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THE UNITED NATIONS AND MARINE RESOURCES

DAVID S. BROWNING*

Many national interests of the United States are affected by the military, commercial, scientific, and other activities carried out in the marine environment.¹ These activities are subject both to national and international legal systems, and in some situations the effect on United States national interests is not certain. As long as these activities are conducted on the continental shelf or in the territorial waters of a nation, they are generally covered by the jurisdiction of that nation. But beyond the limits of the shelf and territorial waters, the matter is not so clear. Under some circumstances, the jurisdiction of the coastal nation may continue to be applicable for some distance beyond which is generally thought of as the continental shelf and territorial waters, but in other circumstances it is not clear what, if any, jurisdiction is applicable. In the absence of applicable national jurisdiction, activities are generally subject to international treaties and the sometimes vague general principles of international law.²

By international convention³ the continental shelf is defined as extending to submarine areas under two hundred meters or less of water, or as far beyond that point as resources can be exploited. This open-ended definition has caused some persons to suggest that the outer limit of the

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1. See L. HENKIN, *LAW FOR THE SEAS MINERAL RESOURCES*, 10-14 (1967) (Report prepared for the National Council on Marine Resources and Engineering Development). The Marine Resources and Engineering Development Act of 1966, defines the "marine environment" as including:

(a) the oceans, (b) the Continental Shelf of the United States, (c) the Great Lakes, (d) seabed and subsoil of the submarine areas adjacent to the coasts of the United States to the depth of two hundred meters, or beyond that limit, to where the depths of the superjacent waters admit of the exploitation of the resources of such areas, (e) the seabed and subsoil of similar submarine areas adjacent to the coasts of islands which comprise United States territory, and (f) the resources thereof. 33 U.S.C.A. § 1107 (Supp. 1967).

It appears that any general discussion of marine resources should be based on a definition which includes all ocean areas, surface, water column, seabed, and subsoil, as well as estuarine areas.

2. See L. HENKIN, *supra* note 1, at 37-43; see also 4. M. WHITEMAN, *DIGEST OF INTERNATIONAL LAW*, ch. 10, §§ 1, 2 (1965).

3. Convention on the Continental Shelf, April 29, 1958, 15 U.S.T. 471, T.I.A.S. No. 5578 (effective June 10, 1964).

shelf should be made more precise because technology now permits exploitation beyond two hundred meters.⁴ Others have said that the definition is precise enough—that the coastal nation should be able to claim as much of its surrounding seabed as technology permits. And still other suggestions would, in effect, divide all the ocean floors among coastal nations.⁵

National claims to territorial waters vary from three to two hundred miles or more. The matter is further complicated by national claims to exclusive fisheries zones and other contiguous zones varying from twelve to two hundred miles or more.⁶ There are numerous examples of international disputes arising from disagreement over the extent of national maritime jurisdiction.⁷

Because of growing international interest in the exploitation of marine resources, the United Nations has become involved in discussions concerning the nature of these resources and the proper legal environment for their exploitation. At the 1966 session of the General Assembly, United States initiatives led to the adoption of a Resolution on Resources of the Sea.⁸ This Resolution requested the Secretary-General (1) “to

4. See, e.g., Statement by James Russell Wiggins, U. S. Representative to the U. N. General Assembly, made in Committee I (Political and Security), on November 6, 59 U.S. DEP'T STATE BULL. 574, 575 (1968) [hereinafter cited as “November 6 Wiggins Statement”]. In *Ocean Oil*, 3 (December 2, 1968), it is reported that a major petroleum company, holding leases in the Santa Barbara Channel, has sent out requests for bids for the manufacture of a production system capable of working in two thousand feet of water. Although including many new ideas, the basic system calls for the wellhead to be placed on the sea floor in a water environment, able to work for twenty years, the use of hydraulic controls, and a pipeline to shore or to shallower water. It is also believed that the specifications call for it to be assembled in components so that its various sections can be brought up to the surface for repair and maintenance. It was reported that according to the proposal, bids must be in by early December, 1968, the successful bidder being announced in January, 1969. A prototype is to be built by July, and the first operations unit by early 1970.

