching agreements upon one or another level of yield that is acceptable to the states concerned in a fishery even if it is not the "optimum" or "best" with respect to any of them.

Thirdly, observation has been made that the criterion of maximum net economic return can be employed not as a goal but as a measuring stick for determining the costs of various alternative goals of the regulatory process.³² Assuming that some choice must be made between or among various goals or combinations thereof, consideration of economic costs attached to them might make a substantial contribution to defensible or more rational choices.

Trend In Decision

The principal decisions of interest here are those about the lawfulness of establishing exclusive fishing areas, both through the enlargement of the territorial sea and through the contiguous fishing zone concept, and about the management of fisheries beyond exclusive areas in the high seas.

There is no need to recall in any detail the various proposals for the territorial sea and exclusive fishing zone reviewed, but not accepted, at the Geneva Conferences of 1958 and 1960. Although neither conference succeeded in adopting provisions on these matters, there

³¹ CRUTCHFIELD, *supra* note 98, at 6.

³² 1 First Conference on Law, Organization and Security in the Use of the Ocean, *supra* note 101, at A21-A22.

was one, at least singularly important consensus clearly revealed at that time. Despite lack of sufficiently widespread agreement on a width for the territorial sea or on details about an adjacent fishing zone, there did appear to be very wide agreement that claims exceeding twelve miles for either purpose were not lawful. Accordingly there need be no hesitation in stating that the various 200 mile claims advanced by some South American states do not accord with customary international law.

Since the last Geneva conference, we noted above, numerous states have unilaterally proclaimed extensions in the territorial sea and creation of new exclusive fishing zones.³³ Since such unilateral pronouncements are an accepted means for creating international law, the question is whether a pattern of any kind has emerged, or a trend initiated, indicating the development, or evolution, of a generally accepted width for the territorial sea and contiguous fishing zone.

With respect to the territorial sea it appears no longer to be possible to contend, with reasonable justification, that international law does not permit a breadth wider than three miles. Even if state practice has not coalesced, in terms of the views of a preponderant number of states, around a single width beyond three miles, the evidence is quite clear that a very substantial majority of states do not accept restriction to a three mile territorial sea. Insofar as fishery resources are concerned, it does not make much difference what width between three and twelve miles is regarded as acceptable under international law. The reason for this is in the accompanying development of a consensus about the permissibility of an exclusive fishing zone of twelve miles. On this, state practice seems clearly to indicate that such a zone is in accord with customary law. The result is that acquisition of exclusive rights to fishery resources is permissible up to a distance of 12 miles from the base line for delimiting the territorial sea. Contentions that a twelve-mile territorial sea is not in accord with international law must rest on considerations relevant to other issues, hence this controversial matter is not further examined herein.

Decisions about authority over exploitation of fishery resources beyond the exclusive fishing area are still dominated by the overriding general principle that states are entitled to free access to such resources unless they have explicitly agreed otherwise. Freedom of fishing is

³³ It appears that more states have changed one or the other of these limits than have chosen to retain their limits. To these states must be added the states created since 1958, of whom only a handful have claimed a territorial sea of 3 miles or neglected to establish a wider exclusive fishing zone.

enshrined as one of the four enumerated principles embraced by the concept of freedom of the seas in Article 1 of the Convention on the High Seas. Similarly, the Convention on Fishing and Conservation of the Living Resources of the High Seas in Article 1 affirms the rights of the nationals of all states to engage in fishing on the high seas subject to obligations accepted by agreement.

It is not possible within the short compass of the present discussion to examine the many details of the agreements states have concluded for regulating their fishing activity on the high seas. The following observations concern the general process of decision on this matter and, more specifically, the participants in fishery agreements, the objectives sought, and the authority conferred on intergovernmental agencies.³⁴

In overall perspective of the decision process, it is important initially to note that while states have established a number of advisory groups, usually in relationship with FAO, and some intergovernmental commissions with limited authority, the gap continues to widen between the intensity of fishing and the potential occurrence of regulatory problems, on the one hand, and the institutional means for coping with such problems, on the other. With modest exception, virtually all consequential international agreements, which provide for substantive action as distinguished from mere advice, involve a limited number of the developed states exploiting relatively high value species in the northern hemisphere where, until recently, the major fisheries were all located. Yet rapid developments in fisheries, and the potential for conflict over limitations on yield and effort, are occurring in many places throughout the ocean and many of the developing states are heavily engaged in such developments and, hence, in potential conflicts. There is very serious question whether present procedures, or present scientific capabilities, are adequate either to identify emerging problems calling for regulation or to adopt prescriptions suitably fashioned for dealing with the problems.

Two recent approaches are noteworthy as efforts to establish a decision process more suitable than that historically employed which features, primarily, the conclusion of *ad hoc* agreements among states.

