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*Chairman - L. T. Schweig, Vice President, Vita Food Products, Inc.,  
Chicago, Illinois*

## **Fisheries and the IDOE**

J. L. McHUGH  
*Marine Sciences Research Center  
State University of New York  
Stony Brook, N. Y. 11790*

The International Decade of Ocean Exploration was proposed by the President of the United States on March 8, 1968, in a message to Congress on the environment. He referred to the Decade as "an historic and unprecedented adventure". The Decade concept was described in a "white paper" published by the National Council on Marine Resources and Engineering Development (1968) popularly known as the Marine Sciences Council. In his message the President invited the nations of the world to join together in a concerted, long-term, cooperative program of ocean exploration, of which the Decade would be the initial emphasis. In effect, he was saying that the world can no longer afford the luxury of individual, uncoordinated, oceanic research efforts, no matter how excellent they may be as scientific programs, at a time when man's growing uses of the ocean are raising serious problems that must be resolved quickly. He did not mean that there is no justification for independent individual oceanic research, but rather that the problems of rational use of the sea and its resources demand that a substantial part of the world's expertise in oceanography must be devoted to a coordinated attack on these problems.

The IDOE concept grew out of discussions of the law of the sea in the United Nations, and particularly through the concern expressed by many nations about ownership of the seabed and its resources, and the resources of the superjacent waters. This concern was given concrete expression in the fall of 1967 in a resolution adopted by the General Assembly of the United Nations which proposed an "examination of the question of the reservation exclusively for peaceful purposes of the seabed and the ocean floor, and the subsoil thereof, underlying the high seas beyond the limits of present national jurisdiction, and the use of their resources in the interests of mankind" (United Nations, 1968). It was the view of the United States that development of a set of principles on which boundaries to national jurisdiction could be based, and decisions on an appropriate international regime for the deep sea, are dependent upon adequate scientific knowledge, and that the necessary scientific knowledge is not now available in sufficient detail. The Ocean Decade was proposed as a means of getting the required scientific background quickly and efficiently.

What is unique about the Decade that sets it apart from other oceanographic or ocean engineering programs? If the proposal were simply a continuation or expansion of past efforts it could hardly merit a distinctive title. But the Decade is much more than that. The proposal anticipates: (1) a sustained exploration of the sea, planned and coordinated for the entire globe, *not* sporadic and independent efforts; (2) emphasis on knowledge for its value in resource management, rather than on scientific investigation for its own sake; (3) merging of the efforts of international organizations like the Intergovernmental Oceanographic Commission, Food and Agriculture Organization of the United Nations, and the World Meteorological Organization, among others, as well as the skills and facilities of individual nations; (4) more systematic collection and more rapid dissemination of data, backed by international standards designed to enhance utilization; (5) emphasis on making information available to the lesser developed countries and helping them to improve their capabilities for ocean research and development.

United States planning for the nation's part in IDOE, now a responsibility of the National Science Foundation (NSF), has been aided by two other documents: (1) "International Decade of Ocean Exploration -- Program Recommendations" prepared by a Federal interagency planning group established by the National Council on Marine Resources and Engineering Development, and including a "Definition of Decade Planning Requirements", endorsed by the Marine Science Council's Committee on Policy Review (National Council on Marine Resources and Engineering Development, 1969); (2) "An Oceanic Quest", an appraisal of the Decade, by the National Academy of Sciences and the National Academy of Engineering, prepared by an eminent group of United States oceanographers and engineers (National Academy of Sciences, 1969).

Responsibility for Decade planning and funding was delegated to NSF in November 1969, and the NSF Office for the International Decade of Ocean Exploration was established in March 1970.<sup>1</sup> Planning and establishment of policy has proceeded vigorously with the aid of a small team of consultants and appropriate advisory mechanisms. The President's budget for the fiscal year beginning July 1, 1970, contained \$15 million for IDOE, to support academic programs and programs of other federal agencies in approximately equal amounts. At the time this paper was delivered (November 9, 1970) this NSF budget had not been approved. The National Science Foundation has issued three notices describing the Decade (National Science Foundation 1970a, 1970b, 1970c).