5. Statement of Francis T. Christy, Jr., in *Hearings on the United Nations and the Issue of Deep Ocean Resources Before the Subcomm. on International Organizations and Movements of the House Committee on Foreign Affairs*, 90th Cong., 1st Sess., 87 (1967). Dr. Christy himself does not advocate the “median line” or “national lakes” alternatives.

6. See MARINE SCIENCE AFFAIRS—A YEAR OF PLANS AND PROGRESS, Table E-4 (March 1968) (the Second Report of the President to the Congress on Marine Resources and Engineering Development).

7. E.g., the dispute between the United States and Chile-Ecuador-Peru regarding the South American nations' claim to exclusive fishing rights in a zone at least two hundred miles wide; the “Japanese-Korean fishing dispute”; the “Iceland-United Kingdom fishing dispute.”

8. G.A. Res. 2172, 21 U.N. GAOR, Supp. 16, at 32, U.N. Doc. A/6316 (1966). Much

make a survey of the present state of knowledge of the resources of the sea beyond the continental shelf, excluding fish, and of the techniques for exploiting these resources;"⁹ and (2) "to undertake . . . a comprehensive survey of activities in marine science and technology, including that relating to mineral resources development, undertaken by members of the United Nations family of organizations, various Member States and intergovernmental organizations concerned, as well as by universities, scientific and technological institutes and other interested organizations."

Based upon these surveys, the Secretary-General was requested

. . . to formulate proposals for: (a) Ensuring the most effective arrangements for an expanded programme of international co-operation to assist in a better understanding of the marine environment through science and in the exploitation and development of marine resources, with due regard to the conservation of fish stocks; (b) Initiating and strengthening marine education and training programmes, bearing in mind the close interrelationship between marine and other sciences.

The Secretary-General has completed these surveys.¹⁰ In the *Introduction and Summary*, the Secretary-General made the following statements:

. . . In view of the large expenditure and inherent risks [of operation in the marine environment], it must be expected that would-be entrepreneurs will seek maximum safeguards for their investment, in the first instance by obtaining such exclusive rights as may be necessary to offer the prospect of a fair return. At the

of the description of United Nations activity is derived from the Report (in press) of the International Panel of the Commission on Marine Science, Engineering and Resources. The members of the Panel are Carl A. Auerbach, Chairman, Jacob Blaustein, and Leon Jaworski.

9. A similar resolution, not excluding fish, was adopted by the United Nations Economic and Social Council on March 7, 1966. 40 U.N. ECOSOC, Supp. 1, at 3, U.N. Doc. E/4176 (1966).

10. Report of the U. N. Secretary-General on the Resources of the Sea, U. N. Economic and Social Council, 44th Session, Agenda Item 3(c), and 45th Session, Agenda item 12, U.N. Doc. E/4449, (21 Feb., 1968) (*Introduction and Summary*); *Part One: Mineral Resources of the Sea Beyond the Continental Shelf*, U.N. Doc. E/4449/ Add. 1 (19 Feb. 1968); *Part Two: Food Resources of the Sea Beyond the Continental Shelf Excluding Fish*, U.N. Doc. E/4449/ Add. 2 (7 Feb., 1968); and *Marine Science and Technology: Survey and Proposals*, U.N. Doc. E/4487 (24 April, 1968).

same time, the legitimate interests of the world community as a whole must not be jeopardized by any undesirable activities.

All this presupposes the existence of some kind of administrative machinery with adequate authority to allocate exploration, exploitation and other rights over particular areas for specific lengths of time and possibly for specific minerals, to determine the scale of fees and royalties and the proper use of their proceeds, to ensure systematic and orderly operations by the entrepreneur and afford such protection as he may reasonably expect. The establishment of such administrative machinery and its recognition by the international community appears to be a matter of some urgency.

