# The Law of the Sea

## Proceedings of the Seventh Annual Conference of the Law of the Sea Institute University of Rhode Island Kingston, Rhode Island June 26-29, 1972

Lewis M. Alexander, editor

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# Needs and Interests of Developing Countries

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Edited by
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Proceedings of the Seventh Annual Conference of the Law of the Sea Institute, June 26-29, 1972, at the University of Rhode Island, Kingston, Rhode Island.

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Norma H. Hagist
Editorial Assistant

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# THE GENERAL NEEDS AND INTERESTS OF DEVELOPING STATES

## Welcome

*Werner A. Baum, President, University of Rhode Island*

**Monday morning, June 26**

I have gone to many of these meetings, as I am sure you have, where some supposed dignitary has been called upon to deliver formal words of welcome. Usually they are quite meaningless to both parties concerned. Today we have different circumstances, because this is not a sheer formality as far as I am concerned.

I happen to be a meteorologist by background and have had, as all meteorologists do, a long-standing interest in the oceans. I had never fully understood the implications of the law of the sea problem until the last six months or so. About nine or ten months ago the Congress of the United States enacted legislation setting up a National Advisory Committee on Oceans and Atmosphere. The function of that Committee is to make policy recommendations to the President and the Congress with respect to the oceans and the atmosphere, and also to make recommendations to the Secretary of Commerce with respect to the operation of the National Oceanic and Atmospheric Administration, or NOAA.

When the Committee was appointed last fall, somehow Mr. Nixon selected me as one of the approximately 20 people that serve on the Committee. It is a very interesting group, broadly representative of all the aspects of oceans and atmosphere in the United States, ranging from academic meteorologists and oceanographers to representatives of the petroleum industry, to fisheries people, the maritime industry, and so on. We have spent a great deal of time in the last six months addressing ourselves to the law of the sea problem and learning as much as we could about it, and our first annual report is now in its draft stages.

We rapidly came to understand how enormously complex and how enormously important this problem is to which you will be addressing yourselves over the next few days. We have had extensive considerations presented to us from the whole spectrum of the State Department, the fisheries concerns, the scientific concerns and the like. The attempt to come to some national understanding, much less an international understanding, is one of the most difficult problems that I have ever been associated with.

It does not take long to realize that one of the most significant aspects of the international problem is the difference in the postures and concerns of developed countries and developing countries. Therefore, I for one was particularly enthusiastic when I saw the theme of this year's Law of the Sea Institute conference.

The problem to which you are addressing yourselves is a fundamental one which obviously requires a great deal of thought. Hopefully your considerations will result in a narrowing of the gap between these two groups in the next three or four days.

I do hope that your deliberations will be profitable and that the experience will be a pleasant one for you. The University of Rhode Island will do all it can to make you feel at home; please do not hesitate to ask for anything if we can be helpful to you.

# Introductory Remarks

*Francis T. Christy, Jr., Program Chairman, Resources for the Future, Washington, D.C.*

**Monday morning, June 26**

I would like to again welcome all of the participants, particularly those from outside of the United States and those who are here from the United Nations missions and embassies. We are very pleased to have you. We hope that you will find the discussions rewarding, and that you will help to make them rewarding by participating as fully and freely as you can. This is, as you know, a non-governmental conference, and its function is best fulfilled when there is full and free exchange of information in an informal atmosphere.

The theme of this conference is the Needs and Interests of the Developing States. However, I think it is presumptuous for us who live in the United States, and are responsible for this conference, to pretend that we can determine or define the needs and interests of the developing states; our heritage is not common in this sense. We have sought to overcome this lack of omiscience (which I clearly admit to, though some of my compatriots do not) by structuring the conference so that you who come from the developing states will have ample opportunity to express your perceptions of your needs and your interests, and the objectives which you seek to obtain from the use of the seas.

We have adopted several tactics this year to help increase the flow of discussion. One is to reduce the number of papers that are presented, and to limit the time of presentation and comments. Another is to break up into small discussion groups, which we will try this afternoon. This is designed to give everyone a chance to speak, to permit them to do so in small groups, and to help set the stage for some of the discussions that follow during the rest of the conference.

One of the advantages of a non-governmental conference such as this is that we can bring people together who do not ordinarily get together. We have tried to take advantage of this by assigning people from a variety of backgrounds to each of the seven discussion groups, so that each group should have a scattering of people from industry, government, academia, developing countries, developed countries, landlocked, shelf-locked, etc.

This morning's topic is "The General Needs and Interests of the Developing States," and the reason for having such a session as this is to emphasize the point that decisions on the law of the sea are not going to be made solely on national interests in the sea, but rather will be made within the context of the more general problems and conflicts that mark our society. Here I would like to quote some remarks made by Gerard Sullivan last year. He said:

> To put it differently, is it really important to the achievement of the objectives of securing world order whether the ocean problem is solved, or are there larger forces and larger concepts involved such that the capacity and the potential of the oceans is really irrelevant to the achievement of the objective of world order?

While these questions of Jerry's may have a certain deflating effect on our sense of self-importance, I think the effect is salutary and helps put our discussions on the law of the sea in a much better perspective.

# Problems of Developing States and Their Effects on Decisions on Law of the Sea

*Christopher W. Pinto, Legal Adviser, Ministry of Defense and Foreign Affairs, Sri Lanka*

**Monday morning, June 26**

The organizers of our conference were kind enough to invite me to address you this morning on Problems of Developing States and Their Effects on Decisions on the Law of the Sea. I must confess that from the start I was beset with grave difficulties of definition, since states over such a wide range of economic development claim to call themselves "developing." What is a "developing state"? Can one establish objective criteria for determining the "developing" character of a state? We might conceivably think in terms of Gross National Product, interpreted perhaps in the light of a variety of indicia, such as those isolated in recent studies by UNCTAD and ECOSOC directed toward determining the least developed countries. Even if we were to establish such objective criteria, what would be the practical use? Entry, say, into the UN's Group of 77 has never to my knowledge been based on such criteria; it has always been a political decision by the existing membership as to whether or not a particular state was to be considered a "developing state." Nor do we hear of a prospective member being turned away by the Club on the grounds that it did not satisfy this criterion or that. The rule, if there was one, seemed to be that a state is a developing state because it considers itself to be a developing state—and this began to seem like Alice in Wonderland. Such a state may well have chosen to join the Group of 77 because its authority and standing and influence might be used to greater national advantage here, rather than among a group of its true peers.

Another aspect of the matter is that it seems to be, at least up to the present time, once a developing state, always a developing state. It is common knowledge that in recent years many states which claim to come within the category "developing" have accumulated enormous foreign reserves; and yet no one has asked these states why they were still with us in the Group of 77. On the contrary, what we have chosen to call the Group of 77 now actually consists of some 97 states, and the figure shows no sign of a decline.

And then, even if one could arrive at an appropriate working definition of a developing state, it would still remain to investigate whether there was some character of "developingness" that gave rise to particular problems in relation to the law of the sea—another very difficult problem. I decided finally to abandon this kind of analytical approach as being impossible to carry through in the time available to me, and as being of questionable usefulness in terms of practical politics. The result is a paper in very general terms that tries to cover a wide field, and not delve too deeply beneath the surface, even though it might have been more intellectually satisfying to do so.

I would like first, to consider briefly some of the major problems of the developing countries relevant to the law of the sea; next to examine certain attitudes among those countries which influence them in their search for solutions; and finally, to speculate on the positions that will be taken by the developing countries in general in the forthcoming negotiations on the law of the sea.

I would like to make it clear that what I shall say this morning does not necessarily reflect the views and positions of the Government of Sri Lanka.

First and most fundamental of the problems of the developing countries is perhaps the fact that most of them are poorly endowed with natural resources, both on land and in adjacent undersea areas. By some strange quirk of nature, the poorest is often also the most deprived in this respect. Many of the poorest countries are landlocked, communal organization over the centuries having deprived these countries geographically of any access to the sea or its resources. Not until recently has the community sought by legal means to bring relief to those countries through arranging for access and equitable accommodation. Some developing countries have very narrow continental shelves; others, which have been described as "shelf-locked," while they have continental shelves of considerable size, are prevented from making claims to the maximum extent permitted by contemporary international law through the existence of the continental shelf of another state adjacent or opposite to it. Still others have very short coastlines. While the resources of the seabed have been declared to be the common heritage of mankind, these facts are fixed and immutable. The solution must lie in some device to compensate developing states physically deprived in this manner.

A second problem that faces several developing countries is poor progress towards industrialization and a continuing dependence on primary products, including many minerals such as petroleum and copper that could become available in quantity from the deep seabed. Despite efforts made at the international level through such devices as commodity agreements, to establish stable, remunerative and equitable prices for these primary products with a view to increasing the foreign exchange earnings from their export, developing-country producers continue to remain at the mercy of international market forces often capable of manipulation by a handful of powerful industrialized consumer countries. As the latter develop recovery techniques which make them independent of developing-country producers, the outlook for prices of land minerals could be bleak indeed.

A third problem of developing states is the acute lack of technology and equipment and the financial means to purchase them. The flow of technology from the developed to the developing countries is grossly inadequate and the Strategy for the Second Development Decade has noted the existence of a "technological gap." Today marine technology, whether connected with fishing, shipbuilding, weather prediction or exploitation of the deep ocean floor, for the most part remains in the hands of the highly industrialized states of Europe and North America and Japan.

A fourth problem may be seen in its most complex form among developing countries which were the former colonies of an imperial power. Perhaps the worst legacy of colonialism is apathy and the failure of confidence in a colonized people: we may observe this in the absence of enthusiasm, an indolence established and encouraged by the paternalism of the metropolitan state. This is not to say, however, that no progress was made under colonial regimes. On the contrary, much has been achieved in a relatively short space of time. But the paternalistic dominance of centuries which discarded as inept and inefficient the rules and institutions of the original society, led to a distrust of indigenous organizations, especially among the elite under colonial rule. From this social trauma few, if any of us, have yet recovered. The consequences of this historical background, of particular relevance to our subject, are a lack of well-established and smoothly functioning procedures for the collection and evaluation of data and the making of decisions on policy. Where the colonial rulers assumed the responsibility for all major decisions, and particularly decisions affecting foreign policy, an indigenous people tended to become more and more dependent on them for such guidance and eventually to accept foreign institutions and habits of thought in substitution for their own.

Two manifestations of this kind of apathy are particularly relevant: (1) a lack of managerial skills capable of harnessing their meager human resources to achieve maximum results and (2) a lack of professionalism in many Foreign Offices. Often decisions are taken without a properly coordinated examination of the issues involved. Technical advice is either not available, or through ignorance or other motivation is not sought at the proper time. Even if such advice was of a scientific or economic nature, the request for it finds little response in the relevant branches of government that are equally apathetic and lacking in confidence, enthusiasm and foresight. The result is a country nominally free from the restraints and inhibitions imposed on foreign policy by the colonial power, but lacking the total means to deal with an international problem in a dynamic manner through collecting and examining the necessary data, evaluating it and projecting its long-term effects with a view to formulating current polices.

In dealing with these problems the developing countries would be losers all the way but for a single element that dominates their approach to them. It will be the single most important element at the Conference of the Law of the Sea, as indeed it has been at every international conference in recent times.

Emerging from years of colonial exploitation and domination, the developing countries are imbued with a common driving force—brash, unruly, and seemingly inexhaustible: the force of nationalism, national pride, national self-interest. Compelled for centuries to follow where their colonial masters led, they are determined for the future that where the action is, there they are going to be: not to pick up the scraps as before, but to play an active, even decisive role. And the sea, which from the earliest times has been a source of wealth, power and knowledge, and the deep ocean floor, hitherto remote and protected from man's depradations—these offer the latest challenge and the highest prizes of the age. To the developing countries the seabed offered a unique opportunity to augment their meager natural resources for a new area owned in common, with none of the unpleasant implications of "economic aid." Now, through tireless struggle within the United Nations and elsewhere, the developing countries have won for themselves the right to review the whole international law of the sea at a "comprehensive conference" to analyze, question and remold, destroy if

need be, and create a new equitable and rational regime for the world's oceans and the deep ocean floor.

It is true that the nationalism of the developing countries implies a double standard. It seems to say: "We have the right to demand what is best for us, but you, the developed countries, have a duty to subordinate your interests to that of the group." But this is viewed as inevitable, in a community with widely different levels of economic development. The interests of the community will be paramount and decisive only where it is the affluent, industrialized, developed countries that are called upon to make sacrifices. It is a luxury which only they can afford.

Lacking the economic influence and military might associated with the creators of the previous phase of the law of the sea, developing states in this post-colonial period will tend to rely upon numerical strength, and the various forces and devices that tend to maintain that strength as an invincible voting weapon at any conference. Of significance here is the prevailing system of informal group action within the United Nations.

Group action is generally seen at three levels: (1) geographical, (2) economic and (3) political. The composition of a group is, of course, far from homogeneous. This is particularly true of geographical groups which, in some cases, notably that of the Asian Group, contain a wide range of members, both very poor and the very affluent, and their policies in regard to the law of the sea vary very considerably. It is not without good reason that geographical group activity as such in the United Nations has tended in recent years to be restricted to matters such as elections to office.

Particularly worthy of note are specialist groups established on a geographical or regional basis, such as the Asian-African Legal Consultative Committee. While purely of a consultative character, and in no way a political caucus, it would not be going too far to say that the work of the Committee so influenced the actions of its members as to have a direct and significant impact on the United Nations Conference on the Law of Treaties. Its influence on current negotiations on the law of the sea and on decisions at the forthcoming Conference may be expected to be even more effective.

I referred earlier on to a group based on nationally similar levels of economic development, the so-called Group of 77, now counting some 97 members among its ranks. It is probably the most important and effective of the associations of states operating informally within the UN family—this despite the fact that the GNPs of its members vary from less than $50 to more than $3000; that it comprises states with a variety of cultures; and that there are those with enormous mineral wealth on land and off-shore while there are others with nothing at all. After years of activity in the international arena these states seem to share the belief that their combined political strength can secure for them far greater dividends in certain fields than bilateral negotiation. While differences among them are many, similarity of historical backgrounds, situations and objectives seem to have established bonds that have stood the test of arguments and controversy within the group, as well as of attacks from without by those whose own purposes would be served through destruction of this unity.

The cohesiveness of this group is not always appreciated by those outside. In a statement before the Sub-Committee on International Organizations and Movements of the Committee on Foreign Affairs of the United States' House of Representatives on April 11, 1972, on the need for early exploitation of the mineral resources of the deep seabed, a witness found it understandable that certain mineral-exporting countries might want to prevent or at least curtail recovery of such minerals from the deep seabed, but found it more difficult to understand why countries that imported such minerals could not see that it was against the interests of their economies to support curtailment of the supplies they require. With great respect, the relationships that bind the developing countries to one another on the one hand and the factors that separate the developed from the developing, are more complex than are sometimes imagined and may repay much closer examination. It may be a little unrealistic to view these relationships in terms of one particular factor or another, in black or white. Of course, sentiment enters into it, and various kinds of non-reason: but where is this not the case? But apart from this there are several other matters concerning trade relationships and other economic and political factors that are relevant, and these could vary with each case.

My own country for example imports petroleum from, among others, certain developing countries in West Asia. In the event of adverse price trends resulting from recovery of petroleum from the deep seabed by the developed states we would probably give our support to appropriate measures that would stabilize prices for our friends, even though this might mean that we ourselves might thereby be put to greater expense as far as this commodity was concerned. One reason for this would be that these countries import many commodities from us and

this trade is an essential part of our economy. Also, close and friendly relationships with developing countries secure mutual benefit through political initiatives in other spheres as well. But most importantly, would our support for immediate seabed exploitation at the sacrifice of our political allies really help to make more readily available, or more cheaply, the minerals we may require? We believe on the basis of past experience, for example in the case of petroleum, that it would be naive and unrealistic to expect this. If cheaper methods for producing petroleum are found, we may rest assured that some equalizing factor will come along to ensure that the price stays where it most suits those whose money is invested in the oil industry. And this is understandable too.

Of the few avowedly political groups, the two best known are the non-aligned group with members drawn for the most part from the developing countries, and the Socialist group which consists mainly of states from Eastern Europe. The latter, at least to the outside world, has been able to maintain a high degree of cohesion, while the former has rarely met in connection with the law of the sea.

Group decisions are generally not binding on individual members who, on matters of high policy, are free to take their own particular positions based on national interest. However, there is often considerable pressure maintained for loyalty to group decisions. In general, a group tends to be dominated by the relatively economically powerful states within its ranks, and there is often rivalry between two or more states for a kind of leadership within the group. Small states generally find it necessary, much against their will, to maintain close relationships with one or other influential state within the group.

A factor to be reckoned with is that powerful countries with major foreign policy objectives frequently try to take advantage of the divisive trends which never fail to make themselves felt in the ranks of developing countries. Exploitation of these divisive trends has quite frequently been observed in negotiations concerning the law of the sea, with the effect of rendering even more complex an already tangled situation.

There are, of course, other attitudes that will influence the developing countries in approaching issues of the law of the sea. But all may be viewed as aspects or functions of nationalism and national self-interest.

Thus, in dealing with issues of the law of the sea, a developing state will tend to be influenced by its commitment to a particular ideology or social or economic system. For example, whether a state in the national sphere is committed to the protection and promotion of private enterprise or, on the other hand, to state ownership of the means of production, may be expected to have an effect on its initiatives, and the kind of institutional and operational arrangements for exploitation of the seas and the seabed which will receive its support. This does not mean, unfortunately, that socialism at home automatically means friends from the Socialist countries have yet to clarify their views on the equitable sharing of benefits from the seabed, and have until now shown a marked reluctance to consider any payments in respect of seabed exploitation for community sharing on the ground that it is not they who are responsible for the plight of the developing countries.

Another attitude of the developing countries that will have an effect on decisions on the law of the sea is fear for their security. Convinced that to safeguard their fragile economies they must remain secure from being drawn into military conflicts as combatants, or even by virtue of their geographical situation in or near an area of conflict, most developing countries tend to favor extremes when it comes to proposals for the peaceful use of ocean space. The creation of "nuclear free zones" or "peace zones" in and around adjacent marine areas might be expected to receive the unqualified support of the majority of developing countries, as has already been demonstrated in General Assembly resolution 2832 (XXVI), Declaration of the Indian Ocean as a Zone of Peace.

The policy of most developing countries directed at ensuring the speedy emancipation of all countries from colonial rule will also be a factor of some importance. In line with their efforts to combat colonialism in every sphere and to reduce and ultimately eliminate foreign domination over territories and peoples, the developing countries may insist that the principle of exclusive resource jurisdiction over adjacent marine areas should not apply to territories under colonial rule, or should apply under prescribed conditions which ensure that the resources of these areas become available exclusively to the subject peoples concerned.

The point has frequently been made in recent negotiations that isolated islands under colonial domination, frequently uninhabited and many thousands of miles from an administering metropolitan power, should not be recognized as entitled to any zone of exclusive resource jurisdiction. Similar views may be advanced regarding continental areas under colonial rule. A formula which would ensure that the proceeds of exploitation of these marine areas would be channelled to the benefit of any subject peoples

has yet to be developed. Up to the present time the colonial powers have treated this issue with scant interest. It is possible that they feel secure in the thought that this is yet another result of unbridled enthusiasm and idealism on the part of some developing countries that will eventually disappear when confronted with the realities of economic power; that no formal proposal, giving practical expression to the idea, has as yet been made; and that in any event the whole concept of zones of exclusive resource jurisdiction has yet to be adopted.

Finally, many developing countries have given and will give their support to the principle of democratization of processes in the international sphere. It would be difficult in the future to convince the majority of developing countries that the rules of the law of the sea are capable of settlement without the full participation of all states; and that any system other than the "one-state-one-vote" principle should be applied in the decisions of any organization dealing with the sea. From new bodies dealing with the international aspects of fishery management and conservation, to the organs administering the exploration and exploitation of the seabed beyond national jurisdiction, the idea of weighted voting and the veto in any form are likely to be opposed consistently and successfully. It is realized that these devices are the very ones likely to secure the unreserved participation of the developed countries possessing the technology and other resources necessary for the strengthening of such organizations. Some thought has therefore to be given to alternative mechanisms which, while offering adequate guarantees against undue burdens being placed upon the developed countries, will not confer on them positions of preeminence.

The phenomenally accelerated pace of the advancement of technology, and the widening of what has been called the "technological gap" are matters that have had and will continue to have a profound effect on the developing countries' approach to issues of the law of the sea. Together with the emergence of more than 40 countries since 1958, and relatively poor participation in the Geneva Conventions, it is the inexorable march of technology that has given rise to the demand for what amounts to a total review of the law of the sea. This may not have been what was contemplated by Resolution 2750 by which the General Assembly decided to convene a Conference on the Law of the Sea; but one has only to look at the List of Subjects and Issues proposed by a large number of developing states to be convinced of the scope of the present undertaking. Failure to arrest the widening of the technological gap has renewed in the developing countries the realization of their own inadequacy to assess situations and formulate policies on a level comparable with that of the technologically-advanced countries. A concomitant of this realization is the desire among many developing countries to slow progress on formulation of the law of the sea, perhaps in the hope that in time—perhaps next year, or the year after—the decision-makers in these countries would be better equipped to elaborate policies which correspond more directly and constructively to their needs. In its crudest form this may appear in the guise of tactical initiatives in the course of negotiations, leading to protracted arguments on procedural or peripheral issues that have the effect of halting or slowing down any work on the substance of the rules to be discussed.

The sad truth seems to be that for most of us, a year or two is not going to make the slightest difference to our state of preparedness to meet the technologically-advanced countries on their own terms. We may as well join issue now as later. But this feeling of diffidence on the part of the developing countries, compounded by a lack of understanding of and sympathy for the problem on the part of the developed countries, may well affect the timing of the Third Conference on the Law of the Sea.

I would like now to deal with two instances of initiatives by developing countries directly related to the accelerated pace of technological development in the industrialized countries. The first is the so-called "moratorium" resolution of the General Assembly in 1969; the second, denunciation by the Republic of Senegal of two of the 1958 Geneva Conventions.