International planning for the Decade has been proceeding as an important part of the activities of the Intergovernmental Oceanographic Commission (IOC) of UNESCO. A valuable background document has been the report "Global Ocean Research" (United Nations, 1969), more commonly known as the "Ponza Report", prepared by a joint international working party of the Advisory Committee on Marine Resources Research to the Director General of the Food and Agriculture Organization of the United Nations, the Scientific Committee on Oceanic Research of the International Council of Scientific Unions, and the Advisory Group on Ocean Research of the World Meteorological Organization. A "Comprehensive Outline of the Scope of the Long-Term and Expanded Program of Oceanic Exploration and Research", which includes the "Ponza Report" as an

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<sup>1</sup>The author was Head of the Office for the International Decade of Ocean Exploration from March to the end of August 1970.

appendix, was approved by the General Assembly of the United Nations in December 1969. IOC has been directed to develop detailed plans as promptly as possible, and to this end it established an international "group of experts" in January 1970.

In these times of budgetary stringency it will be difficult for the United States to preserve the unique characteristics of the Decade in developing its national IDOE program. The budget to be provided in the current fiscal year (if it is provided at all) may be virtually the only new funds allocated to oceanography in the United States, and pressures will be strong to use these funds to support programs already in progress for which funding has been withdrawn or curtailed. The Administration and the National Science Foundation have made it very clear that IDOE funds must not be used for "more of the same", but rather for programs that are imaginative and new in every sense. In issuing this warning the Administration also has made it clear that United States objectives in the Decade are oriented toward rational use and management of the ocean and its resources, not resource development and exploitation. It also has been stressed emphatically on several occasions (although it will be difficult to find this caveat in writing) that fishery research and development will not be a part of the United States Decade Program, at least in the early period. To drive home this point it also has been emphasized that plans and documents prepared and issued prior to the Vice President's announcement of October 19, 1969, in which he described the five initiatives in oceanography to be supported by the Administration, cannot be regarded as official commitments. IDOE was one of the five initiatives, and this means that policy with respect to the U. S. national IDOE program does not antedate the Vice President's announcement. The fourth annual report of the President to the Congress on Marine Resources and Engineering Development (National Academy of Sciences, 1969), however, does make reference to fisheries in the chapter entitled "International Decade of Ocean Exploration" as follows:

"The enhanced ocean uses and resource potential can provide benefits to developing nations. Unused fishery resources . . . exist off the coasts of a number of developing countries."

"The Expanded Program will give special emphasis to broadening the opportunities for developing nations to participate in the use of the oceans and its resources through encouraging them, for example, to . . . survey coastal fishery resources . . ."

"The oceans contain large unused fishery resources and fisheries offer an opportunity to assist in closing the protein gap with many latent fisheries lying within easy access of nations plagued by serious protein deficiencies. The pooling of knowledge about these resources by interested nations during the Decade could contribute significantly to development and management of world fisheries resources."

From this it appears that the United States sees fishery development in the Decade primarily as a problem of the developing nations. United States policy and programs for its own fisheries are contained in two other chapters in the report cited: "Accelerating Use of Food From the Sea" and "Expanding International Cooperation and Understanding".

Despite these decisions and constraints it is difficult to understand how fishery science and management can be ignored in the United States national program for the Ocean Decade. Marine plants and animals, including those of

commercial and recreational value, are important elements of the ocean. They affect the physical and chemical properties of the sea. They are important concentrators and transporters of heavy metals, pesticides, and other natural and introduced constituents of the water. They are useful indicators of environmental quality. Commercial and sport fisheries remove substantial fractions of the standing crops of some species, with demonstrable effects on the ecological balance. Equally important, fishing still is the most valuable extractive marine industry, and to most of the member nations of the Intergovernmental Oceanographic Commission it will be one of the principal beneficiaries of the Long-Term and Expanded Program of Oceanic Exploration and Research and of the International Decade of Ocean Exploration. The United States and some other developed nations have unique experience in fishery research and management, and are among the major present users of living marine resources. This experience and technical skill, together with impressive power to modify the marine environment by catching large quantities of marine plants and animals, carries with it the responsibility to play an important part in the fishery aspects of the Decade.