Equally necessary, in the near future, is a decision at the international level on the outer limit of the continental shelf which as presently defined is so imprecise as to leave virtually open the important question of where the exclusive rights of riparian countries cease to apply.¹¹

The Secretary-General recommended that the United Nations be given "adequate responsibility for systematic collection and diffusion of information regarding economic marine mineral deposits, techniques appropriate for their development, as well as for resolving related juridical, general administrative and political issues."¹²

On August 2, 1968, the Economic and Social Council endorsed the reports of the Secretary-General and adopted a resolution requesting the Secretary-General to "follow closely new developments which may occur in fields of marine mineral resources exploration, evaluation and exploitation beyond the continental shelf and the possible implications thereof, and to report when appropriate to the Economic and Social Council."¹³

As debate in dividing the ocean continued, many of the smaller members of the United Nations apparently were fearful that the oceans would become the subject of a colonial-type grab by the powerful nations, resulting in an inequitable division of the sea's resources. The first real manifestation of this appeared in August, 1967, when the Permanent Mission of Malta to the United Nations proposed that the agenda

11. Report of the Secretary-General on the Resources of the Sea, *supra* note 10, at 4-5.

12. *Marine Science and Technology: Survey and Proposals*, *supra* note 10, at 82.

13. This was subsequently done.

of the twenty-second U.N. General Assembly, scheduled to convene on September 19, include the following item:

Declaration and treaty concerning the reservation exclusively for peaceful purposes of the seabed and of the ocean floor, underlying the seas beyond the limits of present national jurisdiction, and the use of their resources in the interests of mankind.¹⁴

A memorandum accompanying this proposal expressed concern that the rapid progress in technology could lead to expansion of national claims to the seabed, the appropriation of resources "of immense potential benefit to the world" by the technologically developed nations, and the use of the seabed for military purposes.

In order to avoid such developments, the memorandum proposed that the seabed and the ocean floor be declared "a common heritage of mankind" and reserved exclusively for peaceful purposes. It was also proposed that an international framework be created for the use and economic exploitation of the ocean floor. The financial benefits resulting from such activities were proposed to be used "primarily to promote the development of poor countries."¹⁵

The Malta item was referred to the First (Political and Security) Committee of the General Assembly. In December, 1967, the General Assembly, by a vote of 99-0, adopted a resolution sponsored by thirty-nine nations, including the United States.¹⁶ The resolution recognized that exploitation and use of the seabed should be conducted in accordance with the Charter of the United Nations, in the interest of maintaining international peace and security and for the benefit of all mankind. An ad hoc committee of thirty-five nations was created to prepare

14. U.N. Doc. A/6695 (1967). The item was revised to call for Examination of the Question of the Reservation Exclusively for Peaceful Purposes of the Seabed and Ocean Floor, and Subsoil Thereof Underlying the High Seas Beyond the Limits of Present National Jurisdiction, and the Uses of their Resources in the Interest of Mankind. U.N. Doc. A/6840, Add. 2.

15. U.N. Doc. A/6695. See also H.R. REP. No. 999, 90th Cong., 1st Sess. 1R (1967).

16. U.N. Doc. A/2340 (1967). The Resolution was sponsored by Afghanistan, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Ceylon, Chile, Colombia, Ecuador, France, Ghana, India, Indonesia, Jamaica, Japan, Libya, Luxembourg, Madagascar, Malta, Mexico, Netherlands, Nigeria, Norway, Pakistan, Poland, Rumania, Senegal, Somalia, Sudan, Trinidad and Tobago, Tunisia, Turkey, United Arab Republic, United Kingdom, United States, Venezuela, and Yugoslavia.

a study for consideration by the General Assembly at its twenty-third session.¹⁷ The study was to include a survey of United Nations and other international activity regarding the seabed, an account of the scientific, technical, economic, legal and other aspects of the problem, and an indication of practical means to promote international cooperation in the exploitation of the seabed.