## THE "MORATORIUM" RESOLUTION (GENERAL ASSEMBLY RESOLUTION 2574D)

In 1969, at the initiative of the developing countries, the General Assembly of the United Nations adopted Resolution 2574D which declared that:

> " . . . pending the establishment of [an] international regime:
> (a) States and persons, physical or juridical, are bound to refrain from all activities of exploitation of the resources of the area of the sea-bed and ocean floor, and the sub-soil thereof, beyond the limits of national jurisdiction;
> (b) no claim to any part of that area or its resources shall be recognised."

This was an expression of the concern of the developing countries that the technologically-advanced countries with a monopoly of seabed technology would proceed to exploit the wealth of the seabed

beyond national jurisdiction in a manner inconsistent with the future international regime, which was conceived of as providing for the equitable sharing of benefits from the seabed among all countries taking into particular consideration the interests and needs of the developing countries. The establishment of a kind of interim regime through repeated action by the handful of countries who alone could exploit the seabed could, it was felt, adversely affect the establishment of a regime on rational and equitable lines.

This so-called moratorium resolution was criticized on a variety of grounds; for example, its vagueness in referring to "the limits of national jurisdiction" without being more specific; the possibility that it might encourage extravagant claims to national jurisdiction in the intervening period; that in the absence of any guarantee of early agreement on a regime, the resolution could have the effect of retarding industrial development and scientific progress; that it was only an expression of a hope or expectation or recommendation on the part of some states, albeit a majority, and therefore had no binding legal force. My country co-sponsored the resolution and has no regrets or doubts about its significance. In our view, it was a solemn expression of the opinion held by a substantial majority of the members of the United Nations that there existed a moral obligation on all countries, developed and developing, to cooperate with one another to achieve a rational and equitable regime for the seabed, and not to take any action in the interim period which would have the effect of prejudicing that endeavor. Apart from this, my delegation felt that it could be of real practical assistance both in preventing the problems that might attend premature exploitation and in building up pressure for early agreement on an international regime.

We saw it as addressed primarily to the private sector in the developed countries who would thus be placed on notice that the rules of exploitation of the deep seabed had not yet been worked out. The private investor, being well-known to be a prudent and cautious individual, with plenty of alternative and lucrative investments on dry land as it were, might be slow thereafter to invest in ventures operating on the deep ocean floor while the law remained in a state of flux.

Industrial experiment and prospecting for the recovery of hard minerals from the deep ocean floor continued, and in 1971 a United States firm announced that it was operating a pilot plant which successfully converted nodules into commercially saleable metals with acceptable efficiency. It also announced that it was prepared to file an immediate claim on the minerals in a specific mid-Pacific mine site. A total of some 19 organizations in five nations were reported last year to be actively engaged in the development of technology associated with the recovery and processing of deep ocean ores.

On November 2, 1971, U.S. Senator Lee Metcalf of Montana introduced a Bill—S. 2801—to provide the United States Secretary of the Interior with authority to promote the conservation and orderly development of the hard mineral resources of the deep seabed, pending adoption of an international regime therefore. The Bill, which provides for the issue of licenses by the Secretary of the Interior, recognizes rights "which shall be exclusive as against all persons subject to the jurisdiction of the United States or of any reciprocating State, to develop the block designated in such license. . . ." At the Spring Session of the Preparatory Committee for the Conference on the Law of the Sea the representative of Chile, supported by several other representatives from developing countries, pointed out that if such provisions became law, they would encourage industrial exploitation inconsistent with the General Assembly's declaration in Resolution 2574D without regard to the current efforts within and outside the Committee to set up an equitable regime for the seabed.

In an interview given by Senator Metcalf and quoted in the *Mining Congress Journal* of January 1972, the Senator is reported to have said:

> There has been no production beyond 200 meters on the U.S. continental margin, largely because of the condition the President inadvertently attached to such mineral development. He said that the right of U.S. leases would be subject to a regime to be agreed upon. That condition was just too much of a risk for the industry to take. I am hopeful that, in light of international development, the "subject-to" condition will be lifted so that necessary development can take place.

It seems to us that the President's "subject-to" condition had correctly reflected the feelings of the majority of states, as expressed in the so called moratorium resolution, and, indeed, in several paragraphs, notably paragraphs 3, 4 and 9 of the Declaration of Principles adopted without dissent by the General Assembly at its XXVth Anniversary Session (Resolution 2749).

Referring to the "so-called moratorium resolution," Senator Metcalf in his interview characterized it as "a mere paper majority motivated by a policy

of confrontation on the part of its sponsors and as such . . . no more than a weak recommendation without binding force of law." Without taking issue on the questions this statement undoubtedly raises, it is obvious that in a "confrontation" of any kind, it is difficult, if not impossible to say who is confronting whom. It is clear that if the Bill becomes law and widespread industrial exploitation of the deep seabed occurs leading to the establishment of an "interim regime," this could not but have the effect of rendering even more complex the negotiations at the forthcoming Conference on the Law of the Sea at all levels and on all subjects and issues.

## DENUNCIATION OF TREATIES BASED ESSENTIALLY ON TECHNOLOGY

Some developing countries, parties to one or more of the four 1958 Geneva Conventions, have found that the restraints placed upon them by their provisions have reached a point at which their economic development is placed in jeopardy. As is well known, all four of the Geneva Conventions contain provisions for revision, but do not provide specifically for denunciation. The Republic of Senegal, however, claimed a right of denunciation under general international law. At the Spring Session of the Preparatory Committee in 1972 the representative of Senegal indicated that: (1) his Government had the right to denounce the Convention on the Territorial Sea and the Contiguous Zone and the Convention on Fishing and Conservation of the Living Resources of the High Seas despite the lack of specific provision for denunciation in those Conventions; and (2) that the Secretary-General of the United Nations as depository of the Conventions was obliged to register his Government's denunciation. Senegal argued that in recent times ships of "rich and powerful industrialised States" had begun to deplete the fishing resources off the coast of Senegal. "While its activities enrich foreigners, they impoverish the Senegalese by destroying local resources." For a long time Senegal had hoped that an international agreement would be concluded which would ensure the necessary protection of coastal states and guarantee the preservation of their fisheries. This had not taken place and denunciation was the only remedy open to Senegal under customary international law.

Article 56 of the Vienna Convention on the Law of Treaties states that a treaty which contains no provision regarding denunciation is not subject to denunciation unless: (1) it is established that the parties intended to admit the possibility of denunciation; or (2) the right of denunciation may be implied by the nature of the treaty. It goes on to require that a party gives not less than 12 months' notice of its intention to denounce. The situation created by Senegal's denunciation is one which should be of particular significance to the developing countries. This is a case where a developing country has felt the direct impact of the widening of the technological gap. Treaties between a technologically-advanced country and a technologically less-developed country which contain balances and safeguards which appear reasonable and equitable in the light of contemporary technology, may soon lose that character as technology in the advanced country proceeds at an accelerated pace and the technological gap between it and its treaty partner continues to widen. It would seem to be unreasonable and unjust in such circumstances to hold the less-developed country to the letter of its treaty obligations and deny it the power to denounce. It would seem that where such treaties are concerned, i.e. treaties founded on contemporary technology, the developing countries might well seek recognition of the principle that a right of denunciation must in all cases be implied if the treaty itself does not expressly contemplate such action.

Alternatively, relief would have to be sought in application of the doctrine of *rebus sic stantibus*, on the ground that contemporary technological capability always forms part of the essential basis of the consent of the parties to be bound by such treaties.

As to the general question of the effect on the 1958 Conventions of the emergence of new treaties dealing with the same subject matter, no body of opinion has crystallized among the developing countries. Some—and particularly those not parties to the 1958 Conventions—seem content to play down the issue as one that can readily be settled by the application of existing treaty law principles. Apart from the obvious untidiness of this approach, it assumes to an unwarranted extent the clarity of existing provisions of treaty law as reflected, for example, in the Vienna Convention on the Law of Treaties.

It is not always possible or useful to relate each problem to which I have referred to a specific issue of the law of the sea and speculate on how it would affect decisions on it. The problems of the developing countries compound one another and will affect issues of the law of the sea in greater or lesser degree by themselves or in combination. I would like in conclusion to review briefly some of the main issues of the law of the sea and against the background of our earlier discussion make some suggestions as to the positions the developing countries might be expected to take in regard to them.

## SOME MAIN ISSUES AND THE POSITIONS OF DEVELOPING COUNTRIES

### Outer Limit of the Territorial Sea

As is well known, the two previous international conferences sponsored by the United Nations in 1958 and 1960 failed to reach agreement on the maximum breadth of the territorial sea. It always seems as though the issue of the breadth of the territorial sea inevitably came to be linked in the discussion with the issue of exclusive or preferential fishery rights, giving rise to such proposals as the six-mile territorial sea plus six-mile fishery zone. The trend among the developing countries is to treat the issue of territorial limits separately from that of resource jurisdiction which, for them, is all important. It is widely believed that there is currently no internationally accepted maximum limit of the breadth of a state's territorial sea, and that each state retains the right to declare such limit unilaterally. However, it cannot be denied that there is an international trend toward acceptance of 12 miles as the maximum breadth of the territorial sea, as shown by the fact that more than some 45 countries claim 12-mile territorial seas. Many more claim broader territorial areas. It is likely that the developing countries would accept the outer limit of 12 miles for the territorial sea, provided the separate question of adequate exclusive resource jurisdiction is satisfactorily determined. Consequently, it is likely that the developing countries will not wish to agree on the maximum breadth of the territorial sea until after the limits of resource jurisdiction have been agreed.

### Proposed Recognition of Zones of Exclusive Resource Jurisdiction

At the present time a coastal state's claim to exclusive resource jurisdiction beyond its territorial sea is not universally acknowledged. Beyond the territorial sea of a coastal state lie the "high seas," which are in the words of Article 2 of the Convention on the High Seas "open to all nations" and no state may validly purport to subject any part of them to its sovereignty. Article 2 further states that the "Freedom" of the high seas comprises, *inter alia*, (1) freedom of navigation; (2) freedom of fishing; (3) freedom to lay submarine cables and pipe-lines; and (4) freedom to fly over the high seas. Other freedoms are contemplated by the Article, but not specified. The developing countries have taken the view that the "freedom" aspect of the high seas confers an undue advantage on states with the technological and financial capacity to exploit that "freedom." Consequently there has developed a trend toward the assertion of a coastal state's right to declare a zone of exclusive resource jurisdiction beyond its territorial sea. The resources of that zone would be reserved exclusively to the coastal state which would also be empowered to prohibit or control access to that zone by others.

For example, a state might claim in addition to a 12-mile territorial sea, the exclusive right to exploit the resources, living or non-living (i.e. minerals), up to a distance of, say, 200 miles from its coast. Having done so, if it does not have the technological capacity for direct exploitation, it may employ contractors, enter into joint ventures with foreign states or entities or make other bilateral arrangements for exploitation of its exclusive zone. It would also assume the power to regulate resource exploitation activities and take conservation measures within that zone, as well as the right to assume jurisdiction over offenders for the purpose of punishing contravention of its rules.

The principal areas in which such a zone is contemplated are (a) adjacent waters (fisheries) and (b) adjacent under-sea areas (offshore mineral resources).

#### *Adjacent Waters (Fisheries)*

The developing countries may be expected to support the right of a coastal state to claim exclusive jurisdiction over an area beyond its territorial sea for fishery and fishery conservation purposes. The outer limit of this area might be measured from the baseline from which the territorial sea is measured, but its maximum breadth remains to be determined. A figure of 200 miles has been mentioned in this connection. Any historic rights of neighboring states to fish within the exclusive zone of a coastal state should, it is felt, be safeguarded. The basis of such rights is not merely prescription, but the immemorial economic dependence of a substantial part of the population of the neighboring state upon fishing in such a zone.

#### *Adjacent Under-sea Areas (Offshore Mineral Resources)*

The developing countries may be expected to support the right of a coastal state to claim exclusive jurisdiction over an adequate area of the seabed and sub-soil adjacent to its territory beyond the limit of its territorial sea for the purpose of exploration and exploitation of their resources. As is well known, there are several competing methods that might be

used to measure such a zone. For many countries, particularly those who are parties to the Convention on the Continental Shelf, the limit will be the 200-meter isobath or a greater depth which admits of exploitation. Among the developing countries there is, however, a growing trend toward acceptance of a straight distance limit based roughly on the widest shelf at 200 meters. A figure of 200 miles has been mentioned in this connection.

### Areas Beyond National Jurisdiction (a) Waters (Fisheries)

As far as management of fisheries beyond national jurisdiction is concerned, current trends among developing countries would seem to favor regional arrangements providing for institutions empowered to allocate the catch and establish conservation rules based on scientific criteria. It has been suggested by some that ideally, membership of such organizations might be limited to states of the region concerned. However, if membership is open to all states which fish in the area, then measures should be taken to ensure that such organizations are not dominated by the major fishing powers. It is also urged that in such areas beyond national jurisdiction, coastal states that are developing countries and are unable to maintain distant-water fishing fleets should be given special privileges.

### Areas Beyond National Jurisdiction (b) Seabed and Ocean Floor

The basic principles governing the seabed beyond national jurisdiction were incorporated in Resolution 2749, adopted by the General Assembly without a dissenting vote, at its XXVth Anniversary Session. The developing countries may be expected to press for an international agreement which would give effect to the terms of that resolution. The international agreement should be open to all states and should be subscribed by a substantial number of states before it enters into force. The agreement should establish international machinery with jurisdiction adequate to give effect to the Convention. The machinery should have comprehensive powers, including the power—(a) to explore and exploit the international seabed on its own, or in partnership or joint ventures with consortia of countries or corporations; (b) to license exploitation by others; (c) to ensure the equitable sharing of all benefits derived from the seabed among countries on the basis of economic need; (d) to minimize any adverse economic effects caused by the fluctuation of prices of raw materials resulting from the exploitation and marketing of minerals extracted from the international area of the seabed and ocean floor; (e) to promote scientific and technical training of personnel from developing countries; and (f) to promote the rapid transfer of technology to the developing countries.

The structure of the machinery might comprise the following elements: (a) *a plenary organ* of the entire membership; (b) *an executive council* of limited composition based on equitable geographical representation and perhaps on political alignments and degree of technological advancement; (c) *a tribunal* with jurisdiction (whether or not compulsory is yet to be determined) over legal disputes arising out of the agreement; and (d) *a Secretariat.*

The principle of one-state-one-vote should apply to all decisions and there should be no system of weighted voting or veto.

The machinery should, as far as possible in its day-to-day operations, be guided only by essential scientific, technological, economic and financial criteria adopted in advance by the plenary organ. Considerations of efficiency and sound business aimed at the greatest financial return (for distribution among developing countries) ought to be decisive in operational matters.

Most controversial of the powers of the international machinery has been its power to explore and exploit the international seabed on its own. It has been suggested, for example, that the machinery would be unable to secure the funds, equipment and technology, including expertise, necessary to carry out exploitation of the areas placed under its jurisdiction; that none of the technologically-advanced countries from whose private sector these resources would have to be drawn, would be able or willing to transfer them to the organization; that the record of operational efficiency of such international organizations is not such as to inspire confidence in the success of a giant venture of this kind; that the organization would compete with national industry, and in doing so enjoy unfair advantages in such matters as the allocation of blocks for exploitation, access to industrial information etc.; that the interests of the smaller developing countries would be better served by a system of licensing whereby they could individually contract for exploitation of areas allocated to them. Thus far, none of the arguments made with a view to withholding this power from the organization have proved convincing to the developing countries. They point out, in the first place, that conferment of this power is most logical in relation to an organization acting on behalf of all states as

trustee for an area that is the common heritage of mankind; that the power to exploit would not be exercised initially, and would be exercised at all only if and when the management were to decide that such exploitation was technologically, financially and from a business point of view a sound proposition; that exploitation by the organization would exist side by side with the licensing system.

Another power which the developing countries feel should be conferred on the machinery that is likely to cause controversy is that of taking action to minimize adverse economic effects caused by the fluctuation of prices of raw materials resulting from the exploitation and marketing of minerals extracted from the international area of the seabed. It may be noted in this connection that to give the organization a role to play in minimizing such adverse economic effects does not necessarily mean that it should itself undertake action alone. It might, on the contrary, seek to achieve these results through collaboration with existing arrangements and organizations already active in this field so as to take advantage of their experience and technical expertise.

Some developing countries consider that the only certain way to avoid price fluctuation would be to insist that all exploitation of the international seabed be conducted by the organization itself in joint ventures with states or other entities, where the organization would have control and the terms of each transaction would be separately negotiated and agreed.

### Preservation of the Marine Environment

The preservation of the human environment (including the marine environment) from further degradation is a problem that has been brought before the international community by the highly industrialized developed countries. The developing countries regard it as a problem for which those very countries, through commercial expediency and industrial neglect, are largely responsible, and which affects the highly industrialized areas far more than those of most developing countries. While the developed countries are striving to secure international acceptance of rules and standards to combat the menace of pollution, the developing countries may be expected to be more concerned to prevent any unwarranted increase they may cause in their industrial investment and which may even impede their programs of industrialization. In general, the developing countries' position on these issues might be based on the following:

(1) Degradation of the human environment is a "social cost" for which the industrialized developed countries are mainly responsible and the burden of which must be borne principally by them. The developing countries may not be able to prevent this expense being added to the cost of a finished product which they would have to buy from the developed country. The developing countries may contribute to global environmental protection measures to the extent permitted or required by their own economic development plans.

(2) An environment relatively free of pollution is a natural resource which a developing country may exploit, e.g. through offering conditions for industrial investment that impose relatively liberal environmental protection rules and standards and, therefore, offer the investor substantial financial advantages.

(3) Problems of pollution of the environment, including the marine environment, are inter-related. Piecemeal measures for pollution control (e.g. the regulation of ocean dumping on a regional basis) should be approached with caution unless satisfactory international controls that safeguard the interests of coastal states, and especially developing coastal states, can be worked out.

### Special Rights of Coastal States

Developing countries generally support the position that coastal states have a special interest in safeguarding the waters and submarine areas adjacent to their coasts, as well as in the resources of those areas. As this special interest entails special responsibilities, coastal states have special rights as well in relation to those areas and their resources. In particular, developing states may be expected to seek recognition of the right of a coastal state to take such measures as may be necessary to prevent, mitigate or eliminate grave or imminent danger to its coastline or related interests from pollution or from other hazardous effects resulting from or caused by any activities in the area.

### Scientific Research in the Oceans

The developed countries, notably the Soviet Union and the United States, have argued repeatedly that scientific research (as opposed to "industrial research," i.e. research or prospecting with a view to industrial exploitation) should be "free" and unrestricted. On the other hand, the developing countries have urged that:

(1) All research should be subject to certain rules, e.g. rules that would safeguard the security of coastal states, prevent pollution, etc.

(2) It is difficult to distinguish between "scientific research" and "industrial research," but an attempt may be made to do so on some satisfactory basis at the Conference with a view to imposing specific restrictions on "industrial" research or "prospecting."

(3) Where scientific research takes place in the vicinity of a developing coastal state the latter should be permitted to participate in that research and should be kept fully informed of all scientific findings.

### Transfer of Marine Technology to the Developing Countries

All developing countries have pointed out that full and free access to marine technology must be available to them if they are to derive substantial benefits from the rights that are sought to be given to them in the marine environment. Consequently, they may be expected to urge that in any future international arrangements governing the Law of the Sea, provision should be made in as explicit terms as possible for the rapid transfer of all types of marine technology and scientific data from the developed to the developing countries.

## CONCLUSION

The central and all-pervasive struggle of the developing countries is to bring the quality of life of their people even to a minimal standard. They have faced the bitter truth that they lack one or both of two essential elements necessary to achieve that goal: natural resources and technology. The developing countries won a significant victory in 1970 with the adoption of the Declaration of Principles Governing the Sea-bed and the Ocean Floor and the Sub-soil thereof Beyond the Limits of National Jurisdiction which declared that area and its resources to be the common heritage of mankind. But all the natural resources in the world are useless without the technology that will enable their exploitation with acceptable efficiency.

Heirs now to a fortune that they lack the means to claim, dismayed by the widening gap of technological competence, the developing countries are determined to safeguard their hard-won rights to a portion of the world's wealth. If they cannot benefit from their share now, then they want to save it until they possess the technological capacity to do so. They do not want to lose their inheritance in the meantime to those who have the means to harvest these riches immediately. They do not see the need for it to go toward the maintenance of standards of living in other parts of the world which far exceed their own. They do not want to have urged upon them, time and time again, the inadequacies of their social, economic and administrative systems, and how much better they all would be if they were to choose this political allegiance or that economic or social system.

There is no government among us so cynical and so corrupt that it does not strive genuinely, but within the limits imposed by history and social forces, to achieve the best for its people. Negotiators on the law of the sea, whether from the developed or the developing countries, will be doing just that in the months ahead. The efforts to reconcile the demands of the developed with those of the developing countries, and individual or group interests with those of the community, will take all the statesmanship of which our representatives are capable. Nothing will be achieved by treating the developing countries as incompetent, feckless eternal mendicants; as little will be achieved by treating the developed countries as power-hungry imperialists whose every action must arouse suspician. For let us make no mistake, the one group can no longer ignore the other, and it will take both to make the system—any system—work. It is only through goodwill and patience on both sides and a genuine understanding of each other's problems that we can hope to succeed.

# Remarks

*Maureen Franssen, Scripps Institution of Oceanography, La Jolla, California*

**Monday morning, June 26**

Today, looking around, I am very happy to see that there are many scholars from the developing countries participating at this conference. On this day it is very appropriate that so many members of the developing countries are playing a leading role, and many of the participants, as we shall be witnessing, are not going to be just listless observers, but are going to be active participants.

At the 1958 Geneva Conference on the Law of the Sea, one notes extreme caution on the part of many delegates of the newly-independent countries, who were at that time wary of just blindly following the lead of their former colonial rulers. Even in 1958, while several delegates challenged the law of the sea, especially the limits of the territorial seas as laid down by the maritime powers and former colonial rulers, there were some delegates who were undecided, since their countries had just regained their independence.

At that time a few of these had, with mixed feelings, gone along with the "law" as then laid down, and understood by the maritime powers, but many of the newly-independent and developing countries had refused to sign and ratify the four Geneva Conventions on the freedom of the law of the sea. Some had signed and ratified one or two of the Conventions but not all four. Moreover, at this conference in 1958, if one were to count the number of countries represented, there were only about five African nations. Yet at this conference and the conference which followed in 1960, conventions were passed, signed and ratified by a few nations as compared with the large number of countries in the family of nations today.

