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## Use of the Ocean

While few of us are ever satisfied about the state of knowledge in our own particular area of interest, the papers presented at the first International Oceanographic Congress demonstrate that collectively we really do know a great deal about a great many aspects of marine science.

So rapidly is science advancing that in a relatively few years it can be expected that we will know enough about the seas for engineers to begin to make this knowledge of practical benefit to mankind on a considerable scale. It is obvious, I think, that we will soon be able to exert a significant measure of control on climate. We certainly are in a position today to suggest means whereby the winds could be aided in the overturn of the oceans so that the total biological resources could be increased. After all, it is a great deal easier to turn over water than to plow land. Thus it is no longer necessary to suppose that fishermen must always remain hunters rather than farmers.

As scientists we are glad that until now nobody has seriously suggested that we begin tinkering with nature, but this is something that could obviously happen rather quickly, provided there were some agreed principles of control and monitoring. It is high time that some wise and farsighted men begin to think seriously how the vast potential resources of the ocean can be divided on an equitable basis.

The sea is the only part of the earth that nobody claims to own. The old idea of the freedom of the seas has well served its original purpose. It arose because until now the most important characteristics of the oceans were that they provided for cheap world-wide transport and for national defense. I am afraid that the idea of the freedom of the seas is somewhat incompatible with their efficient and wise exploitation.

The economic and social problems that will be encountered as we begin seriously to exploit marine resources seem to me to be formidable, much more formidable than the remaining unsolved scientific problems. Some very wise agency needs to be developing the ground rules within which the vast marine resources can be developed in an efficient and safe manner for the benefit of all mankind.

Inevitably it will be practical to set up the equivalent of fences in the sea so as to regulate the goings and comings of fish. It will be possible to remove the "weed" forms and to encourage the production of desirable food fishes. But probably nothing will happen in such directions on a large scale until it is decided who will have a right to reap the harvest.

Many of us have quite clear-cut ideas about ways by which the oceans could be exploited and at the same time be made more useful to mankind. It is time that the lawyers and the statesmen go to work so that these achievable improvements in the over-all economy can become a reality.—COLUMBUS O'D. ISELIN, *Woods Hole Oceanographic Institution*. [Based on remarks at the concluding session of the first International Oceanographic Congress, New York, 11 Sept. 1959]