Debate on this Resolution revealed the wide range of positions of the fifty-eight nations that participated. Some nations said that title to the seabed should be vested in the United Nations; others advocated a moratorium on unilateral exploitation of seabed resources. Most nations seemed to think that there should be a freeze on claims of national jurisdiction over the seabed. And some maritime nations opposed any consideration of the matter by the General Assembly.¹⁸

The ad hoc committee met in March, 1968, and set up two working groups: one group was to deal with technical and economic questions; the other was to deal with legal questions. The committee saw its essential functions as gathering information, clarifying issues, and defining goals of possible international action. Meeting two more times during the summer of 1968, on August 30, 1968, the committee adopted a report which was submitted to the current session of the General Assembly. Reports of the economic and technical and legal working groups were also submitted. However, the committee itself was unable to agree on recommendations to present to the General Assembly. Although there was no formal vote recorded on the matter, it appears that there was fairly substantial agreement on the following principles:¹⁹

1. The seabed should be used for peaceful purposes, and military use should be limited.
2. There is an area, yet undefined, of the seabed beyond national jurisdiction which should not be subjected to the sovereignty of any single nation.
3. A precise boundary between "national" and "international" areas of the seabed should be established.

17. The following member nations were appointed to the Ad Hoc Committee—Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Ceylon, Chile, Czechoslovakia, Ecuador, El Salvador, France, Iceland, India, Italy, Japan, Kenya, Liberia, Libya, Malta, Norway, Pakistan, Peru, Poland, Rumania, Senegal, Somalia, Thailand, USSR, Tanzania, United Arab Republic, United Kingdom, United States, and Yugoslavia. With the exception of Austria and Czechoslovakia, all of these are coastal states.

18. MARINE SCIENCE AFFAIRS, *supra* note 6, at 23.

19. U.N. Press Release GA/3699 (1968).

4. Exploitation and exploration of the seabed should be in accord with international law and specifically the Charter of the United Nations.

5. Exploitation of the seabed should be for the general benefit of mankind.

6. There should be proper safeguards against pollution of the sea.

It should be emphasized that, although the principles exclude national sovereign rights in areas beyond present national jurisdiction, they do not suggest that title to or sovereignty over the deep ocean floor be vested in the United Nations. This is a departure from the original Malta proposal.²⁰ However, like the Malta proposal, the principles do recognize the interests of the international community in the development of submarine mineral resources beyond present national jurisdiction.

On October 29, 1968, Mr. James Russell Wiggins, United States Representative to the General Assembly, made a statement supporting the concept of there being an area of the ocean floor beyond national jurisdiction.

As a starting point, we heartily endorse the *ad hoc* committee's recognition that there exists an area of the seabed and ocean floor underlying the high seas which is beyond national jurisdiction. The orderly development of this area is properly a matter of international concern. Accordingly, the United States believes that one of our first priorities should be the development of principles which may ultimately serve as the basis for an agreed regime for the exploration and use of the deep ocean floor and may assist in the establishment of a precise boundary for this vast area.²¹

Mr. Wiggins then reviewed and elaborated the United States statement of principles which were introduced in the *ad hoc* committee on June 28, 1968.²²

20. The original Malta proposal provided in part that, it is believed that the proposed treaty should envisage the creation of an international agency (a) to assume jurisdiction, as trustee for all countries, over the seabed and the ocean floor, underlying the high seas beyond the limits of present national jurisdiction . . . U.N. Doc. 6695, at 3 (1967).

21. 59 U.S. DEP'T. STATE BULL. 555 (1968).

22. *Id.* at 555-56.

First, no state may claim or exercise sovereignty or sovereign rights over any part of the deep ocean floor. There can be no incorporation into national territory of areas beyond the limits of national jurisdiction, to which an agreed regime would apply. There should be no discrimination in the availability of the deep ocean floor for exploration and use by all nations and their nationals in accordance with international law.