The conventions and customs accepted as international law by some nations, mainly developed countries, have been rejected or only partially accepted by many from the developing countries. So to speak of the law of the sea as the law presently stands, while in a state of flux, would be highly unrealistic. One has to take into account the rapid changes that have taken place in the family of nations since the two Geneva Conferences on the Law of the Sea.

In the past, as I mentioned earlier, the law of the sea has been primarily dictated and laid down by the maritime powers. As students of international law would know all too well, in the late 15th Century, the Pope had divided the oceans between Spain and Portugal. In response to this, there were some countries who wanted freedom of trade. Holland was one of these countries. So it was the Dutch scholar, Grotius, the father of international law, who developed the concept of the *Mare Liberum,* the freedom of the seas. This was followed by Britain, and since then the maritime powers have laid down the law of the sea.

But after the Second World War, a new pattern emerged as one after another of the former colonies regained its independence and took its rightful place in the world. These developing countries, from Asia, Africa and Latin America, also want what the maritime nations have wanted, but this time they have their own views and desires to fit the needs of the developing world. They are not prepared to just accept what the maritime powers have laid down.

The developing countries are most interested in receiving a fair share of the ocean resources. The oceans have gradually become an arena for economic rivalry as nations develop the technological means for exploiting the oceans and seabeds. Naturally, at this stage, when the developing countries are not at a par with the technologically advanced nations, they fear that once more the rich and technologically developed countries, possessing the valuable know-how, will be able to explore and exploit the oceans' resources before they can get into the act.

In terms of minerals, only a very few who possess technology and capital to exploit offshore oil, and only the largest multinational corporations, can exploit the manganese nodules on the seabeds. So the developing countries, who do not have this, feel left out. Although some developing countries may control up to 200 nautical miles from shore, they do not want to have just royalties and taxes. What many developing countries want is to have a full and equal partnership with the developed maritime nations in exploring and exploiting these resources. One can

see this view expressed very clearly at the UNCTAD and the OPEC conferences, where the developing countries have been demanding full participation; for the only way to bridge the technological gap between the "haves" and the "have-nots" is for the "have-nots" to meaningfully and actively participate.

Now, to a lesser extent this is also perhaps true for fisheries. Though many developing countries presently have been developing considerable fishing fleets, most of these are still confined to their own coastal waters. On the other hand, the maritime powers, many of which have sophisticated, long-distance fleets, can move from one area to another with relative ease, and this way they are able to exploit certain valuable stocks. So again, many developing countries fear that these maritime powers will over-fish or deplete valuable resources in what the former consider their coastal waters at the expense of the developing countries.

These fears of the developing countries are not all ill-founded, as some may think. There exist many genuine fears of being once again trampled and trod on as in the past, when their land resources had been exploited. Many fisheries scientists probably may not agree with the policy-makers in the developing countries on the management of living resources in the seas, but with a background of colonial exploitation, this is the type of reaction they may come across.

Again, the developing countries want a fair share in the catch, so it is therefore not so much for the sake of conservation that many developing countries want to extend their maritime zones, or zones of maritime sovereignty, whichever term you would like to use.

Now getting back to the theme, what are the positive needs and interests of developing countries? What do the developing countries really want?

There is no unanimity among developing countries on all the issues, and one can ask why not? Well, there are differences among the developing countries just as there are among the developed countries. The term "developing" itself is a misnomer, if it implies that all developing countries are at the same stage and level of growth. For example, there are the most, the medium, the less and the least-developing countries, using economic terms.

Again, as has been explained, some are land-locked, some shelf-locked, some have extensive continental shelves, some possess rich fisheries resources, others rich mineral deposits, while some have neither. And this can go on and on.

However, what all developing countries would like is a larger share of the oceans' resources. The developed countries often want, and speak of, "freedom of the high seas." But what does this freedom mean if the developing countries can not actually participate actively because of lack of capital, technology and trained manpower? It is just like the lofty phrase often used that "all are born equal." But are all born equal? There are some parts of this phrase which I do agree with, but I don't agree with all of it, because not all are born equal. There are those who are born in rich hospitals, while others are born in mud huts. How are all born equal when some have been maimed; some born blind, while others can see? Opportunities, too, are not equal.

Again the question: what do developing countries want? Some want extensive maritime zones to protect the resources within those zones for the economic development of their countries. Others want to see a narrow maritime zone and the areas beyond national sovereignty to be controlled by an international organization. The latter then would control the exploration and exploitation of resources, and through their voting power, the developing countries would play a significant role in exploiting one of man's last frontiers on earth, as yet largely untapped.

Whatever the outcome of the forthcoming Law of the Sea Conference, whether it be held in 1973 or later, the need for international cooperation is very apparent. No single nation can unilaterally manage the living resources of the ocean. Unrestricted mineral exploitation may have negative effects on the trade balances of the developing countries. Transportation and overflight should be regulated on an international scale.

Lastly, as one is aware from the Stockholm Conference, marine pollution can only be monitored and possibly managed only through international cooperation.

# The General Needs and Interests of Developing States

*Jorge A. Vargas, National Council for Science and Technology, Mexico City*

**Monday morning, June 26**

My remarks are going to be brief, and much more modest than the general title: "The General Needs and Interests of the Developing States." I am going to refer particularly to the needs and interests of developing states in Latin America, having divided this presentation into two different parts: the first part is a general introduction, and the second one a more detailed analysis of certain needs and interests in Latin America.

In a most general statement, I think that the needs and interests of the countries in Latin America could be considered in harmony with the general philosophy of "participation and development." Latin America, in this respect, has been a leading force particularly concerning law of the sea matters. Many notions, many concepts included in present contemporary international law of the sea, I think, have an origin in Latin American sources, such as the notion of the epi-continental sea, the preferential rights of the coastal states, the 200 miles, and, more recently, the concept of the "Patrimonial Sea."

Also, I would like to recall that the notion of the continental shelf, the 200-meter depth, was officially adopted for the first time during the Specialized Latin American Conference held in the Dominican Republic in 1956.

With respect to what I just called the philosophy of participation and development, I would like to say a few words concerning the meaning of participation and development.

The concept of participation, I think, was already formulated by the excellent presentation made by Dr. Pinto, in the sense that it is a process which demands a fuller participation in all the negotiating arenas dealing with the law of the sea. All developing countries are validly claiming to obtain a more decisive and constructive participation in all decision-making processes connected with the oceans.

It is the impression of most developing countries that existing international law of the sea does not respond to the needs, to the interests and to the expectations of all those emerging countries. Rather, international law of the sea is considered to be the product of major maritime powers in the past. It is regarded as the result of historical considerations which have been already outdated by the progress of present science and technology.

With respect to the philosophy of development, I could briefly trace back its major origins to several happenings in Latin America, such as the Declaration of Santiago in 1952. This eloquent document contained what has become the flag of most developing countries at this moment, at least within the regional context of Latin America; namely, the preoccupation of the coastal state for the well-being of its inhabitants, particularly those directly connected with the oceans, those living on the shorelines.

This declaration also embodied the preoccupation, the concern of the coastal state for the conservation and proper utilization of all marine resources, in particular the so-called "flow resources." So, they have been trying to establish and formulate the most adequate, rational policies for the optimum utilization of these resources, avoiding all kinds of extreme negative effects, especially in the living resources, such as the anchovettas and the tuna fish.

Finally, the same document and philosophy contains the reaffirmation of the sovereignty of the coastal states over all kinds of natural resources upon the land, in the aquatic environment, in the seabed and ocean floor, including the continental shelf, and in the subsoil.

Now I would like to make some remarks concerning what I call a sort of a summary of the general needs and interests of developing countries in Latin America. I have divided them into two large categories: on the one hand, domestic needs, and on the other, international interests.

Domestic needs, it is my impression, is one of the most important elements in all developing countries. That means that emphasis should be directed to embrace three major areas in all these developing countries.

In the first place is education. Education should be understood at all levels, starting with the rather modest education of the coastal population to learn how to best utilize the living resources from the sea, to the level of sophisticated scientific research conducted at well-equipped laboratories.

In most developing countries in Latin America, which have abundant living resources, it is a well-known fact that their inhabitants are not used to eating seafood, so the protein is not going to the coastal populations. Therefore, the proper education of the coastal populations to utilize this resource directly or indirectly, by exportation or industrialization, et cetera, should be seriously undertaken.

At a higher level of education, this same idea applies to the formation of scientific, technical and industrial infrastructures connected with the oceans. Most developing countries lack the technical and human capabilities to know and to quantify the resources existing in their adjacent oceans.

In the second place, facts regarding exploration of the oceans and coordination of marine activities should also be the concern of all developing countries. In this respect, I think each country is in the process of determining the national priorities regarding the oceans and the marine resources; each developing country has already started an inventory of the different marine resources, in conjunction with a study of the polluted areas in coastal waters.

Incidentally, in Latin America, most of the population is found along the coastline of the Latin American continent. Thus, because of the large concentration of human settlements along the coastlines, there are many areas which are highly polluted. Consequently, I think some of the problems connected with marine pollution should be studied and carefully analyzed by all the developing countries.

All aspects regarding maritime transportation should also be considered within the transportation and highway systems of all the different countries involved. I would suggest that updating the domestic legal frameworks which regulate the oceans and marine activities should be considered as a most necessary and almost imperative task.

Among developing countries, and particularly among the developing countries in Latin America, many of the legal provisions established in connection with the oceans to regulate and control fishing activities, scientific investigation in the marine environment, access to ports, port authorities, et cetera, are so old, that some at least could be considered obsolete. Consequently, I would foresee an intense study on the part of all these developing countries toward updating all the legal frameworks established with respect to the oceans. Needless to say that domestic structures such as the National Council for Science and Technology (CONACYT) in Mexico, or the Ministries of Foreign Affairs in other countries, as well as regional organizations such as the OAS, ECLA, et cetera, and most of all international organizations such as the UN, are called upon to perform a most important task.

I would just like to mention very briefly that regarding regional organizations, the emphasis unfortunately has not been directed towards the proper utilization of the ocean's resources. Therefore, it is expected that in the near future all these domestic and transnational organizations will tend to emphasize those functions, objectives and activities connected with the ocean's wealth.

Finally, regarding the international interests, I have divided them into three large groups, or aspects: No. 1, solidarity, No. 2, political and economic plurality, and No. 3, economic orientation.

Concerning solidarity, it has already been mentioned here that all the developing countries are getting together and that they are forming more solid groups which have a higher level of interaction and a higher degree of sophistication in the use and selection of diplomatic strategies and negotiating techniques. This principle of solidarity is going to constitute, I believe, one of the clearest characteristics of the international behavior of developing countries in the forthcoming Conference on the Law of the Sea, as well as in many other international arenas.

Concerning the political and economic plurality, this could be easily understood if it is put in terms of regionalization. Efforts have been made in different areas to identify and articulate the interests of a group of nations which might be considered to pertain geographically, politically or economically to a certain region. I think this idea applies to certain developing countries, and very definitely to certain Latin American countries. So it may be expected to see a proliferation of systems and sub-systems grouping all those states considered to have similar characteristics regarding the elements that I have just mentioned.

To be more precise, I think for instance in Latin America, the CEP countries since 1952, or even before that, in 1947, have been articulating certain policies which we feel are directly connected with the peculiar characteristics of those countries. A few days ago a meeting was concluded in Santo Domingo, Dominican Republic, of all the Caribbean countries. They feel that given the peculiar characteristics of this area, they validly claim to develop a set of rules and legal principles applicable to this particular area.

One of the principles contained in the Declaration of Santo Domingo, signed on June 9, 1972, was the notion of the "Patrimonial Sea," which is becoming a very important concept for all Latin American countries. This notion is understood as an economic zone; it is considered as a resource area. It might be

interpreted as a jurisdictional maritime claim by the coastal states to embrace all existing resources up to a maximum limit of 200 nautical miles.

However, the Patrimonial Sea should not be confused with the Territorial Sea. In the Declaration of Santo Domingo, the territorial sea was defined as the area adjacent to the coastal state up to a limit of 12 nautical miles, and it is considered to be the ocean area in which the coastal state exercises the totality of the competences; it is traditionally construed as the area upon which the coastal state exercises its sovereignty.

Finally, I just would like to mention that given this type of regional fragmentation, given this type of analysis of the peculiar characteristics of the different areas such as the Caribbean countries, or the CEP countries in the West Coast of South America, I believe it would not be unthinkable to consider the creation of a set of systematic principles to be applied in the Gulf of Mexico as a region.

Apparently, there are several factors which might be pointing in this direction. I would like to mention a few of them, such as the common utilization of the resources in that area, especially mineral resources and all the problems connected with that when they adversely affect the marine environment; the pattern of currents existing in that area; and the geomorphological characteristics of the Gulf of Mexico; which all might be suggesting the possibility of undertaking joint studies to cover all scientific and oceanographic aspects relating to the Gulf of Mexico.

Maritime transportation should also be included, taking into account all the numerous and heavily transited sea lanes existing in this area, and the possible danger to the coastal states when a major catastrophe connected with oil pollution might develop.

Therefore, I would suggest that certain joint or collective programs studying marine aspects of the Gulf of Mexico, as well as considering the feasibility of establishing a contingency plan to cope with adverse situations in the areas, might very well be a necessity in the near future.

Finally, I would like to reaffirm what is well known: that all developing countries have put a very heavy emphasis in the economic elements of the oceans. There is indeed an economic orientation. I have already mentioned the adequate and most rational utilization of the marine resources; I have referred to economic zones or resource areas, or if you want to put it in Latin American terms, to the Patrimonial Sea notion. This notion, whereby the coastal state exercises sovereignty over all existing resources in this area, is going to constitute one of the leading policies followed by all developing countries in the 1973 Conference of the Law of the Sea.

One of the final resolutions approved at the Santo Domingo Conference on the Law of the Sea, attended by 15 Caribbean countries, convokes a regional meeting of Latin American countries before the UN-convoked Law of the Sea Conference. It is highly likely that such a regional conference might take place in Mexico City, within the first three months of 1973, probably during the second half of February.

## Remarks

*Edward A. Miles, Graduate School of International Studies, University of Denver (Colorado)*

**Monday morning, June 26**

I thought I would spend my time this morning talking a little bit about technical assistance, but I must confess that I do so from a certain amount of animus.

The sources of this animus are two-fold. In the first place, last fall I had to sit through four days of discussion in the IOC Seventh Assembly on Technical Assistance, and I think the most charitable thing that could be said about the level of debate was that it was ridiculous.

The second source of animus is what appears to me to be a persistent unwillingness in certain portions of the United States Government to appreciate the significance of technical assistance in the Law

of the Sea negotiations. I am referring here primarily to the White House, to the Office of Management and Budget, and to the Congress.

If one looks at the kind of demands that have been made by developing countries since 1967, it seems to me that there are three substantive types. The first is a demand for wealth, the second a demand for knowledge, and the third a demand for capabilities, although this has usually been phrased time and again, and this morning, in terms of participation and control. But what is actually implied when people demand participation are basically skills.

What have been the major instrumentalities employed in the pursuit of these demands? Again, from my reading of the sequence of events, they have been primarily of two types; the first are claims to extend national jurisdiction to exert authority over portions of the ocean larger than that which was previously controlled. The second instrumentality is to create mechanisms of international control to achieve what is hoped to be a more equitable distribution of benefits in areas of the oceans that are outside of national jurisdictions.

But I find these strategies deficient because they relate only to the issue of the distribution of wealth. They therefore, by themselves, do not carry any teeth. One cannot distribute wealth if one does not have the capabilities to do so. I am also a little disturbed by the lack of attention developing countries give to what I consider the crucial parts of the strategy, those relating to the acquisition of knowledge and the acquisition of capabilities.

How then does one acquire knowledge and capability? Usually in the ocean science community, programs have been framed within the context of technical assistance, training and education in the marine sciences, and in fishery development. The case of fishery development I will leave alone, and what I have to say will relate primarily to technical assistance in marine sciences.

Within the IOC, discussions of this problem show no awareness of the analytic questions involved. There is a necessity of dealing first with the theoretical relationships between technical assistance, education and training in the marine sciences, general problems of science policy at the domestic level and strategies of economic development. There has, however, been too much emphasis on specific projects, usually formulated in an ad hoc manner, which do not fit together; they are not additive, they proceed from no theoretical knowledge whatsoever, and they therefore, in my view, are generally futile.

The problem is also accentuated by a great variety of special circumstances; this has been touched on several times this morning, but there are some commonalities going beyond the area of ocean science, which are merely sub-sets of problems encountered in creating national science policy.

What are some of the ingredients that I think ought to go into planning in technical assistance in marine sciences? Here I am going to use some of the work of my colleague Giulio Pontecorvo, because we find we share perspectives on this problem, even though none of our colleagues seems to do so.

The first problem is one of differing time horizons, and as Giulio formulates it, the general hypothesis is that the more developed the country the more that country can consider alternative courses of action and patterns of resource use; the implication is that the more that country can defer emphasis on short-run returns. This is not the case for developing countries. There the major emphasis has to be on short-run returns; but in planning for short-run benefits, one must take into account the long-run consequences of development flowing from some coordinated national science policy as well as some notion of how science policy fits into strategies of economic development. There are then three levels of analysis which must be attacked simultaneously, and this has never been done. We do not even know what the total global picture is on technical assistance, bilaterally, multilaterally and within intergovernmental or non-governmental organizations.

One of the major short-run aims which appears to me to be particularly important is the capacity of the program to create an on-going, in-house technical capacity which can exist as a going concern. But there are difficulties in the supply of personnel, and these difficulties must be resolved, not only from the point of view of marine science, but from a general educational and manpower policy that will reflect the situation of a particular country and will attempt to decide on some rational basis between competing allocations of funds to be spent on marine science as opposed to agriculture, as opposed to other parts of industry, et cetera.

In addition to the theoretical problem which I have just been touching on very briefly, there is an additional problem of the structure within which technical assistance programs are handled at the IGO level. This was touched upon by the Norwegian delegate in the recent IOC discussions. He said that his impression was that at least part of the Unesco Fellowships program did not meet the needs of the developing countries. The difficulty here seems to be

that Unesco Commissions in countries were not oriented to marine science and did not look after needs in this area. This is obviously a reflection of a division of labor which exists at headquarters between the Unesco Office of Oceanography and the IOC. The problem is further complicated by the fact that it is the FAO which handles the largest technical assistance program in the marine environment, but IMCO also has its own and now the WMO has begun to move more seriously into this area.

## Discussion

*FERRERO:* My name is Eduardo Ferrero. I am a Professor of International Law, from Lima, Peru.

First, with reference to the point that developing countries do not give too much attention to the necessity of acquiring knowledge and capabilities, I want to emphasize that there is a big and very important trend to the contrary that is shown in the several Latin American declarations that have been approved in the last two years. For instance, it appeared in the Montevideo Declaration of May 1970, approved unanimously by nine Latin American countries; and in the Declaration of the Latin American States on the Law of the Sea, adopted with 14 votes in favor, at the Latin American meeting on Aspects of the Law of the Sea held in Lima in August 1970.

I think there is a very clear trend in the sense that the Third World is beginning to be really conscious and is giving attention to the necessity of knowledge, capabilities and technology.

On the other hand, I would like also to stress another idea. Although we are speaking of the needs and interests of the developing countries, we must understand that this subject is related to the needs and interests of all the world. It is connected to the relations of the developing countries with the developed countries, and to the conflict of interests which exists between developing and developed countries. On this matter, therefore, I think that another important point to be considered is that there is a lack of real intention on the part of many developed countries to try to change the current conditions and the actual rules on the law of the sea, or even only the past rules, because in many cases there are no universal binding rules on this subject.

Summing up, what I am trying to say is that we must also take into account that there is a real lack of intention on the part of the developed countries to change this situation because there is a serious conflict of political and economic interests between the developing and the developed countries. This is shown, for instance, in the resolutions adopted at the meetings of UNCTAD, especially at the first UNCTAD of 1964. These resolutions have not been brought into practice by the developed states. Although these resolutions were recommendations and were not necessarily obligatory and binding on the states that signed them or that were present at UNCTAD, still there was and there is a moral obligation which cannot be denied.

This shows that the resolutions, recommendations and decisions approved are not taken seriously by the developed countries. Therefore, I would ask the participants in this conference to bear in mind this last idea.

*OUCHI:* My name is Kazuomi Ouchi, from Japan. I am a developing student from a developed country.

My sentiment is always with the developing countries, but unfortunately, or fortunately, I am from a developed country, particularly with respect to marine activities. I would like to pose a rather provocative notion here with respect to the proceeding of the whole conference. That is, are we going to talk about the interests and needs of developing countries totally separated from those of the developed countries? I somehow feel that these two groups are interacting always, and therefore we cannot talk about one irrespective of the other.

Frankly speaking, our country's needs and interests are great toward the ocean area. So, going to a more specific statement made by one of the speakers this morning, Professor Miles, even with respect to the notion of technical assistance, I feel that the assistance should not be limited only to scientific or technological assistance. I think what the developing countries are needing so badly these days is the technical assistance with respect to the whole process

of fishing and exploiting resources—bringing those things into the market to make them somewhat worthy of economic profit.

To attain all this, perhaps the cooperation on the part of developed countries will be indispensable. Now, you cannot realistically talk about technical assistance from developed countries without attributing to them some benefit. It would seem that there are ways to benefit both parties through some means that has been more or less carelessly treated so far, both in the United Nations and other sectors.

*MILES:* Just one comment about that last statement that there must be some return for developed countries in technical assistance to underdeveloped countries. I think there is a tendency in the United States and elsewhere to define the return rather narrowly, and I think this is unfortunate. I think the best way to define that kind of return is in the fact that we all want all users of the ocean to be able to make intelligent judgments about the ocean, and if the result of technical assistance programs, irrespective of cost at the moment, will provide that, then I will argue that is sufficient.

*CLINGAN:* Thomas Clingan, University of Miami. I would like to ask a question that I think is inherent in some of the comments that have been made already.

If in fact technology transfer implies that there are two parties involved, the transferror and the transferee, what is the role, as the panel sees it, of the transferror, the so-called developed country, or the one having the technology? If in fact the filler of the technology gap is education, does one "gear" education as one apparently would "gear" scientific research? If one is to gear education, who shifts the gears, and what is the implication for the educational system?