³⁴ The literature cited by Carroz & Roche, *supra* note 109, provides guidance to the many details of decision in this area. See also Burke, *supra* note 110. Special reference should be made to the valuable work now underway in FAO in examining the various international institutions engaged in, or related to, fishery management.

In an attempt to modify, but not to discard wholly, the slow and cautious route of securing explicit agreement, the Geneva Conference of 1958 concluded a Conservation Convention which provided for special authority in coastal states to initiate conservation measures unilaterally in the absence of agreement by the states affected.³⁵ Even in this instance agreement must first be sought by the state seeking to initiate conservation measures, but failure does not preclude the adoption of regulations and, under certain conditions, their implementation. Protection of the interests of other states is sought by providing both a set of criteria for determining the permissibility of the measures projected and, of the greatest importance, a compulsory method for making the determination. As commendable as this new procedure appears to be, in terms of *procedure* rather than of substantive policy, the unhappy fact is that the Convention has attracted embarrassingly little support among states and at this stage, ten years after its initial adoption, has played no discernible part in facilitating decisions about instituting conservation measures. Furthermore, although the Convention has not been invoked as yet, there is reason to suspect that some states, or fishery groups therein, may hope to employ the Convention for the purpose of assuring coastal fishermen special exclusive, or preferential, rights to fisheries rather than only for imposing a limit on exploitation.

The second and probably more significant set of activities seeks to work within the present decision process but would attempt to improve its workings by highly conscious, deliberate, and coordinated surveillance of the world fishing scene in order both to apprehend problems in timely fashion and to make improvements in existing institutional structures for fishery regulation. Again without making a detailed survey of events, the above appears to be an accurate description of certain primary functions of the newly created Committee on Fisheries established within the FAO structure.³⁶ Prime assistance in the accomplishment of these ends is also to be expected from the Advisory Committee on Marine Resources Research, and its Working Parties, which provide advice to FAO and to the Intergovernmental Ocean-

³⁵ For examination of this Convention see McDUGAL & BURKE, *THE PUBLIC ORDER OF THE OCEANS* (1962); JOHNSTON, *THE INTERNATIONAL LAW OF FISHERIES* (1965); Oda, *supra* note 97; GARCIA-AMADOR, *THE EXPLOITATION AND CONSERVATION OF THE RESOURCES OF THE SEA* (2d ed. 1959); CRUTCHFIELD, *supra* note 98; Burke, *Some Comments on the 1958 Conventions, in 1959 Proceedings of the Am. Soc. Int'l L.* 197, 204-06.

³⁶ An account of the evolution of FAO activities is in Chapman, *supra* note 106.

ographic Commission in UNESCO. The major importance of this development within FAO, it seems is in provision for performance of two vital decision functions: (1) the gathering of intelligence about activities that might occasion need for international regulation or, at least, cooperation, and (2) the appraisal of presently operating institutions to determine their effectiveness and to make recommendations of actions required to remedy deficiencies.³⁷ Since the Committee on Fisheries is composed of senior fishery officials of many fishing states (some not in FAO), and ACMRR of widely known and respected experts, the essential conditions for fulfillment of these tasks would appear to be met. It is true, of course, that these FAO activities do not envisage any dramatic change in individual state authority over the oceans, but they nonetheless could have dramatic impact on the decision process by reason of the critical nature of the functions performed. Provision of timely and pertinent information does not alone assure that action will be taken, but it is, at least, unlikely that any remedial or advance action would be taken at all unless such information can be made available.

Turning to more specific aspects of the decision process, it is evident that participation in fishery regulation on an international level is, quite understandably, pragmatic in nature, as states seek to deal with emerging, or suspected, or recognized problems of a particular region or stock. Participation in agreements is usually, but not always, determined by the interest a state possesses in the region or species as identified by the fishing activity of its nationals. Since conditions and interests change over time, sometimes rapidly, agreements need to be, but are not always, designed to permit relatively easy accession by new participants. At the same time recent commentary points out that states party to an agreement seeking common objectives should have a sufficient commonality of interest to support the joint endeavor.³⁸ Fortunately, political cleavages, representing conflicting interests of various extraneous types, do not appear yet to have been a deterrent to participation in conservation programs.

A major difficulty, already being experienced and likely to get

³⁷ See the reports of the first two sessions of the Committee. FAO Fish Rep. No. 33 and No. 46. See also the article by Roy Jackson, Assistant Director General (Fisheries) of FAO, *World Fisheries in 1966 and 1967*, 6 *Fishing News International* No. 7, p. 20, July, 1967.