Second, internationally adopted arrangements governing the exploitation of resources of the deep ocean floor should be established as soon as practicable. These arrangements should reflect principles agreed upon for the exploration and use of the deep ocean floor and should include provision for (a) the orderly development of resources of the deep ocean floor in a manner reflecting the interest of the international community in the development of these resources; (b) conditions conducive to the making of investments necessary for the exploration and exploitation of resources of the deep ocean floor; (c) dedication as feasible and practicable of a portion of the value of the resources recovered from the deep ocean floor to international community purposes; and (d) accommodation among the commercial and other uses of the deep ocean floor and marine environment.

The United States representative continued that agreement on these balanced guidelines would facilitate negotiations looking toward an internationally agreed regime for the exploitation and use of the deep ocean floor. Meanwhile, exploration and exploitation activities should and will continue. That regime, when established, should provide due protection for the integrity of investments made in exploitation of the seabed and the deep ocean floor beyond the limits of national jurisdiction prior to the establishment of its boundary.

Third, there should be established, as soon as practicable, an internationally agreed precise boundary for the deep ocean floor. In determining a precise boundary for the area of the seabed and ocean floor beyond the limits of national jurisdiction, it will be necessary to take into account existing international law, including the Geneva Convention on the continental shelf. Exploitation of the natural resources of the ocean floor occurring prior to the establishment of this boundary should be understood not to prejudice its location, regardless of whether the coastal state considers the exploitation to have occurred on its "continental shelf."

Fourth, states and their nationals should conduct their activities on

the deep ocean floor in accordance with international law, including the Charter of the United Nations. They should conduct their activities in the interest of maintaining international peace and security and promoting internal cooperation, scientific knowledge, and economic development.

Fifth, the United States advocates preservation of the freedom of scientific research generally. In order to further international cooperation in the scientific investigation of the deep ocean floor, states should (a) disseminate, in a timely fashion, plans for and results of national scientific programs concerning the deep ocean floor; (b) encourage their nationals to follow similar practices concerning dissemination of such information; and (c) encourage cooperative scientific activities regarding the deep ocean floor by personnel of different states.

Sixth, all states and their nationals should have reasonable regard for the interests of others in the exploration and use of the deep ocean floor and should avoid unjustifiable interference with the exercise of the freedom of the high seas by other states and their nationals, or with the conservation of the living resources of the seas, and any interference with fundamental scientific research carried out with the intention of open publication. All states should be called upon to adopt appropriate measures in their activities on the deep ocean floor to minimize pollution of the seas and disturbance of existing biological, chemical and physical processes and balances.

Seventh, states and their nations should render all possible assistance to one another in the event of accident, distress or emergency arising out of activities on the deep ocean floor.

In November, 1968, the First Committee concluded further debate on the peaceful uses of the seabed and ocean floor, and began discussions on draft resolutions. The drafts recommend that the General Assembly establish a new standing committee on the seabed; suggest measures for international cooperation in exploration of the seabed; establish principles for the exploration, use and exploitation of the seas; call for steps to minimize marine pollution; urge precise definition of the continental shelf and call on nations to refrain from appropriating any part of the seabed beyond national jurisdiction; and call upon nations not to claim sovereign rights over the seabed beyond the limits of national jurisdiction.²³ Any principles established to regulate the ex-

23. U. N. Press Release WS/371 (1968).

exploitation of marine resources should be based upon accurate scientific information. But current knowledge is very limited regarding the location, nature, quantity, and exploitability of most of these resources.²⁴ The United States delegation responded to this need at the August meeting of the ad hoc committee. The United States recalled the General Assembly's interest in an indication of practical means to promote international cooperation in the exploitation of the seabed, and presented a draft resolution on the proposed International Decade of Ocean Exploration. The draft resolution recommended to members of the United Nations the concept of the Decade to be undertaken within the framework of a long-term scientific program under the general auspices of the United Nations. It was suggested that the Intergovernmental Oceanographic Commission, a part of UNESCO, perform a coordinating role.