*PINTO:* In the part of my statement that I did not read this morning, there is one paragraph which I would like to read now, and that is the following:

> All developing countries have pointed out that full and free access to marine technology must be available to them if they are to derive substantial benefit from the rights that are sought to be given to them in the marine environment. Consequently, they may be expected to urge, in any future international arrangements governing the Law of the Sea, that provisions should be made in as explicit terms as possible for the rapid transfer of all types of marine technology and scientific data from the developed to the developing countries.

I agree completely with what Professor Miles said, that one cannot think in terms of a "return" to the developed countries—at any rate, in too narrow terms. The "return" which I think is very significant is the very fact that the technological gap is being bridged, that the disparity in standards of living is being lessened.

You can take that quite far. I think in the preamble to the treaty establishing the International Development Association (I cannot remember the actual words off-hand) there is a definite link contemplated between the preservation of peace and the reduction in the disparity of the living standards of peoples all over the world. The very fact that you are doing something toward bridging the technological gap, the very fact that you are reducing the disparity of living standards, provides an essential foundation for the preservation of peace. I think that is the kind of "return" that we must think about.

Now, as far as the actual transfer of technology is concerned, what types of technology and so on, if we have a provision of a general nature in a multilateral agreement, this could be implemented on a bilateral basis. For instance, one of the regional fisheries commissions of FAO adopted a resolution, I think in 1971, calling on its developed country members to assist developing country members as far as certain techniques of fishing and fish conservation were concerned. This was, I believe, unanimously adopted, which would mean that the developed countries did assume the responsibility of providing assistance perhaps on bilateral terms or through bilateral arrangements as far as fishing and conservation of fisheries were concerned.

Since you would do it on a bilateral basis, the precise areas in which you will provide the assistance would be worked out between the countries themselves. I don't think it is possible to generalize on the type of assistance that should be given, let us say with regard to fisheries. Some countries may want assistance in fish conservation, and others may just want assistance in how to draft their local fishery legislation; there may be any number of types of technical assistance. The precise nature of the assistance, and how it is to be given, could I think be worked out on a bilateral basis within the general framework of a multilateral agreement, bearing in mind that it has its own return in a sociological sense.

*VARGAS:* I just would like to make a couple of comments regarding this transfer of technology, or claims for knowledge or capabilities as they were put before.

Although it is true that the bilateral transfer of technology has been the most useful mechanism, I think that there are other alternatives which have at least been studied by developing countries in the area. I would like to make a more specific suggestion regarding regional approaches and regarding collective efforts dealing with transfer of technology and dealing also with scientific investigation connected with the oceans.

One of the final resolutions of the Caribbean Conference in Santo Domingo was to undertake a feasibility study for the creation or establishment of an oceanographic institute for the Caribbean; so all the 15 or more Caribbean countries involved are going to determine the different needs, the capabilities, the scientific and technical infrastructures, the kinds of problems applicable to the peculiar characteristics of the Caribbean area, etc., and they will collectively determine the policies for the transfer of technology, as well as the policies for scientific knowledge applicable in this area.

I think that not only bilateral efforts offer this opportunity, but also collective efforts perhaps within a regional framework.

*FRANSSEN:* I would like to respond to Dr. Clingan's statement as to who shifts the gears in education.

It is very difficult to say who shifts the gears, especially when developing countries need the technological know-how and trained manpower. This the developed countries possess and can give to the developing countries.

At the same time, developed countries also need and desire certain things which developing countries can give—for instance, scientific research in coastal waters of developing countries. There have been instances where coastal states have prevented this research from being carried out; yet these countries have often responded by accommodating certain measures when things have been settled to fit the needs of the coastal states as well.

For example, Dr. Emery of Woods Hole wanted to do research off the coast of Brazil. At first his request had been turned down. But later, Petrobras requested Dr. Emery to do research in return for something they could gain—namely, more knowledge of the potential for oil.

So I think that in response to your question, there are many measures by which these things can be settled and accommodated.

*ANAND:* I would like to respond to the remarks of Mr. Pinto. I agree with him. I think the underdeveloped countries—they are hardly developing, or are developing at such a slow rate that it is a misnomer to call them developing really—these underdeveloped countries are very well aware of the fact that the developed countries want something in return for their help. In other words, the developed countries are more concerned about their short-term interests than long-term interests.

It is in fact for this reason that the underdeveloped countries have been insisting on the transfer of technology and the development of technicians and indigenous know-how, through international agencies, through the United Nations, and this is one of the reasons why they have been demanding a very strong —as strong as possible—international organization or machinery for the control of the seabed.

*WOO:* Professor J. S. Woo, Chung-Ang University, Seoul, Korea.

I would like to make three comments on the talks that we have been carrying on. The first one is on the point that was made by Professor Miles. He eloquently pointed out the three different aspects of the subject, but if I may say so he has minimized, or at least he did not emphasize, the relationship among those three factors. This is one of the difficult aspects that we often face when we try to theorize certain phenomena.

Now, I certainly recognize the points that were raised by our Latin American colleagues, and that the knowledge and capabilities are being emphasized more and more in the developing countries recently. However, if we want to obtain certain knowledge, or levels of knowledge, along with capabilities, we need certain prerequisites. They are the independent resources to achieve these ends, which most of the developing countries are lacking. So I would like to emphasize that all those three are quite interrelated.

The second point that I would like to make is on the matter that Mr. Vargas has pointed out. The transfer of technology, bilaterally arranged, might lead to a very dangerous consequence; the tying up of one country to a particular dominant donor country very directly. So I would like to agree with someone who has recommended the system of regional cooperation; that is, more on a multilateral basis rather than bilateral.

This leads me to the third point, which was raised by our friend from Japan, Mr. Ouchi. He was talking about the return from the developing countries to the developed in the process of transfer of technology. But if Mr. Ouchi meant the short-term and the cash value return, I think we from the developing countries are also returning the cash value. That means

that as soon as we have transferred technology, we do have to utilize the industrial capacities of the industrialized country, paying with our hard currency. Therefore it is a cash value return; we are not really getting something for free.

*BELLO:* Emmanuel Bello, of Nigeria.

One of the major problems of this conference is the question, to my mind, of the definition of the word "developing nations." So far it has been quite clear that the members of the panel who have been speaking have found it difficult to pinpoint or arrive at a definite method of defining the words "developing nations."

According to Mr. Pinto, a country may regard itself as a developing nation, as mainland China considers itself. And there are those based on economic development and living standard, or the GNP, or even on education, depending on the number of educated and uneducated people within their country; the other group would be the concept of the Third World, which means a grouping of nations within the concept of the developing nations, which in French we will call "Troiziem partie du monde."

I would say that while it is possible to use all these words in clarifying our stand on the developing nations within general political concepts, it is very hard to use this same yardstick for measuring what should a developing or developed nation be within the domain of the international law of the sea.

My submission is that there is a clear case here that the distinction lies not in economic development or education, or any other element you might like to attach to it, but on the question of technology. I would submit that the distinction be between the technologically developed nations of the world, and the less technologically developed nations of the world; in the sense that within Europe itself you see Portugal, Spain, and many other countries, such as Yugoslavia, which may be regarded as developed countries, but technologically they are also incapacitated by their own economic standards. They cannot really, on their own, undertake any exploration or exploitation of the deep ocean floor or the coastal areas within their continental shelves. So they would be regarded as developing nations within the context of the international law of the sea, as we see it today.

My other point is on the ocean sciences and specialization. I think it is very optimistic, and quite encouraging, too, that many of the speakers from the developing nations have said that developing nations should participate actively in all aspects of ocean exploration. I would say that this is unrealistic; it is impossible for them to do so because of the reasons which have been advanced already. Materially they are incapable, and they lack the technical know-how. They do not have the personnel to do it.

I would suggest, then, that the question of their specialization be classified according to those who have any particular resources within their area specializing in their production, and to disseminate information regarding them, and avoid overlapping of activities which may be useless to all of them at the same time. The possibility of concentrating on one thing at a particular time would advance and enhance the knowledge of all the other countries in the developing nations in the special field concentrated upon.

My third point is on scientific research, which has just been mentioned. Many of the developing nations have little knowledge of what value there is regarding the information provided by advanced scientists who carry out scientific research along their coasts, because when they are provided with this information, they rarely do anything with it, and this is just as useless as not having the information at all.

Primordial to this discussion is the encouragement of the personnel within the coastal states to participate actively and to help in the training of these men by scientists who know that they are interested in carrying out whatever form of scientific research there is in the coastal areas of the developing nations.

Another question I have in mind is the issue of solidarity. We have found within the last two meetings of the Committee on the Ocean Floor that it has been advanced that the developing nations have been united in their efforts to produce a beneficial result in the sense that they have agreed on one premise, they have agreed on one method of approach, one strategy. But it is quite clear to you and me that the interests of nations are never singular, and it is almost impossible for them to pursue this policy consistently to its logical conclusions.

My submission therefore is that while this would be desirable and necessary for developing nations to make wide claims, I think it should be minimized so that the negotiations and whatever else there is that has to do with the actual groundwork for the Conference on the Law of the Sea should be really moderate, so that there will be a spirit of give and take; so that wild claims made only to draw the attention of the other countries to the opposition should really not be something that is continued or made a habit of.

In that regard I would submit also that today we have found that the 200-mile limit which Latin

American countries have claimed, just to draw an equation to the Declaration of Truman in 1945, has become what one may regard as the "Iron Curtain" of the international law of the sea. We have found it very hard to break the ice on this issue.

So I would humbly suggest and submit that the developing nations be reasonable in their claims and arrive at a fairly equitable and reasonable conclusion among themselves before they really advance to the conference table vis-a-vis the other developed countries.

# DISCUSSION GROUPS

## Explanation

**Monday afternoon, June 26**

The Monday afternoon session of the Law of the Sea Institute's Seventh Annual Conference consisted of seven informal discussion groups in which all participants were encouraged to express their views uninhibited by the presence of reporters or recording devices. Participants were assigned to groups in an effort to achieve a broad range of interests, disciplines and nationalities within each group.

In order to provide a basis for discussion, Dr. Francis T. Christy, Jr., Program Chairman for the Seventh Annual Conference, circulated an outline of some of the issues being raised at the Conference, such as policies and controls for ocean mining, proposed fisheries regimes, and the accommodation of interests of non-fishing states.

Seven group leaders directed the discourse and impromptu debate. In addition, four of the groups had rapporteurs who kept notes and submitted written summaries which helped to evaluate the effectiveness of small-group sessions as a means of achieving more frank and open communication. The group leaders and rapporteurs were:

Group 1—Larry Fabian, Brookings Institution
Rapporteur: Richard Allen
Group 2—Margaret Galey, UNITAR
Group 3—John Gamble, Law of the Sea Institute
Group 4—Ann Hollick, Johns Hopkins University
Group 5—H. Gary Knight, Louisiana State University
Rapporteur: Terry McIntyre
Group 6—Joseph Nye, Harvard University
Rapporteur: Wayne Smith
Group 7—Kazuomi Ouchi, Seinan Gakuin University, Japan
Rapporteur: Sam Levering

# SEABED MINING BEYOND THE LIMITS OF NATIONAL JURISDICTION

## Interim Practices and Policy for the Governing of Seabed Mining Beyond the Limits of National Jurisdiction

*John G. Laylin, Attorney at Law, Washington, D.C.*

**Tuesday morning, June 27**

The governments of at least four states are currently supporting activities on the floor of the deep sea. And at least three corporations in the United States are actively preparing to recover hard minerals from the seabed beyond the jurisdiction of any coastal state. Unless the Seabed Committee of the General Assembly gets to work,[1] we may expect active mining of the resources of the deep seabed before any conventional international regime is established. In the interim such activities will be governed by customary international law with each private operator acting subject to the regulations adopted for him by the country to which he owes allegiance.

The 1958 Conventions on the Continental Shelf and the High Seas have codified some law governing such activities. No state or its nationals may exploit the resources of the seabed adjacent to a coastal state without its permission, but in the area beyond (hereinafter sometimes called "the Area") every state and its nationals are free to "dig and keep" so long as they do not interfere with the exercise by other states and their nationals of this and the other freedoms of the high seas.

It is generally accepted that a state may not, by reason of its activities or those of its nationals in a section of the Area, acquire sovereign rights over that section. It is at least generally agreed that such rights will not be claimed or acquiesced in. It has further been declared by the vote of delegates of many nations to the General Assembly that any lesser rights acquired by activities on the seabed shall be subject to any international regime hereafter agreed upon. The delegates of no state voted against this declaration although the delegates of some states abstained. Until a multilateral convention is signed and ratified by an overwhelming number of states including an overwhelming number of seafaring nations, this declaration of subserviency may have little practical importance.

The opinion is expressed by many scholars that while a state cannot by its activities on the ocean

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[1] The United Nations Press Release SB/37 is cited in *United Nations Law Reports* of April 1, 1972 for the following:

> Five-week session of Committee on Peaceful Uses of Sea-Bed and Ocean Floor in preparation for a Conference on the Law of the Sea ended 31 March with no concrete decisions having been taken. Committee's main task is to draft articles for an international treaty or treaties to be considered by the Conference on the Law of the Sea. It is still in the stage of debating the many complex and interlocking issues which must be clarified before the actual drafting can begin.

floor acquire sovereign rights, it can by its activities or those of its nationals acquire over a section of the Area rights, short of sovereign rights, against all other states and their nationals. It is doubtless with this body of opinion in mind that the delegates of several states voted in December 1970 for a moratorium on exploration and exploitation in the Area.

If any one of the governments participating in deep seabed mining should stake out a section for its exclusive use and back this up with actual commercial mining activity, and should a significant number of the seafaring states of the world acquiesce and perhaps themselves stake out sections followed by commercial activity, it can be anticipated that whatever international regime is eventually agreed upon will recognize rights of priority by reason of these existing practices.

In the meantime it is important for the whole world that those countries who themselves are active in mining the seabed resources in the Area adopt policies and carry out practices that will provide an orderly transition to the regime to be established in the eventual multilateral convention. The United States policy for the interim period should, therefore, be to encourage practices that will promote—not embarrass—the establishment of an international regime where every state—seafaring or not—may have an equal opportunity to benefit from the recovery of the resources of the deep seabed. We must promote regulated exploitation—that is, exploitation in accordance with rules anticipating those we believe should be adopted in the multilateral convention. This we cannot do by observing a moratorium while others stake out their claims for special rights. We can set an example by participating and by laying down and observing the rules we would want others to respect. It was activity such as this that was contemplated in the statement of May 1970 in which the President of the United States called upon other nations to join with the United States in establishing an interim policy.

Countries that propose to mine the deep seabed by a government agency or through subsidized companies may not need special legislation to regulate their activities. If the United States is to participate through private enterprises responsive to federal law, there must be legislation.

A committee of the American Mining Congress has, in cooperation with scholars interested in orderly development of the law of the deep seabed, prepared draft legislation which after approval by the Council of the AMC was introduced in the Senate and House of Representatives by a number of members. Hearings have been held on the House version (H.R. 13904) by two committees and on the Senate version (S. 2801) by one committee. The testimony has brought forth interesting information and critical opinion. I shall quote or paraphrase from some of the most revealing statements.

> Many authorities have pointed out the specter of increasing mineral demand, diminishing or economically deteriorating mineral supply, and the politics of mineral supply. Of particular note is the *First Annual Report of the Secretary of the Interior under the Mining and Metals Policy Act of 1970* (hereafter "Secretary's Report").
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> It is abundantly clear today that foreign supplies of minerals of all kinds are no longer a problem in simple economics but are determined by the economic and political decisions of some governments which are seldom motivated by a spirit of wanting to aid the well-being and progress of the United States. The Secretary's Report says, *"Expropriations, confiscations, and forced modifications of agreements in foreign countries already have severed the flow to the United States of some foreign materials produced by United States firms operating abroad and have made other materials more costly."* It is also clear that the United States is in competition around the world for natural resources with the developed nations of Western Europe and Japan. Again, the Secretary's Report says, "At the same time substantial blocks of the world's remaining high-grade mineral resources are being tied-up commercially by supranational groupings, nationalized firms, or firms in consortia with the blessings of governments not concerned with our concepts of antitrust." This competition recognizes the fundamental dependence of modern economics on minerals and that the value of these minerals to a national economic system often transcends the usual evaluation of the raw material.
>
> The goal of some of our foreign competitors is first to get control of the raw material and then to worry about its cost. This is not an academic problem; our importation of oil and the associated political problems are well known. There is also a very large stake in imported metals.
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> The April 1972 interim report of the National Commission on Materials Policy entitled *Towards a National Materials Policy—Basic Data*

*and Issues* states ". . . that as the nation's needs continue to grow, as per capita consumption of materials in other countries increases at an even faster rate than ours, it becomes increasingly difficult for the U.S. to fill its ever-growing deficit by imports, even at increasing prices."

What is even more disturbing is the growing politicizing of raw materials. Raw materials are in fact political commodities and are the real base of world power. We have seen the worldwide wave of nationalization of raw material production. We have seen the creation of organizations such as CIPEC for copper-producing countries which will be very troublesome for Western nations when it becomes able to operate as effectively with copper as has been the case with OPEC for crude petroleum. A recent paper by Professor Sutulov given before the American Institute of Mining Engineers shows that a short time ago the Western industrialized powers controlled about 80% of the then-known copper reserves. Over the past five years the situation has changed sharply and today only about 40% can be considered effectively controlled by Western industrial countries. The prediction is that this will further decline to 30% with copper imports becoming more and more politically and economically conditioned.

Hard mineral resources in the deep ocean represent an alternative to this picture. They can be used to supplement our domestic supplies over the approaching decades and in some cases provide raw materials which are not available domestically.[2]

> [T]he United States imports 19% of its copper and is almost totally dependent upon imports for nickel at 84%, cobalt at 92%, and manganese at 98%. We import these metals, with the possible exception of nickel, mainly from developing countries which are generally unresponsive to U.S. foreign policy or which are increasingly combining among themselves to manipulate prices upward or to control production and distribution to further their economic and political goals.[3]

[2] C. H. Burgess' testimony May 16, 1972 before Subcommittee on Oceanography, Committee on Merchant Marine and Fisheries.

[3] J. Flipse for N. W. Freeman, testimony, also May 16, 1972, before the Subcommittee on Oceanography.

The governments of other countries have become aware of the threat to their sources of raw mineral supplies—notably copper. The French Government is reported to have decided to subsidize French mining companies to the equivalent of $80 million "in aid over five years and to guarantee mining investments in foreign countries.[4]

The United States legislation which is proposed makes no provision for aid to mining companies but it does contemplate OPIC-type of insurance against losses from intrusion by foreign governments or their nationals in sections under licenses issued by the United States. Provision is likewise made for compensation for losses resulting from agreement by the United States to provisions in a unilateral convention that increased a licensee's costs. The President in his May 1970 statement stressed the need for protecting the integrity of investments authorized in the interim period. This latter provision is designed to fulfill this pledge while providing the United States negotiator with leeway. In harmony with the constitutional requirement of compensation for property or rights taken or curtailed for the good of the whole nation while permitting such taking, this provision in the proposed legislation permits such a taking with the appropriate compensation.

Thus far the purport and effect of the legislation remains to be fully understood. It is perhaps best to begin by pointing out certain things it does not do. Certain critics at home and abroad have failed to appreciate that the proposed legislation *does not:* 1) lay claim or purport to confer territorial rights over any portion of the Area; 2) favor the coastal state over the landlocked state; 3) favor the industrialized state over a lesser developed state; 4) purport to postpone or replace a multilateral convention establishing a worldwide international regime.

What the proposed legislation does do:

1. (a) restrains persons subject to the jurisdiction of the United States from mining the resources of the deep seabed except under licenses issued by the United States or any other state with comparable legislation (a "reciprocating state") and in accordance with the regulations laid down to promote orderly and nondiscriminatory development; (b) permits foreign individuals and corporations acting through companies incorporated in the United States to mine under a United States license.

2. contemplates that landlocked states will enact comparable legislation and issue licenses in any sec-

[4] *Metals Week*, May 22, 1972.

tion of the Area not previously licensed by a reciprocating state.

3. contemplates that non-industrialized states may enact comparable legislation under which licenses could be issued to companies with advanced technology and know-how wherever owned so long as these companies accept for the licensed activities the jurisdiction of the licensing state.

4. attempts to encourage those delegations in the UN Seabed Committee that have thus far delayed progress or advanced proposals they know are not acceptable to states whose adherence to a multilateral convention is essential, to get down to work on a sensible set of heads of agreement for a 1973 convention and treaty or set of treaties on the Law of the Sea.

The legislation was proposed on the urging of industry, not on the initiative of the Executive, although President Nixon did call for an interim policy that contemplated no delay in exploring and exploiting the resources of the deep seabed. In response to inquiries from committees of the Congress, the Administration has asked for leave to give its opinion after seeing what progress is made this summer and fall in the Seabed Committee and UN General Assembly.

The countries which have thus far thought they might prevent competition from the seabed with the minerals they export may come to realize that they have overplayed their hands. If not, the countries which are consumers of these minerals and the products containing them may awaken to the fact that their time interest lies in participating in the interim regime along the lines opened to them under the policies and practices of the interim regime we have discussed.

## Some Problems in the Exploitation of Manganese Nodules

*Orris C. Herfindahl, Resources for the Future, Washington, D.C.*

**Tuesday morning, June 27**

### AN ECONOMIC FRAMEWORK FOR THINKING ABOUT NODULES

Opinions on the economic feasibility of exploiting manganese nodules appear to have changed considerably in recent months. Indeed, it seems to many that we are on the threshold of viable production. It is not my purpose to speculate on these possibilities, however. Instead, let us proceed on the assumption that production is feasible and then examine some of the various problems that may arise.

Before we can discuss fruitfully the aspects of manganese nodule exploitation that are of most interest to you, a theoretical framework is needed in which to place our thinking. Accordingly, I should like to explain first how some concepts from elementary economics can help us to think about a quite complicated problem, a task that seems to have been somewhat neglected up to this point. The problem is complicated by the fact that production of the commodities is joint up to a point, with fixed proportions, and that there are at least two metallurgical processes in the running, each with costs that are in part joint but with separable costs, too. They could provide quite different product mixes, and as we shall see, both processes could be in use at the same time. With this introduction, let us go back to elementary economics and consider a purely hypothetical situation which will reveal clearly certain fundamental considerations that are relevant in more complex cases.