³⁸ Report of the Advisory Committee on Marine Resources Research Working Party on FAO Regional Fisheries Councils and Commissions 11-13 (Doc. No. ACMRR: 4/67/WP. 27) (14 January 1967).

worse, comes from the rapid increase in fishing intensity, especially in relation to the amount of research into the impact of that activity on the species exploited. The question is: when is it necessary to take concerted action to avoid excessive effort and reduction of yield? Because of the nature of the resource and the complexity of developing reliable information about it, appropriate answers to this question demand international cooperation as well as coordination of individual efforts. Fortunately, as already noted, existing international institutions are available for this task and efforts are already underway to deal with this problem.

At the same time, however, it would be unrealistic to overlook that states are by no means displaying any great anxiety about becoming party to the 1958 Conservation Convention which seeks to provide for a means of fishery regulation that does not necessarily depend upon the specific agreement of affected states. Fishing states must, however, accept the basic agreement in substantial numbers before it can be expected to have any useful role in resolving the problems of providing acceptable conservation regulations for high seas fisheries. Although this agreement is in effect now, slightly more than 22 states having ratified it, very few of these states engage in consequential fishing activity.³⁹ Assuming the Conservation Convention provides a useful framework and procedure for resolving fishery conservation problems, and that adequate substantive policies are developed, it still cannot be of consequential help if major fishing states ignore it or if the number of accepting states does not grow substantially. It deserves reiteration that the Conservation Convention does *not* reflect customary law with respect to the authority of coastal states, hence it cannot be invoked by one of the latter against a non-party distant water state.

The extent of participation in this agreement, and other indicators mentioned below, probably accurately reflect the degree of disinterest and inertia among states regarding the ocean fishery difficulties that loom on the horizon. Within the United States, the subject has recently attracted far wider interest than ever before but so far as high level policy makers are concerned there is reason to doubt that there is either

³⁹ Of the important fishing states only the U.S., the U.K., Portugal and South Africa and parties. The rest of the parties, with some exceptions, catch only minor amounts of fish and are scattered around the globe.

adequate grasp of the problems involved or the inclination to provide the means necessary to deal with them in time.⁴⁰

Decisions about the objectives of conservation regimes display a rather notable degree of uniformity on the international level. Almost all of the individual agreements establishing intergovernmental commissions, as well as the 1958 Conservation Convention, project the goal of maximum sustainable yield as the end to which regulations are to be directed.⁴¹ Close observers, and participants, in the process of decision on these matters are quite positive in their assertion that the selection of this goal reflects neither parochial bias of scientists toward physical yields as the desirable goal nor a lack of concern over broader social goals.⁴² Rather, it is explained, there are insuperable difficulties in accommodating all the various and diverse social objectives sought by states in fishery exploitation, except for the general consensus that it is in the common interest to take no more than the maximum the resource will yield on a sustainable basis. Concurrence on this goal both operates to maintain the stock(s) at the highest equilibrium level and facilitates the determination by each individual state of the goal it most prizes within that limit. Achievement of more refined goals is then to be left to negotiation between the particular states concerned.

At the same time, however, there is an easily discernible awareness in international decision-makers of the need for, and desirability of, taking account of economic considerations in selection of alternative prescriptions. In some degree it seems highly probable that these factors already influence international conservation decisions, but there appears to be a growing demand for taking more explicit account of them. A recent FAO staff report offers substantial indication of an attitude that even if present previously, is now more evident:

Recently, renewed attention has been drawn to the need for detailed evaluation of the economic consequences of over-fishing. Congestion on some of the most popular high seas fishing grounds has, in some instances, led to international friction. Furthermore,

⁴⁰ The first report of the new National Council on Marine Resources and Engineering Development plans special emphasis upon providing a solution to the world food problem. The niggardly sums apparently to be devoted to this "solution," in relation to the magnitude of the difficulties involved, suggests that there is less to this emphasis that meets the eye.

⁴¹ The Convention employs the term "optimum sustainable yield" but this is generally understood as referring to the maximum.

⁴² Kasahara, *supra* note 101, at 27; discussion, *id.* at A32-A38; Chapman, *supra* note 107, at 86-7.

governments and industry are increasingly concerned over the economic waste involved in the employment of more capital and labor than is necessary to produce a given output. The early economic studies demonstrated that an unregulated fishery would not automatically lead to an economic optimum, and that a fishery giving the maximum sustainable yield in weight from a fish stock would in general not give the maximum net profit.