On November 6, 1968, in the First Committee of the General Assembly, Mr. Wiggins stated that the United States and twenty co-sponsors were submitting a draft resolution by which the General Assembly would proclaim an International Decade of Ocean Exploration beginning in 1970. The United States invited the co-sponsorship of every delegation.²⁵

24. "November 6 Wiggins Statement," at 574-75; U.N. Doc. A/AC. 135/L. 3 (1968).

25. "November 6 Wiggins Statement," at 574. The text of the Draft Resolution is as follows:

The General Assembly,

Recalling its concern for ascertaining practical means to promote international co-operation in the exploration, conservation and use of the seabed and the ocean floor, and the subsoil thereof, as manifested in its resolution 2340 (XXII),

Recalling as well that in its resolution 2172 (XXI) it requested that the Secretary-General prepare proposals for ensuring the most effective arrangements for an expanded programme of international co-operation to assist in a better understanding of the marine environment through science, and for initiating and strengthening marine education and training programmes.

Recalling further the proposals made by the Secretary-General in his report (E/4487), pursuant to resolution 2172 (XXI),

Noting that the Bureau and Consultative Council of the Intergovernmental Oceanographic Commission of UNESCO considered the proposed International Decade of Ocean Exploration a useful initiative for broadening and accelerating investigations of the oceans and for strengthening international co-operation,

Noting also the recommendation adopted by the Economic and Social Council on 2 August 1968, inviting the General Assembly to endorse the concept of a co-ordinated long-term programme of oceanographic research, taking into account such initiative as the proposal for an International

The concept of the Decade was first presented in March, 1968, when President Johnson proposed that the nations of the world join in a cooperative long-term program of ocean exploration on a worldwide basis. As the initial focus of such an ambitious undertaking, he proposed a ten-year period of expanded collaborative efforts to be designated as the International Decade of Ocean Exploration.²⁶

As stated in a Report by the National Council on Marine Resources and Engineering Development:

Decade of Ocean Exploration and international programmes already considered, approved and adopted by the Intergovernmental Oceanographic Commission for implementation in co-operation with other specialized agencies,

Aware of the consideration given to the proposal in the *Ad Hoc* Committee to Study the Peaceful Uses of the Sea-Bed and the Ocean Floor, arising from the contribution which the Decade would make to scientific research and exploration of the sea-bed and deep ocean floor, as an important part of a co-ordinated long-term international programme of oceanographic research,

1. *Welcomes* the concept of an International Decade of Ocean Exploration beginning in 1970 to be undertaken within the framework of a long-term programme of research and exploration, including scientific research and exploration of the sea-bed and deep ocean floor, under the aegis of the United Nations;

2. *Invites* interested Member States to formulate proposals for national and international scientific programmes and agreed activities to be undertaken during the Decade with due regard to the interests of developing countries, to transmit these proposals to the Intergovernmental Oceanographic Commission, and to begin such activities as soon as practicable;

3. *Urges* Member States to publish as soon as practicable the results of activities which they will have undertaken within the framework of the Decade as part of a long-term co-ordinated programme of scientific research and exploration, and at the same time to communicate these results to the Intergovernmental Oceanographic Commission;

4. *Requests* the Intergovernmental Oceanographic Commission:

(a) To intensify its activities in the scientific field, within its terms of reference and in co-operation with other interested agencies, in particular with regard to co-ordinating a long-term and expanded programme of world-wide exploration of the oceans and their resources of which the Decade will be an element, including international agency programmes, an expanded international exchange of data from national programmes, and international efforts to strengthen the research capabilities of all interested nations with particular regard to the needs of the developing countries;

(b) To report through appropriate channels to the twenty-fourth session of the General Assembly on the progress made in ocean activities undertaken pursuant to this resolution.

26. INTERNATIONAL DECADE OF OCEAN EXPLORATION 1 (May 1968) (A Report by the National Council on Marine Resources and Engineering Development).