### Joint Production of Two Goods from Nodules —A Hypothetical Case

The first situation is one in which there is production on land of two commodities, each produced by its own industry, and each of which is produced at

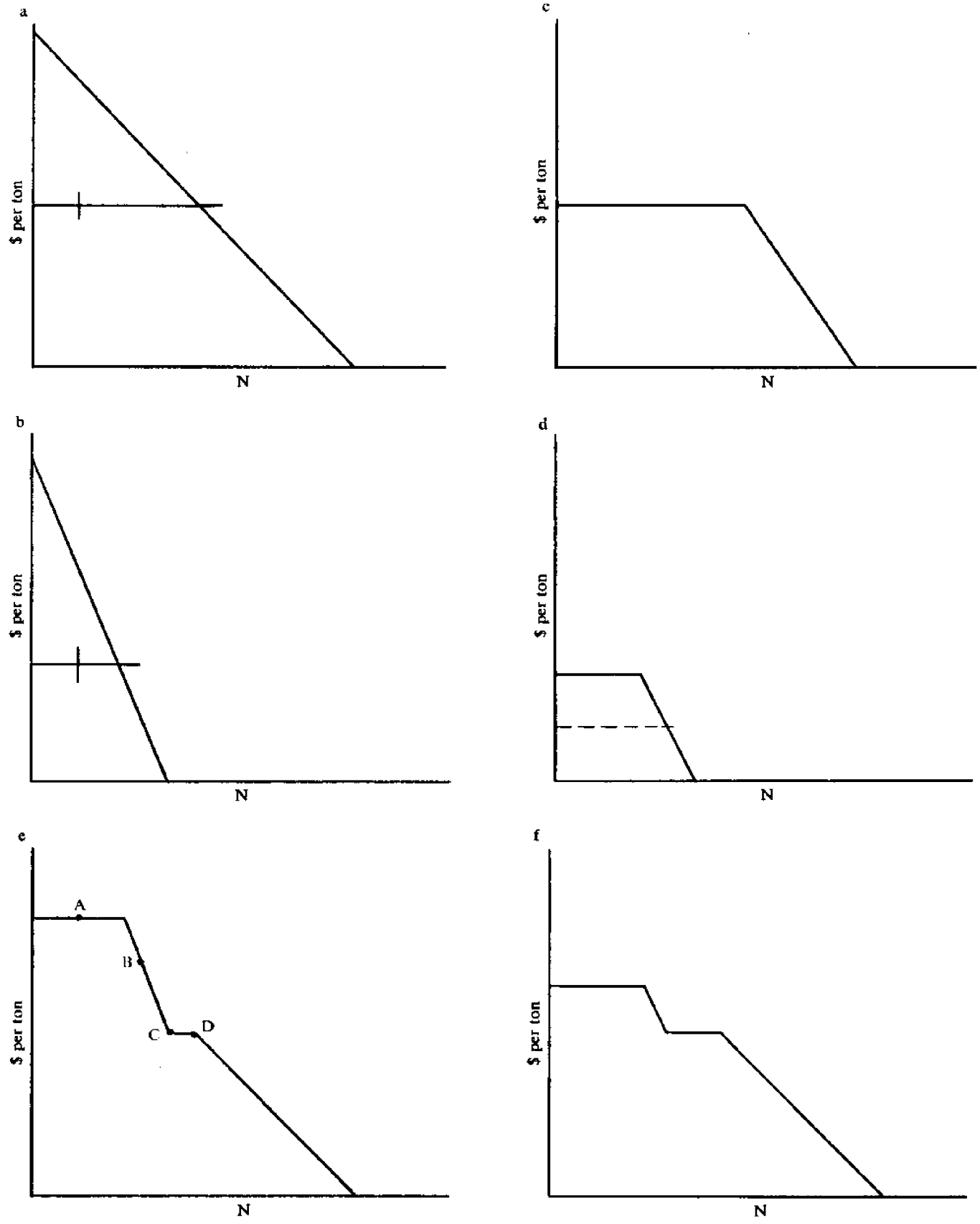



**Figure 1.** Demand curves for nodules with supply curves horizontal (N = tons of nodules).

constant cost, say copper and nickel.[1] Before the nodules come into the picture, the situation is as depicted in Figures 1a and 1b.

and in fixed proportions. First, let us derive the demand curve for copper. We do this by asking this question: If the nodule producers were to produce

**Table 1.** *World annual production (metal content, 1970) of principal metals contained in deepsea nodules and estimated recovery from possible future production of nodules.*

| Metal | 1970 Production, metal content[1] | | Nodule content, dry (%) | | Recovery rates (%)[4] | | Recoverable content (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Mero[3] | UN[3] | Two metals | Four metals | Mero[3] | | UN two-metal recovery[6] | | UN four-metal recovery[7] | | Deepsea Ventures[8] | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | | (8) | | (9) | | (10) | |
| Nickel | 685x10⁶S.T. | 4.3% | 2.0 | 1.5 | 65 | 96 | 1.30 | 43 | .97 | 48 | 1.44 | 3.8 | 1.25 | 4.6 |
| Cobalt | 26x10⁶ | .2 | .2 | .3 | | 96 | | | | | .19 | .1 | .23 | .8 |
| Manganese | 8,370x10⁶ | 52.3 | 36.0 | 30.0 | | 93 | | | | | 33.50 | 89.3 | 25.00 | 91.0 |
| Copper | 6,900x10⁶ | 43.1 | 2.5 | 1.5 | 70 | 94 | 1.75 | 57 | 1.05 | 52 | 2.35 | 6.3 | 1.00 | 3.6 |
| | 15,981x10⁶ | 99.9% | 40.7 | 33.3 | | | 3.05 | 100 | 2.02 | 100 | 37.5 | 99.5 | 27.48 | 100.0 |
| | | | | | | | | | | | Other metals: | | .28 | |
| | | | | | | | | | | | | | 27.76 | |

[1] U.S. Bur. of Mines, *1971 Annual Volume, Mining Journal.*
[3] *Mining Congress Journal,* May, 1972, p. 45.
[3] Report of the Secretary-General, *Possible Impact of Sea-Bed Mineral Production in the Area Beyond National Jurisdiction on World Markets,* 28 May 1971, A/AC.138/36, p. 53.
[4] *Ibid.,* p. 47.
[5] Col. 3 × col. 5.
[6] Col. 4 × col. 5.
[7] Col. 4 × col. 6.
[8] Derived from testimony of John E. Flipse of Deepsea Ventures before House Subcommittee on Oceanography of Committee on Merchant Marine and Fisheries, May 12, 1972.

Figure 1a shows the demand curve for, say, copper. Note, however, that the variable on the horizontal axis is expressed as tons of nodules, which we assume is proportionate to pounds of copper. Similarly, price is expressed as price for the copper contained in a ton of nodules. Since both variables are proportionate to those in the usual demand curve, there is no essential difference between it and the curve in Figure 1a.

The horizontal line of Figure 1a represents the constant cost *long run* land supply curve for copper. The current price and quantity are indicated by the intersection of the two curves.

Figure 1b shows the same two kinds of functions for another commodity, say, nickel. Note that in terms of equivalent tons of nodules, the market for nickel is drawn as smaller than that for copper.

Now suppose that nodules are found and that they are produced (all the way to metal) by a series of operations that produce the two metals jointly at constant cost $k, how much would they be able to sell after the land producers had provided as much as they wish at a price of $k? The answer is, the quantity that would be demanded by the market at a price of $k minus the quantity the land suppliers would provide. At any price above the current market price, land producers would be willing to supply an amount (indefinitely) larger than that demanded, leaving nothing for the nodule producers.

If $k is equal to current market price, the land producers are willing to supply all the demand. As soon as $k is below their cost, however, land producers are willing to supply nothing and the nodule people take over the whole market. Thus the derived demand curve for copper in nodules is a horizontal line at the level of land producer cost out to the market demand curve and coincident with the market demand curve for prices below their cost level, as in Figure 1c. In the same way, Figure 1b gives rise to the solid derived demand curve for nickel of Figure 1d.

Now let us add the demand curves for copper and nickel together (vertically), thus deriving a demand

[1] Let us assume, contrary to fact, that the supplies of copper and nickel are independent.

curve for nodules—that is, a curve showing average revenue per ton that could be had from selling the products of various quantities of nodules on the markets. The result is Figure 1e, which may impress you as being a strange looking demand curve, but remember that it reflects market demands for copper and nickel *and* the actions of land producers, who make their decisions only on the basis of market price.

Suppose that the long-run supply curve for nodules, which shows the quantities that would be supplied at various prices, rises and goes through point A of Figure 1e. What would happen to the prices of copper and nickel? Nothing (recall that we are talking about the long and not the short run). Nodules would be supplied in the quantity indicated by point A. Extending this quantity upward into 1a and 1b, land supply of copper and nickel would be reduced by the quantities corresponding to this quantity of nodules, but land producers would continue to supply the rest of the quantity demanded at the same prices as before, that is, the quantities to the right of the ticks in Figures 1a and 1b. If the copper and nickel contents of the nodules are about the same, the relative effect on land nickel supply is much greater than on the land supply of copper because of the differing sizes of the initial markets.

If the cost of supplying nodules is lower—say the long-run supply curve goes through point B in Figure 1e—the land nickel industry is wiped out, the price of nickel is lower, but the price of copper still is not affected. Costs (in a comprehensive sense, including return on capital) are just covered in the nodule industry.

A nodule supply curve going through the derived demand curve anywhere to the right of point C in Figure 1e would result in zero price for nickel on our arbitrary assumptions. Intersection anywhere to the right of point D would result in the complete disappearance of the land supply of copper as well as of nickel.

In general, if there is competitive production of nodules and constant cost of land supplies, small quantities of nodules will have no effect on market prices of the metals or products involved, but as quantity increases, then prices will be affected first for that commodity whose nodule content is high and/or whose market is small. Nodule supply will increase to the point at which it is no longer profitable to expand nodule production. Land supply of some of the metals may have disappeared and certainly will have been reduced.

Suppose now that not all nodule costs are joint but that the production of nickel requires some special processing at a cost indicated by the dashed line in Figure 1d. In adding together the two derived demand curves, c and d, only that portion of the nickel demand curve above this dashed cost curve should be added. The effect of the added special processing cost is to reduce the derived demand curve for nodules as shown by the solid curve in Figure 1f. Compare it with Figure 1e.

If land supply curves are not constant cost but rise, as would be the case if a short-run situation were being considered, the effects on land supply of supply coming from nodules is more gradual and the derived demand curves for metal from nodules are reduced. Figure 2 shows the same original market demand curves as before but with the supply curves rising instead of being horizontal. The derived demand curves are calculated as before by subtracting from market demand, at each price, quantity supplied from land sources to yield quantity indirectly demanded from nodule sources. Nodule demand cannot be negative, of course.

**Table 2.** *Pounds and value recovered metal per short ton of nodules raised*[1] *(valued at 1970 prices*[2]*)*

| | *Two-metal recovery* | | | | *Four-metal recovery* | | | |
|---|---|---|---|---|---|---|---|---|
| | *Mero* | | *UN* | | *UN* | | *Deepsea Ventures* | |
| *Material* | *Lbs.* | *Value* | *Lbs.* | *Value* | *Lbs.* | *Value* | *Lbs.* | *Value* |
| Nickel | 26 | $33.80 | 19.4 | $25.22 | 28.8 | $37.44 | 25 | $32.40 |
| Cobalt | | | | | 3.8 | 8.36 | 4.6 | 10.12 |
| "Manganese"[3] | | | | | 670 | 20.10 | 500 | 15.00 |
| Copper | 35 | 17.50 | 21.0 | 10.50 | 47 | 23.50 | 20 | 10.00 |
| | | $51.30 | | $35.72 | | $89.40 | | $67.62 |

[1] Recoverable content (per cent) from table multiplied by 2000.

[2] Taken as nickel, $1.30; cobalt, $2.20; copper, 50¢; ferromanganese "material" at a rather arbitrary 3¢ per lb. Manganese metal at 31¢/lb. would yield much higher values.

[3] Expressed as manganese content, but only a limited quantity of manganese metal would be produced.

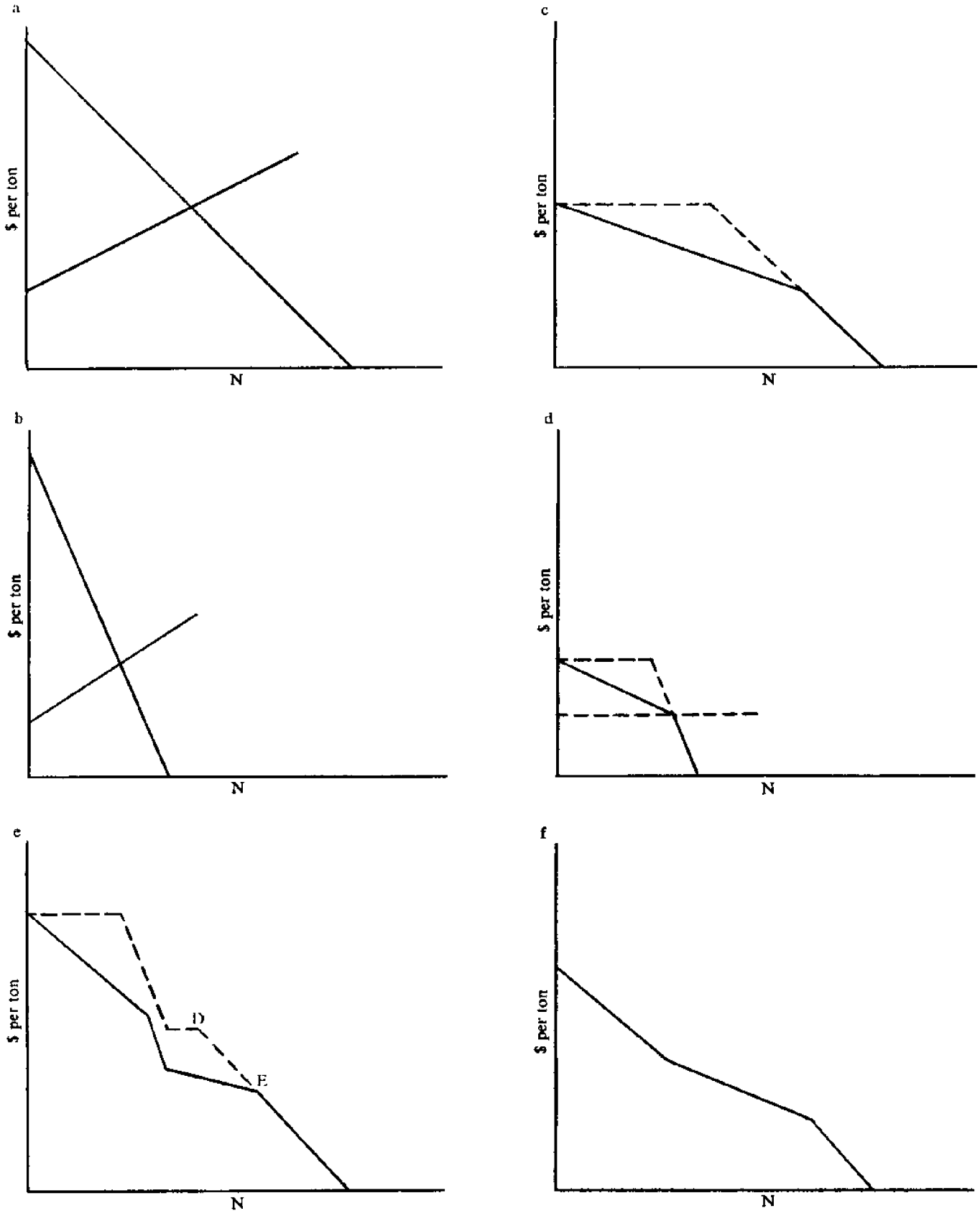



**Figure 2.** Demand curves for nodules with supply curves rising (N = tons of nodules).

The derived demand curves for each commodity are the solid curves in 2c and 2d. The corresponding curves for the constant cost case (from Figure 1) are shown as dashed curves here for comparison. On adding vertically the solid curves in 2c and 2d, the result is 2e.

Again, if the second commodity is viewed as having special costs equal to the lower horizontal dashed line in 2d, the summed curve is that of 2f, to be compared with the solid curve in 2e.

In general, small price changes in relatively constant cost situations can produce very large changes in the configuration of supply. These are softened when increasing cost of supply is present.

If we now imagine supply curves for nodules cutting the demand curve in 2e (or 2f) at various points, it can be seen that prices of both commodities will be declining from the moment supplies from nodules are added. It will take a considerably lower supply price for nodules to knock out all land production of either of the two commodities. For example, in the constant cost case, resulting in the dashed curve in 2e, the price at point D is low enough to stop land production of both goods. With increasing cost for land supply, resulting in the solid curve of 2e, this does not occur until price is at or below its level at point E.

### Joint Production of Four Goods from Nodules —Two Processes

The actual situation is more complicated than these simple hypothetical cases in that four major metals or mineral products are involved plus others in minor quantities and, in addition, there appear to be two main metallurgical routes that might be taken with others possibly waiting in the wings.

Consider the case of four products and two metallurgical processes, one of which yields nickel and copper and the other of which yields these plus some manganese-containing substance and cobalt. Costs up to the metallurgical stage are joint (exploration, gathering, lifting, cleaning, grinding if needed). At the metallurgical stage a part of the costs are joint within each process, but in each case there are costs at the end of the metallurgical sequence which are specific to each product. Let us suppose that these specific costs are constant per unit of the product involved.

The demand for each commodity that remains for nodule producers after land suppliers have supplied all that they want can be derived as before, in principle, by subtracting (horizontally) the land supply curve from the market demand curve for the commodity in question. Now we encounter a difficulty, however. If these derived demand curves, expressed in units of nodules, are added vertically, the implicit assumption is that nodules give rise to the four products in fixed proportion, but this is not the case with the two main processes in question, although there might be alternative processes which would yield products in the same proportions from a given material.[2] Thus the demands facing the users of one process will depend on the amounts supplied by the other nodule process as well as on the amounts supplied by land supply sources.

Let us try to imagine how competitive forces would work themselves out in this case. First, however, it will be useful to have in mind the annual production of nodules that would be necessary to supply the current market under various assumptions with respect to metal produced from nodules by the two major process options. The results of these calculations appear in Table 3. Each figure is calculated by dividing current production in short tons by the recovery percentages as described in Table 1.

Nodule recovery on a given scale would have a much greater effect on the cobalt market than on the others because the cobalt market is small, and this in spite of the fact that the recovery rate also is low as compared with the other products. In the case of two-metal recovery (Mero and UN-2 metal), the quantities of nodules required to supply the current market for nickel and copper are separated by an order of magnitude. A similar relationship holds in the last two columns.

Although the market for manganese (as expressed in contained manganese) is larger than that for copper, the nodule tonnage required to supply the current market is far lower than for copper because the quantity of manganese that might be "recovered" from a ton of nodules is much larger than the quantity of copper.

One way to form a very rough impression of what this means for the nodule market is to locate four points on a derived demand curve for nodules based on the assumptions applying to Figure 1e (constant cost of land supply and all costs joint). This is done for the UN four-metal assumption in Figure 3, the dollar prices coming from Table 2.

The caption on Figure 3 says "Points *possibly* on derived demand curve. . . ." In Figure 1e the market demand curves were drawn so that the derived demand curve going from, say, B toward C

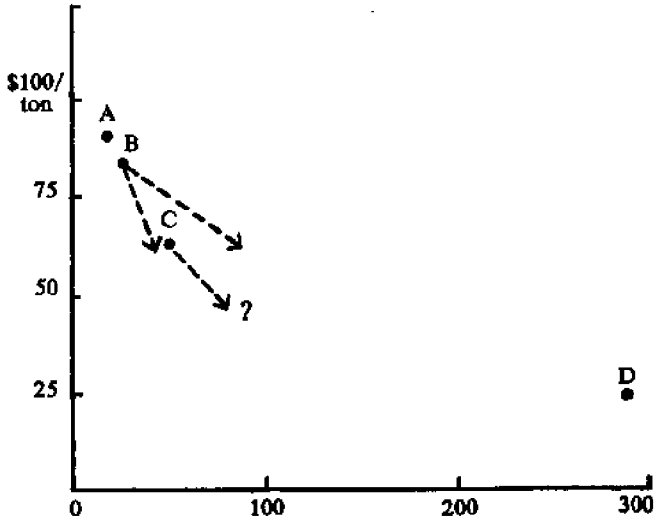
[2] This reminds us that we have not observed that the composition of nodules is not uniform with respect to location nor is their grade.

**Table 3.** *Annual nodule production (short tons) required to supply current market on various assumptions for recoverable content and metallurgical process.*[1]

| | | Nodule tonnage required on assumption of recovery under: | | | |
|---|---|---|---|---|---|
| *Commodity* | *Current market* | *Mero* | *UN two-metal* | *UN four-metal* | *Deepsea Ventures* |
| Nickel | 685x10⁶ | 53x10⁶ | 71x10⁶ | 48x10⁶ | 55x10⁶ |
| Cobalt | 26x10⁶ | | | 14x10⁶ | 11x10⁶ |
| Manganese | 8370x10⁶ | | | 25x10⁶ | 33x10⁶ |
| Copper | 6900x10⁶ | 394x10⁶ | 658x10⁶ | 293x10⁶ | 690x10⁶ |

[1] Calculated from Table 1.

(see Figure 3) would intersect the price level associated with C to the left of C, there thus being a horizontal segment to the left of C. This is not necessary, however, for the demand for the metal whose land supply has just hit zero at B may be sufficiently elastic to permit absorption by the market of much larger quantities of the metal in question at lower prices. Thus, Figure 3 can only give an impression, but the impression is valuable for it gives some idea of proportion.