#### ***Importance of Fisheries in IDOE Planning***

Despite the denial of historic precedent implicit in the endorsement of the Ocean Decade by the present Administration it is illuminating to review the important part that fisheries played in early planning. The "white paper" of May 1968 (National Council on Marine Resources & Engineering Development, 1968), in describing the Decade concept, started off with the statement: "the ocean is an important source of food". All through this paper, which elaborates the President's message of March 8, 1968, to the Congress, fishery research and management were important themes, as illustrated by the following quotations:

"the Decade can encourage and assist in the development of resources, and particularly new sources of food, critically needed in the developing areas of the world. Thus, emphasis should be placed on the identification and assessment of food and mineral resources as well as investigation of ocean processes."

"Improved understanding of fishery resources and their reactions to natural and manmade disturbances is necessary to increase and maintain the yield and to resolve international fishery conflicts."

The distinguished group of scientists who prepared "An Oceanic Quest" (National Academy of Sciences, 1969) obviously believed that fisheries would be an important element of the Decade, for they devoted a major part of one chapter to the subject. Similarly, the international group of scientists who prepared "Global Ocean Research" saw fishery research and management as important problems that should receive particular attention. The Long-Term and Expanded Program of IOC also devoted a full chapter to the living resources and the research and exploration needed for their full utilization and management.

In all these documents emphasis was laid upon understanding the responses of living resources to natural and man-made changes in the environment, not on resource development *per se*. Within the three major topics selected for primary emphasis in the early stages of the NSF program (National Science Foundation, 1970b), two, namely Environmental Quality and Environmental Forecasting, have important implications for fisheries, and fisheries scarcely can be ignored in this context. Even the third, Seabed Assessment, will have importance for fisheries also.

### ***The State of Marine Fishery Management***

There has been much talk about marine fishery management, and the fishery programs of the United States federal government and the States have management as their major goals. Management is also the central theme of the nine international fishery commissions of which the United States is a member. Yet it is difficult to find good examples of successful marine fishery management, domestic or international. The two examples most commonly cited, the North Pacific fur seal and halibut management programs, are facing problems now which raise doubts as to their economic success, although no one could seriously challenge that they attained their biological objectives. World fish catches have been increasing steadily for a quarter of a century and there is every reason to believe that this growth will continue for a time. Concomitant with this development has come an increase in the number of fairly clear-cut examples of overfishing. Threats to the fisheries from pollution and other human modifications of the environment are assuming alarming proportions. The conviction is growing that the problems are multiplying more rapidly than knowledge is accumulating to solve them. To argue that fisheries bring no net return to the national economy and that therefore they do not merit investigation at the taxpayer's expense is to ignore major segments of the marine fisheries, such as the processor, the importer, and the investor in foreign fisheries. This argument also ignores the recreational and economic contribution of marine sport fisheries, the international obligations of the United States to contribute to management of living marine resources, and our moral obligation to preserve these resources for generations to come.

### **CONCLUSIONS**

The National Marine Fisheries Service, formerly the Bureau of Commercial Fisheries, will need to give continued attention to fishery research, development, and services of various kinds. But it is difficult to conclude that the fisheries can be ignored in the United States national program for the International Decade of Ocean Exploration. The Decade provides a new and unique dimension for fishery research and management, just as it does for oceanography as a whole. This new dimension is the vigorous international planning and coordination that will be a major feature of the Ocean Decade. The scarcity of clear examples of effective marine fishery management is an expression of our lack of understanding of the mechanisms that govern the dynamics of fishery populations, and of our inability to develop acceptable social-political management arrangements. These are precisely the kinds of problems that the Decade proposes to elucidate and eventually to solve.

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