

convinced, nor were a great many other participants, that the substitution of one enormous global regime to control the fisheries would lessen, let alone solve, the problems that smaller, local, specially designed arrangements have only partially solved. The failures of most of the regional commissions and other arrangements are not usually the fault of the design or the structure of these arrangements, but due to the inability of human beings to agree on the necessary levels of cooperation and compromise. It is unrealistic to expect that added agreement or greater willingness to compromise would follow the involvement of all the states of the earth, with their jealousies and their opposing interests.

But if the major problems were not solved at Malta, most participants came away with a strengthened conviction that better machinery must be provided for the protection and fair use of the offshore fishery resources of the world ocean. The meeting sharpened the general understanding of problems of high seas fisheries, and convinced some newcomers to the game that the complexities had not been created by the present fishing nations merely to justify the status quo nor to protect their own interests. The meeting also spurred those whose task it will be to offer improvements to the system to redouble their efforts.

DISCUSSION

International Session

Discussion Leader: Lee J. Weddig

Discussion Panel: Harvey Bullis, Edward A. Schaefer

Fisheries and the IDOE

J. L. McHugh

Q. Bullis:

What is being done about staffing and funding IDOE?

A. McHugh:

Our budget request for fiscal year 1971 was \$15 million, but the budget bill has not yet been passed by the Congress. The appropriation will be divided approximately 50-50 between federal and private agencies. In subsequent fiscal years the 50-50 formula will not be a precedent; federal agencies will compete with all other candidates for funding and awards will be made on the basis of merit and on adherence to the criteria established for the decade.

Q. Bullis:

What is the significance of the three priority categories?

A. McHugh:

The three broad subjects selected for emphasis were Environmental Quality, Environmental Forecasting, and Seabed Assessment. The National Science Foundation has already issued an important Notice and a brochure, and other descriptive material is in preparation. You should write to the Office for the International Decade of Ocean Exploration in NSF for information.

Q. Schaefer:

Tell us of the countries involved in IDOE, and of their progress.

A. McHugh: Some 60 countries are members of the International Oceanographic Commission of UNESCO. Many of them are interested in IDOE, but as far as I am aware none has announced a national program. I suspect that they may be waiting to see what the United States does, since we proposed the Decade. Our program is not yet funded.

Q. Weddig: Just what will IDOE mean for fisheries?

A. McHugh: As I said in my talk, direct support of fishery research has been specifically prohibited in the U.S. Decade program. But I expect that most of the biological research in IDOE will have important applications to fisheries. Even though the program has not yet started, proposals already are coming in. Most of the biological proposals received so far do not seem appropriate for IDOE support. By helping candidates to develop good program proposals by working with them from the start, we expect that biology will receive substantial support.

Q. Ripley: Give us some idea of coordination between IDOE and on-going programs.

A. McHugh: The Ocean Decade has as its primary purpose support of bold, imaginative, new programs, not support of old programs already under way, or in trouble financially because support by other agencies has been curtailed. Some on-going programs like CICAR, for example, are very much in the spirit of the Decade, and it is quite probable that IDOE funds could be used to accelerate certain promising phases of existing international oceanographic research, or to explore promising leads suggested in their early phases.

Soviet Fisheries and Fisheries Research off the East Coast of the United States

A. C. Jensen

Q. Weddig: What is the caliber of the Soviet biologists on the cruises in which you participated?

A. Jensen: I think they are good, capable fishery scientists. Most of their research is at about the same level as ours was about 30 or 40 years ago; that is, mostly descriptive, life-history studies. However, the USSR is progressing in this field and probably will move forward more rapidly in the future. Incidentally, the Americans and Soviets got along very well on the cruises, despite the language barrier. We found the scientists and crew to be cooperative and helpful and we tried to be the same. All of them were very energetic and worked hard.

Q. Griffiths: Tell us about the progress of the results of the fishing survey with the Soviets.

- A. Jensen:* The data are still being worked up and so all of the results are not known yet. Reports of the research will be published in English-language journals and, I presume, in Soviet journals, over a period of a number of years.
- Q. Weddig:* The Soviets are using stern trawlers. With the U.S. using smaller vessels, our catch will be still less. Wouldn't U.S. fishing companies get the same results as the Soviets if we fished with stern trawlers?
- A. Jensen:* I don't think our fleets would be as effective -- in an economic sense -- because they are not subsidized, whereas the Soviet fleets are. In fact, most European fishing fleets are heavily subsidized. With our high labor and material costs, the management investment in stern trawlers would be too high to be profitable.

Informal Comments on Foreign Competition and the U. S. Fisheries

B. H. Brittin

- Q. Schaefers:* The U. S. is a member of several international conventions. What new bilateral treaties do we anticipate?
- A. Brittin:* We have about six bilateral treaties -- two productive, one operational at our cost, two operational and at the cost to foreign countries.
- Q. Schaefers:* What is done to coordinate activities with other nations so that bilateral treaties are kept in agreement?
- A. Brittin:* We negotiate with such countries.
- Q. Schaefers:* Suppose a party to the treaty exceeds their fishing quota or violates some other treaty provisions? What do we do then?
- A. Brittin:* We have the power to ask them to leave. Also, bargaining is in progress with non-treaty member nations to bring them into agreement.
- Q. Bullis:* Management should realize that stock has to be based on functionality. Shouldn't management gather all information possible to avoid error?
- A. Brittin:* In some treaty areas because we don't have all the answers we are managing on approximately the best conservation practices. We are not sure that this is always understood even though a great deal of time has been spent in explaining this to all parties concerned.
- Q. Fitzgerald:* Do bilateral fleets seek military information under the guise of legitimate fishing?
- A. Brittin:* We do not question many vessels, but there is really little of that kind of trouble. These treaties do much to solve this problem.

- Q. Whiteleather:* Do you see, in the near future, more work in the Gulf of Mexico?
- A. Brittin:* We do know that there is good fishing in the Gulf and I would imagine that we need more protein. To locate more and different protein sources would require more work in the Gulf.

Report from Malta

C. P. Idyll

- Q. Bullis:* Is not the real problem a question of how to satisfy the needs of individual countries when the requirements may be in conflict?
- A. Idyll:* Yes, basically this is right. There are not enough fish which can profitably be harvested from the sea to satisfy the demands of all countries, yet fish are regarded as a common resource, open to exploitation by everyone. No satisfactory general scheme has been devised to determine how to divide the catch. There are those who argue that distribution should be on the basis of need alone, but this proposal ignores the economic considerations.
- Q. Schaefers:* If a central agency was created to control world fishing, what kinds of enforcement of regulations would be instituted? And, where would we go for information needed for management?
- A. Idyll:* These questions were not discussed at Malta except in passing. But it was urged by many of us in the fisheries sector that many of the problems related to fishing were different in fundamental ways from those of mineral extraction. This view is being more and more accepted.
- Q. Schanes:* In many cases instead of eating fish we feed it to poultry and other farm animals. Shouldn't we be making better use of scarce protein?
- A. Idyll:* It would be desirable to feed fish to humans directly, and thus avoid the losses of energy and substance which result from cycling the protein through farm animals. We should devise better preservation methods and distribution schemes as quickly as possible. Meanwhile, we are able to make use of enormous quantities of fish by feeding it to poultry and swine, fish which would otherwise be completely unavailable to man.
- Q. Schanes:* Should we be working to develop fisheries or to find other sources of protein?
- A. Idyll:* The food needs of mankind are so large that we must work hard to develop all possible sources of protein, including fish.