A = Ni+Co+Mn+Cu  C = Ni+Cu
B = Ni+Mn+Cu  D = Cu

**Figure 8.** Points possible on derived demand curve for nodules based on assumptions underlying Figure 1e.

The possible outcomes for a situation with four products jointly produced from nodules, two metallurgical processes, each commodity with land supply and each commodity with some special costs, are numerous. The system is quite complex, involving 24 equations on one mathematical formulation even with strictly fixed proportions in nodule production. Various combinations of the following are possible: reduction or cessation of production on land of one or more of the four commodities; use of one or both of the nodule metallurgical processes, with one or more products being produced by each.

Assuming competition, the conditions for equilibrium after complete adjustment are that: (1) there be no profits (beyond competitive return on capital) either on land production or production from nodules. In the case of production from nodules, this means total receipts from the sale of all outputs of each process equal total costs; (2) if a product is produced from a nodule metallurgical process, the special costs of this product may not be greater than the price of the product.

It may not be clear how both metallurgical processes could be used simultaneously. To see this, suppose that at first there is only one new process available, say the one producing all four goods. As output of nodules increases from zero, prices of all the commodities go down if there are rising land supply curves, but those with a small market and/or large nodule content probably go down more. Assuming that no price goes below the special cost for that commodity, prices fall until total costs of the new processes are just covered by receipts from the sale of the four commodities. Supplies from land sources are reduced, but total market supply of each commodity from land sources and nodules is increased to supply the larger demand at the lower prices.

Now suppose that the two-commodity process is discovered, producing goods A and B. If the process is viable at the now existing market prices, it will be introduced. The prices of commodities A and B will go down, and their land production declines still further. The four-commodity process is now failing to cover costs. Production from it will be cut back (we are thinking of long-term changes), with increases in the prices of the two commodities, C and D, which are *not* produced by the new process. The net result, as compared with the situation when the second process came on the scene, is a rise in the prices of C and D, the pair of goods peculiar to the four-commodity process, and a fall in the prices of A and B. That is, the four-commodity process continues to be used with zero profits because prices of two of its products have gone up while those of two others have declined. The new process forces its way in and finds an equilibrium of zero profits because the prices of its products go down from where they were when only the four-commodity process

was in existence. Land production simply adapts to the lower prices as compared with the pre-nodule situation.

The condition that special costs of a product coming from nodules not exceed the price of the product is of very great practical importance for nodules. According to Mero,[3] recovery of a manganese oxide from which ferromanganese might be made may cost around $45/ton, substantially more than could be fetched on the market. In the four-commodity process, manganese can be recovered as metal, the price of which is almost four times higher than that of ferromanganese, but whether this can be done profitably or not appears to remain private information. The market for manganese metal is quite limited.[4] In the case of cobalt, the product for which nodule production would be of greatest importance relative to size of market, the extent of price fall is limited by the fact that cobalt can substitute for nickel in some uses, for example, plating.

The fact that special costs must be covered eases the task of the econometrician who might attempt to estimate the behavior of this system. If there were no special costs and production was joint with fixed proportions, he would have to estimate at least some of the demand curves all the way down to zero price, a feat that would involve an extrapolation way beyond the range of experience.

## BASIC QUESTIONS IN THE EXPLOITATION OF NODULES

### Main Options for Dividing the Take

A new resource has been "discovered," and techniques have been developed to exploit it. Clearly there is opportunity for gain here. Assuming that nodule production and processing is feasible, who is going to reap the benefit? How large will it be and how will it be distributed? Once again, our purpose is not to give numerical answers to these questions, but to indicate some of the factors involved in dealing with them.

#### *The Take Under Competition*

If competitive forces are strong enough and they are permitted to operate, the gain from the new ways of winning these materials will come in the form of savings on the inputs formerly required to produce them and from the extension of use that would accompany the lower prices. The users of the materials will be the ones to benefit, and the users reside mainly in the developed countries. If entry is not restricted and potential entrants feel safe enough about the security of tenure over the place in which they are operating, a competitive result seems to me to be rather likely. If the estimates of the size of a viable venture of around a million tons of dry nodules per year are not too far away from what will turn out to be optimum scale, or if economies of scale do not increase with size beyond a certain minimum, the nodule tonnages equivalent to present production (see Table 3) suggest that there is room for quite a few firms, a view that seems all the more reasonable when we recall that demands are increasing.

Would rents be competed away? Very likely. Of course, if exploration results in the finding of deposits of different grades, which is the case, we shall observe "rents" being collected by those producing the good deposits. This is not the same thing as being able to collect a fee for the privilege of exploring new bottom *and* producing, however. In fact, the very large quantity of nodules in the ocean plus the possibility that they are being formed at a good rate in relation to consumption adds up to the conclusion that not much would remain for rent to an owner who permitted this seabed resource to be exploited competitively.[5]

It is quite possible that a substantial return might accrue to the holders of patents on various of the processes involved. The payment of royalties to patent holders would limit the extent of the fall in prices under a competitive regime.

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[3] Cited in United Nations, *Additional Notes on the Possible Economic Implications of Mineral Production from the International Sea-Bed Area*, Report of the Secretary-General, May 12, 1972, A/AC.138/73, p. 24.

[4] For example, in the United States in 1970, ferromanganese consumed contained around 800,000 tons of manganese as compared with 24,000 tons of manganese metal consumed. See U.S. Bureau of Mines, *Minerals Yearbook, 1970*, Manganese Preprint, pp. 3-4.

[5] E.g., Mero, in *Mining Congress Journal*, May 1972, p. 43, states that single deposits may contain hundreds of millions of tons of commercially minable material. He believes the Pacific probably contains a minimum of ten billion tons of economically minable nodules. He sets the maximum at 200-300 billion tons.

There is a rather strong contrast between Mero's view and those of Frank Wang as given in *The Sea, Mineral Resources of the Sea*, Report of the Secretary General, United Nations Economic and Social Council, E/4973, April 26, 1971, p. 33. Without giving the sources, Wang states that one estimate of aggregate nodules in the Pacific is 17 million tons, and that another is as high as 90 billion tons. The lower limit cited by Wang is far below Mero's estimate. So for that matter is the upper limit, although 90 billion tons is a very large number.

*The Take Under Unified Management*

In contrast to a competitive regime, a single manager of the nodule resource might choose to restrict supply so that prices would not go down so far as to reduce rent, or profit, to zero. If this unified management were trying to maximize its return (as distinct from gain to buyers of the products) the optimum course of action would involve some price decline if land supplies are not constant cost.[6] Buyers would receive some benefit, but most of it would go to the unified nodule management. This benefit might be distributed to the "owners" of the nodules, that is to say, in accordance with the rules and procedures determined at the time the unified management scheme is established.

Still another possibility would be to let the price go to the competitive level but have the buyers of the products (their governments?) compensate the nodule owner with lump sum payments. Such an arrangement would be preferable on grounds of economic efficiency.

*The value of nodule rights.* In case anyone should have lingering doubts, it perhaps should be stressed that the value of nodule rights is *not* to be measured by the gross value of the metals derived from the nodules, but the gross value less what had to be spent to find and raise the nodules and to extract the metals.

Perhaps only a few persons still hold the view that the gross value of the contained metals measures the value of nodule rights, but the view that the adverse effect of nodule exploitation on countries already mining these metals is to be measured by the decline in their export earnings is no doubt more popular. It is equally erroneous, for it is *not* true that a dollar of exports represents a net addition of a dollar to a country's GNP. This view, or some variant thereof, would appear to be held by many of those who think that proposed changes in economic policy are to be judged on the basis not only of an efficiency calculation but also by their effect on the balance of payments.[7]

To a first approximation, $1 more of exports means $1 less of other final goods and services consumed or put into capital formation or $1 more of imports. *And* vice versa. The true measure of damage to a country with prior production of, say, copper (apart from short-run or transition difficulties) is the decline in the take from the mining activities affected, and this is a great deal less than the size of the fall in exports. Suppose that the country in question formerly used $95 worth of productive services to produce $100 worth of metal exports. Now nodules come along and the value of this quantity of metals goes below $95 and metal exports go to zero. Since the $95 of productive services formerly used in mining now can be used to produce other goods and services, the net damage is only $5—not $100.

If the $95 was not supplied by the country owning the mineral deposit but by, say, a foreign mining company, there is no loss from the fact that the $95 of productive services are no longer available. The loss is still only $5.[8]

THE ORGANIZATION OF PRODUCTION

*Competitive Production*

At the present time there is no owner of the nodules in the sense that no one is in a position to (1) tell you that you may not mine nodules in such and such a place because only he has that right, and (2) have the prohibition enforced. Thus a private enterprise can have no security of tenure in the usual sense in a location where it is mining nodules. Even so, private enterprises may be willing to operate in spite of this handicap. After all, there are many privately-owned fishing boats that work the high seas with no tenure rights at all, evidently not an intolerable situation when nobody else has such rights.

A private nodule miner who begins production now would run two kinds of risk in addition to the business risks he might ordinarily be expected to assume.

1. He may face interference with his operations by other private or national governmental operators. This risk is faced by the high seas fisherman. Not only may other fishermen interfere with his operations, but they may also affect the productivity of the fishery adversely. Like the fisherman, the nodule miner also must worry about interference with operations. In addition, the less mobile mining operation is pulling up a resource that stays in one place—a

[6] In this case there is no initial horizontal segment in the derived demand curve facing the single nodule manager. If there were, it is possible that the optimum course could be to restrict nodule production so that there would be no price fall.

[7] I am abstracting from short-run questions, from the problem of altering industrial structure, and from the difficulties created for the administration of foreign trade by policies that deliberately leave exchange rates misaligned.

[8] The reader might wish to consider the loss to Canada if INCO's profits were reduced as a result of lower nickel prices.

place the precise location of which may be the end result of a sizable and costly exploration effort.

2. If a collective regime is established, say under the United Nations, the private operator may find himself afflicted with various unanticipated burdens ranging from meeting certain "environmental" requirements, the payment of nominal or substantial royalties, or even outright prohibition of private operations.

If there were no risk that an international regime would subject private operators to unanticipated onerous conditions, they probably could do rather well with reciprocal agreements among countries to respect the rights of each other's licensees (to use one possible terminology). Whether uncoordinated legislation by each of a number of countries from which operators might come would be adequate is not clear to me, however, for much would depend on the definition of the rights in the various laws. It would seem quite possible that the definitions might be inconsistent. It might be necessary to negotiate a treaty first in order to insure the compatibility of the separate national laws, such as the one already introduced into the U.S. Congress.[9]

While I would not pretend to evaluate the chances for this proposal as it stands, it does seem quite possible that we shall see a number of more or less coordinated pieces of national legislation which will provide the private operator with a measure of tenure (at least protection against incursions from operators of the same country or of a cooperating nation) and which might provide some degree of "insurance" against the risk of adverse action by any international regime that may be established.

The fact is that we are all in a very difficult situation. It is hard to see the wisdom in letting the nodules sit there until an agreed international regime comes into being. This might be a long time. From the point of view of private enterprise *or* of a government that wants to start exploitation, the possibility of a regime that will be adverse to established operations is a serious worry. Perhaps the worry is less for a government, for it could refuse to agree to the proposed regime, but of course it might be coerced into doing so.

One possibility in this confused situation that has not received much or enough attention is that of unilateral extensions of full or limited jurisdiction if an international regime is not established soon. In the past, there were many who said that there was nothing sacred about a limit of three miles or even 12 miles. So also, it might be said that there is nothing sacred about 200 miles. The claim might just as well be made for 500, 1,000, or more miles. If there were very many such claims, the task of resolving the conflicts—which would be numerous—would be very difficult.

*International Ownership of Nodules*

Suppose that international "ownership" of the nodules is established. By international ownership, I mean that some international body has the recognized power to determine how and to what extent the nodules are to be exploited. How might it operate?

It is important to distinguish three things:

1. Determination of the rate of nodule output, this determining the extent of the fall in the prices of the metals. Output rate is the basic policy decision.

2. The mode of physical operation. Output rate plus the decision on mode of operation together determine the *size* of the take. For example, if a bad decision is made on how to conduct operations, costs may be so high that the take is zero or even negative. It is not as if the potential take were ripe fruit waiting to be plucked off a tree.

3. The distribution of the take.

There are many ways to organize operations once the decisions on output have been made. Without pretending to give a complete catalog, some of the possibilities follow.

*Auction of the privilege to operate.* The privilege could take various forms. For example, it might give the right to extract a certain quantity of nodules per year together with assurance of no interference with operations. Another possibility would be to auction the privilege of exploiting a certain defined area without restriction on rate of output. However, auction of general licenses to operate without restriction on the number sold or on production would serve to reduce the take very greatly except insofar as already existing knowledge would lead to competition for certain favored sites.

The provisions agreed on at the establishment of the collective regime would serve to distribute the take. Any number of possibilities might be envisioned. Indeed, it may well be that haggling over the division of a hypothetical take that may not turn out to be very great could delay for a long time the establishment of any sort of agreed regime.

While it is possible to describe the auction option in one sentence, we should be under no illusions about its simplicity of execution. We have said enough about price formation in this complicated situation so that further elaboration of the difficulty of the basic policy decision on output (assuming the

[9] 92nd Congress, S.2801.

objective is maximization of the take) is not needed. Apart from that, administration of an auction system of this type is far from simple.

One of the difficulties arises from the desirability of avoiding cases of low winning bids on properties which subsequently show high returns. Such cases often give rise to accusations of improprieties, although as I—and others—have argued before, they do not necessarily indicate "excessive" return, for the outstanding success with its highly visible profits may be balanced or more than balanced by the failures which are felt only by the stockholders or creditors of the corporations involved. If such cases are to be avoided in the auction of "concessions," or whatever you may wish to call them, it is necessary that rather accurate public information on the quality of what is being auctioned off be available. Only in this way can the owner rely on competitive forces to bring the rent on the property under auction close to the maximum.

Two policies that would help attain the objective of adequate public information for auction needs would need to be considered carefully. One is to require private or governmental explorers to disclose their findings. I do not want to discuss here the precise content of these possible disclosures, which might range from very little to a great deal. Suffice it to say that there is a great deal of experience with such requirements. They never add up to "complete" disclosure, of course, because the most valuable parts of exploration information may be the tentative conclusions or hunches that have been formed in the minds of those participating in the effort. It would be rather difficult to secure their disclosure, but disclosure of quantifiable (and some nonquantifiable) technical data can be enforced, and other interested parties, including the international agency itself, may be able to extract something of value from it. The agency would be interested in these data in order to formulate upset bids, for example.

It is possible that the international owner might wish to sponsor exploration work on its own account, making the findings public for an area which is about to go up for auction.

*The international owner might license anyone willing to pay a stipulated royalty per ton of nodules of specified quality.* While this reduces the amount of finance required at the beginning of an operation as compared with auction, it has the disadvantage of making impossible the exploitation of some deposits of low quality that otherwise might be profitable and also of reducing the rate of recovery from any given deposit. If, for example, the areal density of nodules falls off gradually toward the boundaries of a deposit, the actual area mined will be smaller with a royalty per ton than with an auction and substantial quantities of nodules will be left on the sea floor that otherwise could have been raised profitably.

*The international owner might lease certain areas for nodule production to particular countries, granting the leases for nothing.* The relative size of areas leased in this way would be a major element in the distribution of the take. The lessees might operate the properties themselves or sublease them to governmental or private operators.

It is my feeling that this option is inferior to the first two since it places a great deal of reliance on the acumen of the lessees. The overall output would still be determined by the international owner through the size of the areas leased, but whether governments with no experience in the administration and exploitation of mineral-bearing lands (bottom in this case) could hold their own in negotiations with more sophisticated governments and private corporations is at least doubtful in view of the history of the minerals industries.

*An international owner could operate on the basis of service contracts.* While many people use this term, service contract, as if it had a definite meaning, such is not the case. The real question is the degree of discretion given to the contracting firm or firms. Thus a service contract regime could vary from one in which all contracted services are of a rather routine nature to one in which the contracting firm has a great deal of discretion, even up to the point where he agrees to mine and process the nodules on a certain site for, say, a fixed or variable fee with all operating decisions left to him.

*Direct operation by the international owner.* If contracting service firms have little discretion, the service contract option merges into this.

While direct operation might give a chance for direct participation of underdeveloped countries in operation, it is far from clear that this is a particularly desirable objective. Is competence in the various aspects of nodule technology a really good thing to have or is the effort better invested in something else, such as family size limitation, control of erosion, or varietal research?

Apart from this, somebody among those financing the birth of such an international operation is going to raise the nasty question of who pays the piper in the case of losses. Even if there may be a positive take under some modes of operation, there is no assurance at all that direct operation could capture it. Indeed, the fact that there is no international organization with any experience to bring to the task

raises a serious question about the viability of this option.

## CONCLUSIONS

From this recital of problems, it seems clear that the potential social gain from the exploitation of nodules may be quite large. The fundamental problems in organizing to reap this potential gain are obvious: How is the gain to be divided and how are operations to be organized? These problems are obvious but also very difficult. They are problems which many would prefer to ignore if we may judge by the frequency with which they are covered over by a phrase like "using the seabed resource for the benefit of all mankind," indeed, using the seabed resource not only to attain this general and unexceptionable objective, but a number of lesser ones, such as price stabilization, economic development, advance in technical competence, and so on.

The parties at interest in the division of this pie, whatever its size may be, are, first, the consuming countries. For the commodities involved in nodule production, this means mainly the developed countries. And, of course, they have a consumer's interest whether they consume nickel, etc. directly or only indirectly in products that are made somewhere else. Second, there are the countries presently producing these commodities, some of which countries are underdeveloped but not all. In no case, however, does it seem that such production is a really major mainstay of the economy of any producer except for copper, and, as we have seen, it is unlikely that the effect on the price of copper will be very great. Equilibrium in nodule production very likely will have been attained through fall in the prices of nickel and cobalt long before nodule production bears very heavily on the copper market. Third, there is the rather large group of countries that are neither consumers nor present producers to any significant extent but who feel that they, as do other countries, have an interest in the nodule pie. Finally, there is a small but important group of business firms and governments that have direct interest in nodule exploitation either because they own or hope to own patents on some of the processes involved or because they possess skills that can earn a return if engaged in one or more of the processes involved in nodule exploitation.

Let us review the main possibilities for the organization of production and the distribution of the gain from nodule exploitation.

1. If an international regime is not established and reciprocal recognition provides sufficient stability for private (and national governmental) exploitation, the long-run prospect is one of price reduction to the level of costs, with the social gain going to consumers in the form of lower prices.

2. If an international regime is to be established, part of the process of establishing it will necessarily be agreement on how the regime is to operate, both in a physical sense and in the sense of dividing the social gain. The possibilities are numerous:

A. Issue of licenses without restriction to private firms and governments. The results would be about the same as with reciprocal agreements and no international regime.

B. Issue licenses to private and governmental operators but in such a way as to limit nodule output (e.g., by auction of licenses, by leasing tracts directly to *all* governments, by tax). Although there would be some price fall, a sum of some magnitude might be generated which could be distributed among the claimants. On what criteria? Should the payment be related to population? Per capita income? Consumption of metals produced from nodules?

C. Direct physical operations by the international agency, either exclusively or together with limited licenses issued to private and governmental operators. There could be provision for participation in actual operations by personnel from underdeveloped countries.[10]

A surplus *might* be generated under this option, depending on how efficient the operating authority turned out to be. One of the questions to be considered before this option could be established is the financing of deficits. Without clarification of this point, it would be difficult to finance the birth of the operation.

Clearly the problems of reaching a consensus are formidable. Let us hope that the discussions at this conference will help to promote an agreement which, if not strongly supported by all, at least does not arouse adamant dissent.

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[10] See the paper by Zuhayr Mikdashi, for example.

## Remarks

*Sergio Thompson-Flores, First Secretary, Brazilian Mission to the United Nations, New York*

**Tuesday morning, June 27**

I had prepared some observations on what I believed was to be the main subject of discussion this morning—the proposed interim policy for the exploitation of the seabed beyond national jurisdiction, prior to the establishment of an international regime and machinery. However, I will also offer some very short comments on the economic implications of such exploitation.

Before discussing the relative merits or demerits of any given proposal, I believe it necessary to consider briefly the desirability, or indeed the propriety, of envisaging any kind of interim arrangement, at least until an agreement is reached on the type of regime and machinery we ought to have.

Mention has been made of provisions in existing international law which would be applicable to the exploration or exploitation of the seabed and ocean floor. The 1958 Conventions on the Continental Shelf and the High Seas have been specifically pointed out as either making provision for, or, by their silence, allowing these activities to be undertaken.

In this respect, it should be noted that these Conventions, as expressly recognized in their preamble, codify existing principles of international law, and cannot thus be construed as creating rights covering activities which were nonexistent and indeed unforeseen at that time. In fact, when commenting on the provisions of the draft which was to become the Convention on the High Seas, the International Law Commission pointed out that with regard to the freedom to explore and to exploit the subsoil of the high seas—which is a different case from that of the subsoil of a continental shelf—exploitation or exploration had not yet assumed sufficient practical importance to justify a special regulation.

It is thus clearly implied that a special regulation would be necessary once the undertaking of activities in the area were concretely envisaged, and that these activities would necessarily be conditional upon the establishment of such a regulation.

Furthermore, the fact that the United Nations has been seized with this matter and has been dealing with it for a number of years is a clear indication that a new set of rules governing international behavior is now necessary to regulate the opening of this area for the benefit of all.

Finally, the United Nations General Assembly adopted a resolution by a majority of more than two-thirds of its members declaring that, pending the establishment of an international regime, states and persons must refrain from all activities of exploitation of the resources of the area.

Even if we set aside the question of states' responsibilities with regard to United Nations decisions, the indisputable fact remains that the so-called Moratorium Resolution reflects the considered view of the vast majority of world public opinion. Abiding or not by its terms is not a purely juridical matter; it has very definite political implications. In determining their future course of action in this respect, states cannot restrict themselves to considerations of a legalistic nature. Among the reasons which might seem to justify the creation of an interim arrangement is the feeling expressed by certain interested parties that the United Nations Seabed Committee has not yet entered into any significant, substantive work; they accuse that body of sitting on its hands. This is definitely not a correct appraisal of the situation.

A significant step was taken in the direction of an international regime with the adoption, without dissenting votes, of the Declaration of Principles, recognizing that the area and its resources are the common heritage of mankind. Discussions—very constructive ones, I might add—are taking place, on the one hand with regard to translating the provisions of the Declaration of Principles into treaty articles and, on the other, to the type of machinery to be established.