The introduction of economic data and analysis will not however provide administrators with ready-made solutions to the complicated problems affecting management decisions. As the biologists can sometimes forecast the effects of alternative methods of regulation on the physical yield of a fishery, the economist may be able to "cost" these methods and thus indicate a preferred line of action from the standpoint of "economic efficiency," in terms of input use or market preference. There may be reasons for making a choice to some degree different because of considerations of political or social acceptability or administrative feasibility. Political factors enter the picture where regulatory action has pronounced "distribution effects," i.e. disrupts the existing equilibrium between groups interested in the fishery. Distribution problems arise in connection with the division of catch and employment opportunities among nations participating in a regulated fishery and, within a nation, the division of such opportunities among different fleets and types of gear. Special problems arise in fisheries in which two or more species are fished simultaneously, in particular if the various groups participating in such a fishery have different preferences for the species caught, because generally the individual species will react differently to a particular regulation method. However, it is possible to determine who, under particular methods of regulation, is a "gainer" and who is a "loser." Clearly those regulations which promise to result in economic gains for all participants will be preferred to those which are bound to hurt all or some. Clearly also, agreement can be more easily obtained with regard to regulatory changes that disturb an existing equilibrium less than others. To the extent that it can shed some light on these aspects, economic analysis can make some contribution also toward the solution of the "distribution" question, although the final choice between possible alternatives will be made on the basis of broader policy considerations.

Even where collection of economic information is, however, intended to do no more than to study "efficiency" effects, it will serve useful purposes in the administration of regulatory programs, both in forecasting probable effects, and for taking timely corrective action.⁴³

⁴³ FAO, Committee on Fisheries, Doc. No. COFI/10/66.

The Committee on Fisheries itself commented in its First Report:

The Committee stressed the unique characteristics of the common property fishery resources of the high seas, and endorsed the general objective of fishing nations to obtain the optimum economic yield from all fish stocks and resources. While techniques for the biological assessment of fish stocks were relatively well advanced (although far from universally applied), the basic concepts of criteria for judging economic returns were still in a relatively early stage of development. The Committee therefore placed a more intensive study of the economic aspects of fishery management high in priority in its future program⁴⁴

Despite the existence of numerous fishery commissions it is a mistake to conclude that member states have surrendered any substantial autonomy in decision to these groups or that they are endowed with adequate resources for implementing their objectives. Generally speaking the formal authority conferred on the intergovernmental commissions is severely limited and it is a rare instance that they are sufficiently endowed to adopt prescriptions which become effective against the wishes of a member.⁴⁵ Apart from practice, which may indicate a greater level of control, the commissions are usually limited to making recommendations which the members may or may not choose to implement. Such a pattern hardly provides a basis for confidence that states will be willing soon to confer upon an international agency the kind of control required for effective management of fisheries.

Although centralized research activities, under international control may not necessarily be most fruitful in all situations, it is still notable that very few of the fishery commissions and groups are provided with a staff to carry out this function. This is the more remarkable in view of the widespread, if not unanimous, view that the most successful regimes have been those with a staff for carrying out research independent of national control. A principal reason for this situation consists of the scarcity of funds for research on a national level, which accounts for the unwillingness to establish an international agency with a need for such funds.⁴⁶

⁴⁴ FAO Fish. Rep. No. 33, p. 9 (1966).

⁴⁵ Carroz & Roche, *supra* note 109, at 684-93; Burke, *supra* note 110, at 154-74.

⁴⁶ Dr. Chapman perhaps pinpoints the source of this antipathy: These three quite successful commissions [Halibut, Salmon and Tuna] often have been supported by funding by their member countries on a level more adequate than those governments have funded the research by their own fishery agencies on internal fishery management problems of comparable magnitude." Chapman, *supra* note 106, at 14.

As far as general financial support for the fishery conservation commissions is concerned, it is usually observed to be minimal in relation to the scope and complexity of the problems involved. As noted, this is not accounted for by any animus toward this form of cooperation, but seemingly by the fact that *all* funds for activity in this field are limited on a national basis. Until the problems involved become high priority, or higher than presently, there is little reason to expect change. Within individual states, it is true that officials immediately responsible are aware of the difficulties, but generally these officials are not sufficiently high in the government to effect changes in policy.

Appraisal and Recommendation

Insofar as international decision functions are concerned, the decisions reviewed offer some basis for optimism that impressive gains are being made toward keeping abreast of the regulatory difficulties of marine fisheries. It would be, in any case, premature to offer criticism of the very recent transformation within FAO which is designed to attack these difficulties with a greater sense of urgency and importance than had been attached to them before. Nonetheless it remains to be seen whether the agencies and groups involved can successfully sustain their efforts in the face of the inertia or disinterest which appears to grip important member states at high levels of administration. Although a considerable range of activities are occurring in the development of world marine fisheries as a source of protein, it is plain that certain, at least, developed states do not place a high priority on this matter however extravagant the promises in the rhetoric employed for public consumption. And just as food from the sea actually occupies a very minor part in plans for ocean development, little significance appears to be attached to the management problems already existing and which will multiply as exploitation intensifies. In view of the lead time required for coping with the very costly research effort which must serve as the principal basis for fishery regulations, there is, over all, little reason for encouragement to be found in the niggardly support now made available for this purpose nationally or internationally. The time for investing in this effort must, because of the nature of the problem, precede the need for regulation by a long period. In this sense, then, revisions in international regulatory procedures and practices may be rather barren signs of hope, however encouraging they are otherwise.