The Decade is envisioned as a period of intensified collaborative planning, development of national capabilities, and execution of national and international programs of oceanic research and resource exploration. Knowledge of the ocean and its resources is exceedingly limited. Because of the very size, complexity and variability of the marine environment, scientific investigations of vast scope will be necessary if knowledge of this environment is to increase within a reasonably short interval. At the same time excellence, experience and capabilities in marine science and technology are shared by many nations. Hence, a broad program of ocean exploration can be carried out only through a cooperative effort by many nations. . . .²⁷

The scope of the Decade would include the living and nonliving resources of the entire ocean, but primary emphasis might be upon the mineral resources of all areas of the seabed.²⁸

Little is known about the composition and distribution of marine mineral resources of the seabed. However, these resources are being sought on continental shelves and other areas to meet growing demands for minerals and energy. In the deep ocean, there are sedimentary basins and other geological structures that may contain significant resources. The recent test hole in the Sigsbee Knolls area of the Gulf of Mexico may be an example of this.²⁹ However, the content and geological history of most of these features is unknown. Information regarding regional geological structure is also lacking. Exploration objectives of the Decade have been suggested to include sedimentary basins, ridge systems, major faults and oceanic extensions of continental structures. It is also possible that the objectives will include investigation on substantially a worldwide basis to determine whether there is a clear difference between the geological structure of the continental land masses and the deep ocean floor.

Increased knowledge obtained through the Decade may lead to dis-

27. *Id.* at 1-2.

28. See "November 6 Wiggins Statement."

The Decade does not by any means suggest exploration of every square mile of the world's ocean, nor investigation of every conceivable ocean phenomenon. However, it does imply that collectively the nations of the world can identify the most promising geographical areas and lines of scientific inquiry. INTERNATIONAL DECADE OF OCEAN EXPLORATION, *supra* note 26, at 3.

29. See Taylor, *Exciting Discoveries as Challenger's Adventure Begins*, OCEAN INDUSTRY 35 (October 1968).

coveries of mineral resources and other geological information which would affect the definition of the continental shelf and the type of regime which would prevail in areas beyond the shelf. If the location and extent of mineral resources and the nature of the seabed can be described with some precision, the next step of determining who has what rights may be made on a more rational basis.

In preparing the concept of the Decade, the United States did not attempt to prejudice its scope, the international projects which would develop, nor the international mechanisms for planning and coordination. It was thought that details in this regard should be worked out with other interested nations and international organizations.

With regard to the organization and coordination of the Decade, the United States Government believes that the participating nations should formulate plans for specific projects, seek cooperation with other countries and organizations in these projects, arrange proper methods to finance and carry them out, supervise their own work, and publish the results.³⁰

The concept of the Decade is still in preliminary stages of development, and it is possible that the Decade will encounter difficulties that could lead to failure. It may be difficult to obtain the active participation, including financial contribution, of other nations. A similar problem may exist with regard to various intergovernmental and private scientific organizations. The United States may end up having the greatest share of the financial burden of the Decade, without deriving any more benefit than it would have without the Decade.

A number of problems may be encountered in formulating the details of the Decade. For example, exactly *how* will the Decade contribute to resource development? Would programs under the Decade merely provide general geological and geophysical data to potential exploiters? Or would they provide exact information regarding the location and extent of mineral deposits? Would the information be free to all who desire it, or would it be distributed on some preferential basis? Industrial groups³¹ may be reluctant to participate in the Decade because of a fear of not being able to develop proprietary information, and because of other complications in government-private ventures.

If the Decade is to continue being represented as an international

30. "November 6 Wiggins Statement," at 576-77.

31. See INTERNATIONAL DECADE OF OCEAN EXPLORATION, *supra* note 26, at 7. A great amount of marine scientific and technical ability exists in a number of industrial enterprises, such as the international petroleum companies.

program, sufficient real commitments, including financial ones, should be obtained from other governments and groups to insure that the United States will not be in the boat alone. The Decade should attract participation by all nations, regardless of the size of their current marine operations. This might be done in part through a clear description of the benefits that various nations would receive only through the Decade.