Doubtless different approaches exist in this respect, but I see no reason for not being optimistic. Many different drafts or points of view have been put forward and, in the near future, further negotiations should be able to narrow or bridge the gaps between the various divergent proposals. In any case, progress has been encouraging.

We are, however, witnessing an effort on the part of certain pressure groups within the developed countries to place a *fait accompli* before the international community. In disregard of existing principles of international law and world opinion, these groups

wish to obtain their respective government's endorsement of their plans to force a certain *modus operandi* corresponding to their particular needs on the vast majority of mankind. Their idea is to lay down through practice the rules they would want others to respect in the future.

Thus, the interim regime we are examining seems nothing less than an attempt by some large industrial concerns to force the international community, through its negotiating forum, the UN Seabed Committee, towards the adoption of a predetermined set of rules.

But what are these rules? What do they seek? What is the philosophy behind them? We need not go very far to find an answer to these questions.

As we all know, the industrial complex of developed nations depends to a very large degree on imports, especially in commodities such as copper, manganese, nickel and cobalt. Mining operations in these mineral-producing countries—mainly developing countries—were controlled totally or to a great extent by large foreign corporations.

Over the last few years, however, a process of transformation has been in evidence. This has resulted from an understandable desire on the part of the developing countries to exercise their legitimate sovereign rights over their national resources to maximize their utilization, thereby enabling them to meet their requirements for economic and social development. To make up for this progressive loss of control, the large industrial corporations are turning their sights to an untapped and potentially rich source of raw material—the ocean space—seeking to create by all available means, including unilateral action or in association with what they call "responsible" countries, a sort of juridical framework, a system which will institutionalize their control over those resources.

A cursory examination of some of the proposals or opinions now before the UN Committee seems to show that the ideal machinery, in the view of the developed countries, would be a sort of registration office, which would issue licenses to individual operators—and in the future these would presumably all come from developed countries—guaranteeing them security of tenure and liberty of production and marketing.

Furthermore, to make things foolproof, a system is proposed in great detail whereby effective control of the machinery is ensured by the most highly industrialized powers.

This is in flagrant contradiction with the principle of the common heritage of mankind. It is also an attempt to perpetuate a system of power politics whose objectives are the maintenance of the political and economic *status quo*. The few rich industrial societies would ensure themselves additional means of remaining forever rich, while the vast majority of medium and small countries would wield no effective decision-making power to enable them to progress towards their economic, social and political objectives.

Pending a decision on the type and powers of the future international machinery, any initiative towards the creation of an interim operating procedure would amount to an unacceptable attempt to exercise a biased pressure on the preparatory work of the future Conference on the Law of the Sea.

Speaking always in my private capacity, and in answer to a question which I put at the very beginning, I might say that to even consider at this stage any interim policy would, beyond being objectionable from an ethical or juridical point of view, certainly turn out as an unproductive exercise.

Now, as regards the problem of the economic implications of the exploitation of the area, there are one or two comments I should like to make.

To begin with, the question of the distribution of benefits is one to which many people have addressed themselves in these last few years. Companies exploiting the area would have to pay some sort of a tax on profits, or royalties on production. These proceeds would then, in the view, it would seem, of developed countries, be distributed, or rather would be channeled to existing international agencies for economic assistance to developing countries, such as, for instance, the United Nations Development Programme. The developing countries, on the other hand, believe that these minerals which lie on or under the seabed are the property of every human being and that the profits from their exploitation should not be utilized solely for technical assistance or economic assistance purposes, but must be distributed to every state according to a plan which has still to be worked out, and which will take into special consideration the interests and needs of developing countries.

But furthermore, these benefits are not only of a financial nature. There are benefits in technology; any company that operates in the area will, by the force of things, develop its technological ability. And in the view of the developing countries, everyone should profit from this increase in technology.

Nevertheless, even in restricting ourselves to the financial benefits as far as operations on the seabed are concerned, a system must be devised whereby the future international organization be controlled not by two or three developed states alone, but by the entire international body of nations. It is vital

that the machinery be in constant receipt of detailed information on all aspects of activity relating to exploration and exploitation of the area and its resources. The international machinery must serve as an agency for the administration of that area under mandate of the owners of the resources; and owners are surely entitled to some consideration. A simple registry office where companies could obtain licenses would not presumably be adequate to provide the international community with the actual facts and figures relating to activities in the area, because of the problems of information referred to by the previous speaker.

A system is necessary to enable the future international organization to effectively participate in one way or another in the exploitation of the resources of the area. This does not mean that the international authority should set up its own mining enterprise which, of course, might be utopic in a certain way.

But there are other means, and in some countries procedures have been devised whereby private or state foreign enterprises are allowed to operate. They are ensured a profit that would justify the risk of the capital involved, but that assures on the other hand that the facts of exploitation are known. The profits of exploitation can thus be distributed on an equitable basis. These are the ideas which many of us have in mind when approaching the problem of the exploitation of the international seabed.

There is one other small point. The speaker who preceded me talked about compensation to developing countries which might lose proceeds from exports of minerals due to the exploitation of the seabed. This problem of compensation could be looked at from another angle. For example, a tax on operations could be paid to the future international organization, the proceeds from which could be either channeled to technical assistance programs, or divided directly among states, preference being given to the developing countries. But, if these monies are used to compensate one or a few developing countries for the loss of proceeds gained from exports, what will happen is that we would be subsidizing the companies that are operating on the seabed and the states to which they belong. Even developing countries receiving this money would stand to lose in the long run. They would be compensated, but their share in the total profit would be smaller, as well as the share of all the other developing countries, because some of that total profit would have been channeled to compensation.

This is clearly difficult to accept. Some other formula must be sought in order that the production of the seabed does not inflict undue loss on the developing countries, which are the main producers of raw materials.

These are the comments I wish to make at this stage.

## Remarks

*Bension Varon, International Bank for Reconstruction and Development*

**Tuesday morning, June 27**

First of all, I would like to take this opportunity to thank Mr. Christy for inviting me to attend my first Conference of the Law of the Sea Institute, and particularly for giving me the opportunity to meet face to face many of the distinguished participants whose names I was familiar with and whose work I have had the pleasure of reading.

I find myself in the uncomfortable position of one who has been up-staged by more eloquent and far more competent speakers. I find, moreover, no comfort in the fact that at least one seventh of the audience, the co-participants in yesterday's Discussion Group One, may already know what I am going to say, and I feel like telling Mr. Christy, "Did you have to institute these innovations this year?"

I am reminded incidentally of the story of a preacher (Hodja) who, before giving his sermon, asked the congregation: "All those of you who do

not know what I am going to say, raise your hands." Half the audience did.

He then asked: "All those of you who do know what I am going to say, raise your hands." And the other half did.

Upon which the preacher said: "Well, in that case, let the half that knows tell the half that doesn't know," and walked off the podium.

I am exaggerating somewhat; the truth of the matter is that I did not draw up any comments until this morning because I wanted to keep an open mind on this, maintain as much flexibility as possible, and learn.

Frankly, in the last 24 hours, I have learned a great deal about resolutions and U.S. bills, but very little about "viable" or "most probable" prospects for mining the seabed. I don't mean in any way to belittle the conference; in any case the problem may be primarily my own ignorance.

I say it simply with reference to what we have been saying yesterday, the numerous references to technological knowledge, and I want to submit to you that the developing countries have not only insufficient technological knowledge compared to developed countries, but also have insufficient knowledge of or about technological knowledge itself, and I think it is very important for the international community, or the academic community, the community of scholars, to transmit as much of this kind of knowledge as possible to the developing countries.

In the many international meetings, negotiations of agreements and so forth that I have attended, I truly find this to be one of the most important drawbacks that developing countries face in negotiating or in bargaining with other parties.

In this case, particularly, I think greater dissemination of knowledge is important; for example, in spite of the reading which I did over the last several weeks on the subject, I am still confused on some substantive points. I really do not know where the truth lies.

To give you some illustrations: some people claim that the technology for mining the nodules is fairly simple; other people claim that it is quite complex and thus presents certain problems for the developing countries. Some estimates point out that capital requirements are certainly much less in comparison to developing mineral resources on land; others, however, claim that capital requirements are substantial.

Some people say that nodule mining is around the corner, that it is practically risk-free; other people, including some commentators in the discussion group yesterday, say that we really won't know the truth until we actually start mining.

Some estimates—the majority of estimates in this meeting—indicate that the technology is there and that mining may begin in late 1973, early 1974; some people say it won't be with us until the 1980s, and a paper written within the last two weeks even suggests that this won't have an impact on the market until the year 2000.

Another question is: are we really talking about manganese and cobalt only, or are we saying that a greater number of metals will be affected? I find Mr. Herfindahl's analysis quite convincing: we *are* probably talking about manganese and cobalt, but if this is the case, then perhaps we should have a manganese meeting, or a cobalt meeting. I assure you that it will not be an easy matter; I attended one at UNCTAD in February, where the participants could not agree, A: on what the problem is; B: whether or not to establish some arrangements to exchange statistical information. Even that presented a problem.

Clarification of these points is particularly important in this case I believe, because the problem by its very nature requires an interdisciplinary approach. That is, the advice that will come to governments, which have to decide on policy, has to come from all sorts of specialists.

For example, the economic information which is sufficient for a lawyer to formulate advice may be less than what I would consider adequate, and by the same token, economists may overlook the legal difficulties, and so on.

Moreover, we are talking here about a highly emotional issue where, regardless of whether only manganese, or cobalt, or only three metals are involved, we are asking governments to adopt a policy, or to sanction a policy, which concerns the "common heritage," an area which has a highly emotional content. It is very difficult indeed to sell to governments, and I might add, even to institutions such as my own, ideas of this nature without a greater degree of knowledge.

Turning to my own institution, the World Bank, we have succeeded over the last few years in doubling our level of lending, and we hope to do it again in the future. But we are very much aware of the fact that if we want to help the developing countries, our task is not simply one of giving financial assistance, but also of formulating our own policies using the best knowledge available, particularly knowledge which stretches the horizon.

We have not done, quite frankly, any substantive amount of work on the subject in question, one obvi-

ous reason being that our sister international organizations, whose domain it appears to be at the moment, are there. But naturally, we are following these developments with great interest. I am not in a position to venture what role the Bank might take in the future, and this perhaps is the proper place for me to say that what now follows represents mostly my own views and not necessarily those of the World Bank.

Yesterday several people quite rightly drew our attention to the difficulty of defining what a "developing country" is. I think it is a legitimate question; it can be important, but being from a developing country myself, I have not really seen my case hurt by lack of a proper definition, particularly in the case of countries where the level of underdevelopment is obvious.

But I would like to define another term, if I may, which I think is important, and this is the term: "needs and interests of developing countries"—the theme of the Conference.

I notice that in a recent UN document reference was made to the interests and needs of developing countries; the order here is reversed. I don't know whether incorporating this into the theme of the conference was the direct result of this conceptualization; in any case I cannot determine how the original source used the term.

However, one does not really need to engage in a complex definition. The needs and interests of developing countries obviously are to improve their level of development, economic, social and other, to close the gap between them and developed countries.

I say this because if we are sincere about the theme adopted for this meeting, the idea is not to leave the developing countries at their present stage, it is not simply to minimize their losses. What the developing countries desperately want are solutions which *advance* their condition, which in fact *increase* their rate of growth, *increase* their standard of living.

Now, if one defines the needs and interests of developing countries in these terms, that is, not simply in terms of not wanting to hurt them, but in the gut form of really wanting to improve their level of development, accelerate growth rates, then, to tell you the truth, I begin to have sympathy for the so-called Moratorium Resolution.

I have not done sufficient work to be able to say —and perhaps I don't have the courage to say—that I outrightly support the Resolution. Obviously there are disagreements as to how much meaning it has, to begin with. What I am suggesting is that I can understand the motives of the developing countries very well indeed in favoring the Moratorium Resolution. I can understand this for various reasons.

To name a few: first of all, if one uses my definition of the needs and interests of developing countries, there is really no solid evidence that mining the seabed will contribute to promote those needs and interests in a marked way. I am not suggesting that there may never be some benefit to them from this. I am not saying that developments cannot be modified toward that end. But until now (on the basis of the very competent analysis of Mr. Herfindahl, and I am referring here to Part 1 which I had the pleasure of reading and which I recommend very highly), there is no evidence that, on balance, even if you weigh several alternatives, the developing countries will benefit in a positive way. I mean, of course, not in terms of cutting their losses but by moving forward as a result of the mining of the seabed.

The estimates which have been thrown around informally about the size of the tax or what the industry has in mind are quite discouraging. On the possibilities of who will produce the nodules, any realist will subscribe to the view that it will be very unlikely that the developing countries in any major way will participate in the production of the metals. It is after all the developed countries that have not only the technology, but also the capital, without which you cannot really utilize the technology.

I can understand the developing countries' position also because in a sense there is such bad timing involved, if one considers the history of disappointments or of revised expectations of developing countries. This is a time when the world has been making some progress in redressing the balance in mineral exploitation. Up to now in certain commodities where developing countries have a large portion of world reserves, their production has been quite insignificant. I think nickel is a good example. I did a small paper on the subject recently and the figures are fresh in my mind; if one were to classify New Caledonia as a developed country, developing countries produce only two percent of world output, but have, by the most conservative estimates, one fourth of the world's reserves.

This is also the time when large investments have been made in developing countries in exploiting their mineral resources. Brazil is one of them; also several African countries, including countries with limited production opportunities, such as Botswana and many others. These countries are not the major consumers of these minerals—any statistics will show that—nor are they likely to become major consum-

ers in the future, though it is probably true that they could consume more if they could afford to buy more. By and large the commodities in question will continue to be consumed by developed countries. There is, moreover, really no imminent shortage of many of these metals.

This is also the time when progress toward increasing foreign aid has been stalled for various reasons, or at least has not come up to expectations, and when even progress toward gaining greater market access in some cases has been short-circuited.

In this sense, then, one is very much disturbed, particularly reading between the lines in Mr. Laylin's paper, where there is a suggestion even if not intended, that raw materials really give power to the developing countries. What power? Now I know that everyone has OPEC in mind, and I won't engage in an analysis of OPEC, not when Zuhayr Mikdashi is in the audience; but I think it is quite an exaggeration to say that by and large developing countries have any economic power, and that what power they have derives for the majority of them from ownership of raw materials. In fact, a suggestion has been made by one analyst in the press that some U.S. circles were quite *happy* with the recent OPEC action, for a number of reasons.

Moreover, if I were to put myself in the shoes of the developing countries—and I am just acting as the Devil's Advocate for a while—one sees that, perhaps, they are caught in a power game among the developed countries themselves. I have just come from Japan, and also spent a week in Europe, talking to several minerals-consuming industries, and I am aware more than ever of the competition for raw materials in developed countries which is taking place, motivated largely—particularly in Europe, not so much so in the United States—by fear of the insatiable Japanese appetite for minerals. This, I think, is something which has been finally brought home to governments, and there is a race, really, to offset the raw material advantages of Japan by perhaps imitating their policies, long-term contracts and the like.

So, by and large, one can argue that what is leading some of the developed countries who have been showing a great deal of interest in the subject is really the notion, or objective, of securing new sources of supply from "politically stable" countries. As Mr. Thompson-Flores quite rightly suggested, nodule mining is regarded as a new ballgame, and the country which develops it first will have some advantage in competing in the exports of manufactures with other developed countries. And the developing countries, one might argue, have been caught in this.

The most frequent argument set forth by those supporting some type of national action is that if we do not act, if we don't have an interim regime or a permanent regime, industry will go ahead anyway.

This may be true, but it is one of those truths which it pains one to hear, because if in fact the industries are so powerful in terms of capital, or in terms of lobbies, one wonders what power they will have even after an interim regime is adopted. One can perhaps make an analogy here between the development of nodules and the development of some synthetic raw materials—let us say synthetic rubber or synthetic fibers.

As you know, there is no international agreement on the agricultural commodities competing with synthetics that I have mentioned, and one of the reasons very often given by developed countries is that they have no control over the companies that produce the synthetics and therefore cannot enter an agreement which would be binding on them.

I know I may sound quite a bit negative, but I want to assure you that I am not addressing myself to whether or not there should be an interim regime or a permanent regime. I think some regime which satisfies all countries is desirable, the sooner the better, but one should try to avoid being in a position of hypocrisy in terms of promising the developing countries too much and not delivering enough.

After all, if the developing countries which already have had a number of disappointments in their progress toward improving their standards of living do not want to jump into a decision which, by all indications, has on balance a negative effect, I do not think this position is so difficult to understand.

I know that Mr. Christy in particular has been anxious for me to comment on production controls; I am afraid I am going to disappoint him, because I really think that a discussion of the forms of production controls which may be necessary is extremely premature. The best way I can illustrate this is by noting that even in commodities about which we have extensive knowledge and where countries' self-interests are clear, even there, it has been extremely difficult to reach agreement. Thus, in light of the present uncertainties, to discuss the possibilities for, or the right form of, production controls is really very premature. After all, the first prerequisite for a country to consider some type of agreement is its ability to see very clearly where its interests lie. Many of the developing countries do not have at

present sufficient information to define where their interests lie.

But I would like to make one suggestion, if I may, really as food for thought. Let me say beforehand that obviously there should be *some* type of production control, and if you read Mr. Herfindahl's Part 1 carefully, a production control that involves minerals both obtained from the seabed and mined on land.

The idea that I want to throw at you is that perhaps there should be an agreement which determines the proportion of metals from nodules that a country can consume. That is, countries might agree that a maximum of "x" percent of their consumption may come from minerals won from nodules. The agreement must also cover consumption, not only production. This, I think, provides certain flexibilities in dealing with the problem.

The response to this proposal would in fact provide a true test of some of the arguments I have set forth concerning the "real" motives of developed countries in promoting these minerals. It is quite fair; the problem of determining who mines the nodules while still a formidable one ceases to be of overriding importance with the above as a pre-condition. For it is my strong belief that the race to mine nodules is prompted primarily by the potential savings and competitive advantages it can provide consumers rather than by the earnings it will generate for producers.

While this kind of proposal might not form the basis of an eventual agreement, it opens up new ways of zeroing in on this very difficult problem.

## Discussion

**Tuesday morning, June 27**

*BEESLEY:* The first speaker outlined one particular option. The second speaker outlined another, and the third speaker outlined an alternative option to the first. The fourth speaker attempted to look at the range of practical implications, from a very realistic point of view, of any successful approach.

I would like to point out that at least one option does not seem to have been referred to in anything I have heard this morning. I am talking about the option which Canada put forward in our statement in the Seabed Committee of March 24, 1971, and which we subsequently put forth in the form of a working paper, Document 138/59 I think it is, of August 24, 1971, of establishing a transitional regime and machinery.

The reason I mention this is that I think it is worth recalling that the reasons we have heard advanced against interim machinery did not necessarily apply with respect to all possible types of transitional regimes; nor on the other hand do the reasons for prompt and perhaps unilateral action necessarily carry weight if there is an alternative other than a final and conclusive Law of the Sea conference.

Perhaps there is a necessity for early action of some sort. I suggest, however, that it is not clear at this stage that action required must be of the sort proposed by Mr. Laylin, or necessarily the final definitive, comprehensive total package which we heard described by Mr. Thompson-Flores.

I consider that unless something relatively radical occurs at the next session of the Seabed Committee, we will be faced with certain options, certain choices, and there is a middle one; I don't suggest that the proposal which Canada has put forth provides the ideal answer, but I suggest that there is a possibility of a middle approach and that that proposal and others which may be put forth are well worth considering. Like many others here, I suspect, I am worried that the two most difficult problems facing us this summer—the list of issues problem and the Kuwaiti Resolution—could together break up the conference. They could actually cause us to lose any real possibility of a successful Law of the Sea Conference.

I suggest that that particular result would benefit no one. On the other hand, a sensible approach to

the problems raised by these two questions, a real attempt to seek an accommodation, could lay a very good groundwork for a Third Law of the Sea Conference.

So I think, in a sense, that we are coming to a time of crises, and I would just suggest now that we hear from those present on some of the implications of the options presented as well as their particular points of view on the best approach.

*ANAND:* I am Anand, from India.

My comments are directed to the paper of Mr. Laylin and, let us say, his defense of this Metcalf Bill, which has been introduced into the Senate.

There is no doubt that already weak and frustrated as many of these underdeveloped countries are, they are being forced, through this bill, to enter into an agreement immediately; otherwise, they are being told, they will get practically nothing, and the exploitation of the seabed beyond national jurisdiction will continue.

It is very well known, of course, even if it had not been known so well during the colonial period, that agreements, if they are to be lasting, must be based on free will. There is no doubt that the smaller countries want to become partners in development, and not to live on the dole always, or alms. They do not want to be at the receiving end all the time—some aid, and more brickbats and ridicule.

I am sure that the big powers must not get upset when the smaller countries demand something as, for example symbolically speaking, bicycles, when the bigger industrial powers have got jets already.

It is true that they cannot assert themselves by force, but do not forget that the weak have their own strength. The strong must be careful not only about the might of the big powers, but also about the strength of the weak, because, as a great Indian poet, Tagore, said, the weak are a great danger for the strong. They are like quicksand to elephants; they have an almost unlimited power of nuisance if they are not helped. Their strength lies in the fact that they do not cooperate, they merely drag down. And this is just what is likely to happen if there is no agreement on these issues and the so-called Moratorium is not accepted.

*HUNT:* Cecil Hunt, Overseas Private Investment Corporation, generally known as OPIC and not to be confused with the OPEC of the oil-producing countries.

In the prepared text for Mr. Laylin's remarks, there was a reference made to the possibility that the interim arrangements now proposed might include some OPIC-type of insurance. As many of you know, the Overseas Private Investment Corporation is a United States Government Corporation set up to take over the programs of political-risk insurance and private enterprise project financing that had been operated for a number of years in the Agency for International Development.

The particular proposals, the Metcalf Bill and others, are ones on which my corporation has not taken a position. I expect that we will contribute to the formulation of the position of the Executive Branch; but notwithstanding that, and going beyond the specifics of any particular proposals now under consideration, the experience of OPIC and the experience of other national investment insurance programs in dealing with unusual types of risk-coverage, political-rich coverage, and in dealing with insurance in areas where even the underwriters at Lloyd's will not tread, probably points with a certain inevitability to the conclusion that under any type of arrangement, whether it be a unilateral interim regime or, hopefully, an agreed international regime, the particular experience and expertise acquired in this field will be brought to bear.