Adequate consideration must be given to the nature of the United States federal and state organizational structures which will be implementing the United States portion of the Decade. Special attention will probably have to be given to the participation of United States private scientific and industrial groups. Participation by such organizations as the National Academy of Sciences, the National Academy of Engineering, and the National Petroleum Council, without more, may not be sufficient.

Regardless of whether or not the specific concept of the Decade is successful, the underlying need still exists. Establishment of sound and effective regulations for the exploitation of marine resources beyond national jurisdiction requires an understanding of the technical and scientific aspects of these resources. It is preferable that at least some degree of scientific and technical understanding precede the rule making. The various scientific and technical studies performed by different bodies of the United Nations would seem to be quite helpful to persons considering the alternative means for international regulation of marine resource exploitation.

It is possible that there will be considerable international discussion about the definition of the outer edge of the continental shelf.³² This discussion could be enlightened by additional information regarding the resource potential of all areas of the sea floor and its subsoil, including areas within and outside of present national jurisdiction. If there is to be some division of the sea floor, what is being divided?

Additional scientific and technical information would also be useful to those considering all aspects of the exploitation of the living resources of the sea. It appears to be generally accepted that food produc-

32. Under Article 13 of the Convention on the Continental Shelf, April 29, 1958, 15 U.S.T. 471, T.I.A.S. No. 5578 (effective June 10, 1964), any party may request its revision at any time after five years have elapsed from the date of effect of the Convention, *i.e.*, any time after June 10, 1969. The U. N. General Assembly must then decide what to do about the request. See Futterman, *A New Law of the Sea Conference?*, THE FUTURE OF THE FISHING INDUSTRY OF THE UNITED STATES 333 (1968).

tion from the sea should be increased. Moreover, there is considerable need for improvement of the present arrangements for the exploitation of international fisheries.³³ But in many areas of the world's oceans, knowledge is inadequate concerning the distribution of fish populations and the general ecology of the region.³⁴ If present international arrangements for the exploitation of living marine resources are to be improved, the improvement should be based upon sound scientific and technical information.

There is also increasing concern about the effects that different uses of the marine environment will have upon each other.³⁵ For example, various representatives of the fishing industry have indicated concern that the development of an ocean mining industry will harm marine life. Others have suggested that ocean mining and similar activities will reduce the recreational potential of the marine environment. The solution of these and other problems of conflicting uses would be greatly assisted by the availability of hydrographic information developed through programs such as the Decade.

The United Nations performs a very useful service to the people of the world in collecting and analyzing scientific and technical information regarding the marine environment. This activity should be encouraged and the concept of the International Decade of Ocean Exploration is a commendable preliminary step.

33. MARINE SCIENCE AFFAIRS, *supra* note 6, at 31-32. See generally D. JOHNSTON, *THE INTERNATIONAL LAW OF OCEAN FISHERIES* (1965); *North Pacific Fisheries Symposium*, 43 WASH. L. REV. 1 (1967).

34. Chapman, *The Theory and Practice of International Fisheries Bodies and Commissions*, 34, *passim*, paper presented at Symposium on International Fisheries Problems, Gulf and Caribbean Fisheries Institute, San Juan, Puerto Rico, November 15, 1967.

35. See, e.g., MARINE SCIENCE AFFAIRS, *supra* note 6, at 62-63; Pritchard, *Fisheries v. The Exploitation of Non-Extractive Resources in the Estuaries*, Contained in TRANSACTIONS OF THE SECOND ANNUAL MARINE TECHNOLOGY SOCIETY CONFERENCE & EXHIBIT, 173 (Supp. 1966). This concern about potentially conflicting uses was evident at the Coastal States Conference on a Multiple Use Approach to Ocean Mining Law, co-sponsored by the state of Oregon and the Ocean Science and Technology Advisory Committee of the National Security Industrial Association, in Portland, Oregon, on December 11-13, 1968.