Having heard the comments of the various panelists and participants, I hope that OPIC, with its experience in being a buffer between the interests of developing countries and the interests of investors—and it has been an effective buffer, I believe, in a number of expropriation situations—may sometime provide, whether through an advisory or participatory role, an effective buffer in balancing the interests presented by these knotty seabed problems.

Part of the OPIC legislative mandate is to contribute to the United States foreign assistance effort. We were, however, set up as a corporation to run on a businesslike basis, and we suffer perhaps a little organizational schizophrenia trying to achieve that balance, but that is just the kind of cross-pressure that is obviously present in this marine resource problem.

I hope that with advice from all interested parties, the possibility of insurance of the peculiar political risks that such ventures involve will be a challenge that can be responded to creatively and helpfully.

*GORALCZYK:* I would like to confine my remarks mainly to the problem of lex lata of deep sea mining; that means what the international law is.

In the discussions in the United Nations organs, several developed states and most of the socialist states represented the opinion that international legal rules now in force, including the principle of the freedom of the seas, apply to the research and exploitation of natural resources of the seabed and

ocean floor beyond the limits of the continental shelf.

In other words, until the adoption of international legislative measures to the contrary, every state can conduct exploration and exploitation of mineral resources of international areas of the seabed and ocean floor, provided it observes all those restrictions which are stipulated by the existing rules of international law concerning such an activity.

For instance, free access to these resources and their free exploitation by all states is the consequence of the principle of freedom of the seas. This exploitation must be carried out in such a way as not to impede the other users of the high seas, particularly in navigation and fishing.

Again in other words, the existing norms of international law constitute a legal framework for the activities of states on the seabed and ocean floor. In my opinion, there is no legal vacuum in this regard.

The basic element of the legal situation of these areas is the fact that they are not subordinated, they are not subject, to the jurisdiction of any coastal states. That means that they are accessible for exploration and exploitation carried out by all states, or with their authorization.

Some of the developing states represented a different point of view. It was inconvenient for them to recognize the present freedom of exploitation of mineral resources of the international area of the seabed and ocean floor. These states do not have any means at their disposal to avail themselves of this freedom, and they would not benefit from an exploitation taken up by others.

On the contrary, the undertaking of such an exploitation could even be disadvantageous to them. The developed countries could exhaust the riches of the most easily accessible mineral resources in international areas, keeping their own interests in mind.

The developing countries, expecting future revenues and benefits from exploitation of mineral resources of the seabed and ocean floor beyond the limits of national jurisdiction, and on the other hand not possessing technical means and capital indispensable to begin such an exploitation, attempted to suggest such a legal settlement which would guarantee their benefitting from exploitation of those areas.

Such attitudes must be considered right and justified from the political point of view, for one can hardly accept a situation in which the resources of these areas would be exploited and utilized by the most developed states only.

However based on correct premises, some of the developing states put forward, in my opinion, legal concepts which were contrary to the principles of contemporary international law. The legal situation being such as I have described above, we must admit that the existing norms of international law are not satisfactory for the developing countries, as well as for other countries not technologically developed enough to start the exploration and exploitation of the deep sea mineral resources.

I would like to add that for instance my own country, Poland, is among those states.

But in my opinion the only remedy, and the only possibility to change this unsatisfactory legal situation, is the adoption by the international community of new rules for the exploitation of the deep sea resources. The nucleus of such rules may be found in the Declaration of Principles adopted by the 25th Session of the General Assembly.

But the Declaration, as a resolution of the United Nations General Assembly, is not legally binding on member states, the less so of course on states which are not United Nations members, because the General Assembly has no legislative power.

The Declaration of Principles therefore cannot change the existing rules of international law, which apply to matters rigidly in this way. It seems to me that the only way to introduce the concept of the common heritage of mankind into the body of rules of international law and to secure the equitable sharing of benefits derived from the exploitation of the seabed and ocean floor beyond the limits of national jurisdiction is—using the words of the Declaration—". . . by the conclusion of an international treaty of universal character generally agreed upon."

*BEESLEY:* I am going to take the liberty of suggesting how we might focus our discussion.

As I see it, the points that have been brought out raise only four or five really central questions. One is when we act. That means in essence whether we attempt some kind of transitional approach for the time being or whether we don't; whether we wait until we have fully elaborated the treaty regime. That is the first question.

The second is how we go about it now or later. Essentially it is a question of unilateralism (or reciprocal unilateralism) or the multilateral approach, the treaty regime approach.

I think the next question that we ought to be addressing ourselves to, given our particular topic, is the nature of the resource-management system we would be developing one way or the other. It would seem that there is fairly good reason to believe that the kind of resource-management system which might be effective for the exploration and exploita-

tion of petroleum may not be wholly applicable to the kind of problem we are talking about today—nodule mining. There may be special requirements needed.

The final question I suggest is the one that could obviously take us as long as it has taken the Seabed Committee, and that is the essential nature of the regime to be developed, either by a series of unilateral acts, coordinated or uncoordinated, or multilateral.

*REBAGLIATI:* I am Orlando Rebagliati, of the Argentine Mission to the United Nations.

I just want to make a brief comment on the good speech of Mr. Laylin this morning. I think that in this particular question of the interim regime there are two main questions involved from an international relations point of view. I think one is the legal discussion of this matter and the other one is the political aspects.

In regard to the first one, the legal discussion, several opinions have been made here, some of them by Mr. Laylin, some others by Mr. Thompson-Flores, and I am sure some others will be heard later on.

I think it is very hard to decide which side the law is on, namely, the side of the interim regime or on the side of the Moratorium. I am talking about the international law, of course, not national laws.

The Geneva Conventions on the one hand bound only several states of the international community, which are not the majority, and interpretations from the Geneva Conventions can be made in both ways, favoring the Moratorium or favoring the interim regime.

Mr. Laylin said that what is not prohibited is allowed, and other opinions said that what is not allowed is prohibited. Of course, international customary law, the traditional four freedoms, do not include freedom of deep sea mining offshore.

But as I said before, I think it is a very difficult matter to decide, and I am afraid we won't be able to do so here. In any case, there are in these cases several means of settlement. We all know the peaceful means for settlement of disputes; this implies that any country can decide juridical matters which involve other states on its own. But this general problem has to be solved with the agreement or through the peaceful settlement of disputes.

One of those means is the International Court of Justice. I don't see, from a theoretical point of view, any inconvenience now in going to the Court to ask for an opinion on this matter, a legal opinion. Not a trial, of course, but a legal opinion.

Another principle well-known and recognized by all the states in international law is the principle of good faith. All the states have to behave in good faith in their relations with other states and obligations have to be accomplished in good faith.

A consequence of this principle of good faith also recognized by the international community is that while states are holding negotiations on some issue, they have to refrain from any actions which can prejudice or influence such negotiations. In daily business life this principle operates in a rather rough manner, but to translate for those who do not have a legal background, this is the principle of fair play.

From the political point of view, I see also a great deal of importance here. What has to be considered by any state that is inclined to unilateral action in this matter is the political cost of such action. That political cost can be loss of the prestige of that country in the international community; not only loss of prestige, but also the reaction generated against that country because of its actions. That reaction, of course, can provoke another answer from the first country, and so on, which of course will lead probably to a very difficult situation for friendly and cooperative relations among all countries.

I think both considerations have to be taken into account, and I would stress the importance of this last one, the political one, because I think the main task at this stage for the international community is to preserve relations among the states from all struggle and, most of all, from all forced action.

*LOGUE:* My name is John Logue, of Villanova University.

A couple of weeks ago I testified before the House Merchant Marine and Fisheries Committee against H.13904, the Deep Seabed Hard Mineral Resources Act. As you know, the Senate number for the bill is S.2801. I want to make some brief comments which parallel the testimony I gave before that committee. My first comment has to do with the "how."

I think it is very important that deep seabed resources policy be made by the international community and not by a small group of powerful nation-states. The development states are greatly tempted to go it alone. But "going it alone" has a price. Some 150 years ago a British Foreign Secretary, Stratford Canning, pulled his country out of the Quintuple Alliance, a modest but important attempt to build a European security system. As he did so, Canning coined a famous epigram: "Every nation for itself and God for us all." Britain had decided to go it alone. But some ninety years later, in 1914, Britain paid a heavy price for her refusal to help build strong international institutions.

The United States can take a lesson from Britain's "go it alone" experience. For passage of the Deep Seabed Act would torpedo the possibility of a deep seabed regime under international sponsorship and would probably torpedo the possibility of a successful United Nations Conference on the Law of the Sea. And if we torpedo that Conference we are torpedoing a development which could significantly strengthen the United Nations and could provide some funding to strengthen the UN's peacekeeping capacity, a matter of immense importance to the United States and, indeed, to every member of the UN.

So I think it is very important that deep seabed policy be made by the international community, even if this means an interim regime: It must not be made by a few rich powers.

Now let me say a word as to the "when." I think the ocean regime should be set up as soon as possible. I have talked with my good friend from Brazil, Mr. Thompson-Flores, and I think I agree with almost everything he has to say on the deep seabed question. But let me say that I am opposed to the Latin American or any claim to a 200-mile limit. And I regret very much the unilateral way in which those claims are made. Indeed there is a certain poetic justice in the unilateralism of the mining companies with respect to the deep seabed, corresponding to the unilateralism of certain coastal states in claiming a 200-mile limit.

It is my hope that if the Latin American states will not come in from their 200-mile claims they will at least agree that the international community must get a generous percentage of the benefits inside the 200-mile line. If they agree with that I think we may get a convention or a Conference much sooner.

Now a word or two about the ocean system we are designing. It seems to me we should give some real thought to the proposition that international controls on production and pricing are desirable. In his remarks, Mr. Laylin suggested that low commodity prices were in the interest of almost everyone and he implied that unlimited production was also a desirable thing.

But are low commodity prices and unlimited production really so desirable?

I would be very interested to hear Mr. Laylin apply his logic to domestic oil prices and production in the United States. As we know, the amount of oil produced in Texas each year is limited by the Texas Railway Commission. And I wonder whether he would also want to get rid of the price supports we have on wheat and tobacco and other farm products. I think that to abandon these programs would be to return to the laissez-faire world of the past, a world which we can't go back to and should not go back to, even if we could.

My central point is that we must be willing to shoulder some of the burdens which may come with an international regime, with an international solution to the ocean problem. In the short run it might be much more efficient to have the problem dealt with by the great powers themselves. But often things which are clever in the short run are not wise, and I am sure passage of the Deep Seabed Hard Mineral Resources Act would be just that: clever but not wise.

*DE SOTO:* I noticed something in Mr. Laylin's written statement, where he says:

> It has further been declared by the vote of delegates of many nations to the General Assembly that any lesser rights acquired by activities on the seabed shall be subject to any international regime hereafter agreed upon.

He has not actually mentioned the Declaration of Principles on the Seabed, Resolution 2749 of the General Assembly, but I do believe that is what he is referring to.

So I would like to quote directly from the Declaration of Principles, which says in paragraph 4, that:

> All activities regarding the exploration and exploitation of the resources of the area, and other related activities, shall be governed by the international regime to be established.

In paragraph 14, the first sentence says:

> Every state shall have the responsibility to insure that activities in the area, including those relating to its resources, whether undertaken by governmental agencies or non-governmental agencies or persons under its jurisdiction or acting on its behalf, shall be carried out in conformity with the international regime to be established.

Now, we are talking about a future international regime, and though it can be disputed that this is international law—we have heard quite a bit about the lex lata today—I do believe it represents a moral and political commitment on the part of states which backed the Declaration, at least on the part of the Executive Branches of those states, to abstain from any sort of activity and to withhold their nationals from any sort of activity until such a regime is established.

Professor Goralczyk, of the University of Warsaw, who represents Poland on the Seabed Committee, has told us that he believes that the best way to set up a regime is through the United Nations Seabed Committee, and in the normal codification process; though his country along with other Eastern European states abstained on the Declaration of Principles, I take this to be a commitment of good faith, such as my good friend Rebagliati was talking about.

Now, Dr. Logue of Villanova University has given somewhat even-handed treatment to Latin American countries with 200 miles and the mining industry of the developed nations. I don't think that states and private firms can be treated evenhandedly or on the same footing in international law. Professor Laylin has spoken of a minority of delegations of member countries of the Seabed Committee who are delaying the preparation of a conference on the Law of the Sea because of the repercussions which exploitation of seabed resources may have on their own exploitations.

I think it has yet to be proven that there is any delaying, that there has been any delaying behind or contained in the expressions of concern of countries which are exporters of raw materials which may come from the seabed. I think this has yet to be proven.

At any rate, Professor Laylin's affirmation that there is a declining share of control by developed countries in the production of minerals is, in my view, anything but alarming.

*LAYLIN:* On this question of good faith, I am in complete agreement that you should not prejudge something when you are negotiating, and I would add, in good faith. You cannot stop the technological progress in the ocean by dragging out these negotiations.

Now, it was just said that it remains to be proven; for Heaven's sake, just go to any one of these Seabed Committee meetings and see how they are dragging it out. The United States and a few other countries are having a dreadful time persuading the rest of the group to meet in 1973 for a conference. Good faith requires that you move ahead on this.

Now, on the question as to whether or not the International Law Commission, in declaring what were the freedoms of the seas, included the digging up of resources from the seabed, in their reports of 1950 and '51, they specifically named that as one of the freedoms, in the comment. The reason it did not get into the text was because they said that there had not been enough practice for a customary regulatory law to arise.

Now, you can imply from that that you cannot do anything until there is conventional law. The other regulations in the High Seas Treaty are declaratory of the custom that has been recognized as binding in navigation and the laying of cables and so forth. There have not been any customs, but again, you can't imply from that that there cannot be a growing customary law of the deep seabed.

*THOMPSON-FLORES:* I won't address myself to the question of the eventual coverage which existing rules of international law might provide as regards the exploitation of the resources of the seabed: I think both opinions have been given on the subject during the last few years, and nothing will change them.

However, the fact remains that the majority of nations has clearly expressed its considered feeling that exploitation should not take place until an agreement is reached on the future regime. This does not apply to exploration activities necessary for technological progress, but only to the exploitation itself.

I would also like to comment on an observation that was made by Professor Logue about the question of the limits of national jurisdiction. I might point out that in my view this problem has always been looked at a little bit out of focus. We must keep in mind that up to this point, the question of limits has not, in any way, blocked work on the international regime. As far as the major industrial powers are concerned, the importance of the question of limits is not so much one of an economic nature, but is of political importance; the emphasis being on national security.

If limits are brought into the picture of negotiations on the future Conference on the Law of the Sea, it is specifically because these limits have to do with navigation for military purposes through international straits, and in the immediate vicinity of potential "enemy" states. But this point has very little to do with the future regime and machinery for the international area of the seabed.

On the other hand, a rather strange situation presents itself. The group whose specific proposals on the type of machinery are based on ensuring their effective control over it, and thus over the resources of the area, is the same as that which insists we should have narrow limits of national jurisdiction. This amounts to telling us, "You should have narrow limits; give up your resources to the international machinery which will be controlled by us—the only ones, by the way, who will be in a position to operate in the international area." Isn't this a little selfish?

*PINTO:* I just want to make two brief comments. First I would like to welcome the statement which was made by the last panel speaker, Mr. Varon. It is true that he spoke in his personal capacity, but nevertheless he speaks from that great bastion of private enterprise—the World Bank—and to see a certain degree of sympathy for the Moratorium there is very heartening.

The first comment that I wished to make is in relation to the question of good faith in the Seabed Committee. Of course, one can argue the question of good faith for a long time. My government, and myself personally, have been very much involved in the negotiations on the seabed, and I wish to assure those who have not been associated with the Seabed Committee's deliberations that there has been no deliberate delay in negotiating the various problems of substance that have come before the Committee.

In fact, one might almost say, to take a few words from one of the previous speakers, that one cause of the slowness of progress is that the developing countries are having a dreadful time trying to convince the United States, among others, of the justice of their claims.

It is only when there is a meeting of minds that we will have more rapid progress on the matter. But there is no lack of good faith, certainly not on the part of my government. I think we have had a generally good record in this respect.

My second comment is in relation to the paper put forward very ably this morning by Mr. Laylin. I want to say how much I admire his initiative on behalf of U.S. mining interests. I think his whole initiative is of great value to the Seabed Committee; it is, in a sense, the obverse of the Moratorium Resolution. Those of us who wish for progress—and I think most of us wish for progress—would like to see some pressure of this kind. The fact that I hope Mr. Laylin's initiative will fail is beside the point. I think it is a useful initiative, and I think it could bring about some progress in the Committee.

*SOUTHEY:* My name is Clive Southey; I am an economist from Canada. I would like to confine myself strictly to the economic implications of the interim report on the Moratorium. As background, I would like to mention that I have recently surveyed the literature and data as to the rents that are returned from minerals in Canada, and you will be glad to hear that there are apparently no rents made from minerals in Canada. In fact, the mineral industry—specifically excluding the oil industry—the hard mineral industry is apparently a net detractor from revenue in the case of Canada, and I would guess this is true of the United States.

And you ask yourself: why has this happened? And the reason it has happened, in my opinion, is that the regime under which these minerals are extracted, even within countries such as Canada, essentially do not provide adequate security of tenure. What is happening in the case of Canada is that it pays corporations to go out and extract the minerals twenty years before it is really economically ideal to extract those resources. Why? Because if one company does not go and do it, the other might.

Now, bearing that in mind, turn to the Moratorium and the interim report. It seems to me that we can anticipate no rents, particularly under an interim report, because unless the interim report guarantees security of tenure to those corporations that go out and extract the minerals, the outcome will be precisely the same as in Canada. They will rush out there too early, too quickly, in fact as soon as there is a net profit margin to them, and they will extract those resources.

As a consequence, the only benefit to society will be low prices. There will be no rents, and since the benefits to the undeveloped countries must basically come in the form of rents, I submit that it is essential that we do not proceed to extract resources or give any kind of tenure until such time as that tenure would be secure, and I believe that would be secure only if we have international agreement.

*BERNFELD:* I am Seymour Bernfeld, of American Metal Climax, and I would like to say to the Chairman that it is always a pleasure to listen to him. His remarks are down to earth. He clips issues and doesn't wander, and I will try to keep my remarks on the same level.

What is going on in the United Nations today reminds me of Aesop's fable of the lion and the tiger who were arguing over who was going to eat an animal that they had trapped, and while they were so busy arguing, the fox walked away with it.

This is exactly what is going to happen if we wait for an international regime, either on a temporary or a permanent basis, because the companies that are in the field, under present international law can very well go out, recover and owe nothing to anybody. This does not satisfy anybody other than the people who are going to do it.

The purpose of S-2801 is to introduce some law and a semblance of a legal regime for something that is going to develop and must develop within a few years. It is the only insurance there is for any

income to the developing nations out of seabed resources within the foreseeable future.

If we wait until an international regime is formulated through the efforts of the present Seabed Committee and the UN itself, from past experience, I would say it is going to take us at least 15 years, first to get an agreed text to go before a convention, secondly to have it adopted by a convention, and thirdly, to have at least two-thirds of the nations of the world accede to it so that it might possibly become the universal law it must be.

S-2801 is strictly an interim measure. It does not seize anything for the United States or the operator to the exclusion of all others. Every nation can do the same thing for itself and it needs no money to do so. It is merely a matter of licensing the people subject to their jurisdiction. As you know, nations, in order to lure people within their jurisdiction, offer them all sorts of tax incentives, preproduction tax-free periods and so on, and there is no reason in the world why the so-called developing nations cannot do the same thing.

The whole purpose is to provide the necessary law for something that is going to happen now so that we don't have causes for confrontation between nations. This sort of concorde of action is not possible, it seems to me, even on a temporary basis, through the international organizations for these reasons: It would take time to develop the technical organization necessary to exercise the controls, and it will take a long time to make the Assembly understand what is needed on the technical side; whereas the system proposed by 2801, if adopted by a number of nations in the interim, takes the experienced mining ministry personnel of each nation and puts them in charge of an activity that they understand.

I think to sit by and argue theoretically, with the day growing as late as it is now, for an international regime, is going to be just another example of Aesop's fable.

*JOYE:* Judy Joye, Oceanographic News Service. I would like to comment on the long-term effects of interim measures. First, there is the obvious concern that interim measures have a way of becoming permanent measures; on the other hand, the experience gained by observing interim measures could benefit the formulation of a future treaty.

But I must express significant fears about the problems of unilaterally adopting interim measures. If, let us say, five countries adopt unilateral measures, the potential of merging these various concepts into a common treaty will be difficult, if not impossible. Countries that adopt such interim measures must protect their nationals, and they must also protect the investments made after this legislation is passed. Therefore, I must conclude that the concept of unilateral action could be the first symptom of total failure of a future Law of the Sea Treaty.

If you ask if interim measures are to be adopted by the United Nations, then you run into the obvious situation that if UN delegates could agree on interim measures, they should be able to agree on a future seabed treaty. So I would like to sum up this comment by saying that this current interest in interim licensing could be symptomatic of failure of agreement on a worldwide treaty.

*LEVERING:* Sam Levering, Save Our Seas, an organization lobbying in Washington for an international solution to ocean problems.

I have been responsible for organizing testimony at hearings against this particular interim measure, 2801, and have testified myself before Congressional committees.

We object because this interim measure very likely would become permanent. There is nothing as permanent as something that gets under way and blocks anything else from taking its place. It is unlikely, as this measure requires, that the United Nations Seabed Committee would actually validate the claims established under this measure.

It is unlikely that the United States Senate would compensate for the losses, in case a new type of regime got under way. We think that this interim measure would be about the death knell for any really effective treaty for the deep sea.

To answer the question of "when," we think that perhaps the Law of the Sea Conference might separate out this matter of deep sea hard mineral resources, if the other law of the sea issues drag on too long, and come to some agreement that is equitable and makes sense. So "when" may be some interim arrangement, sometime, that is fair and mutually agreed on ahead of the rest. But if that should be, the interim arrangement should be a good one.

Now what is bad about this interim measure is basically, in our opinion, that it promotes conflict over claims to ocean resources between developing nations and developed nations. It could even lead to serious conflict between developed nations. It does not share equitably the resources of the deep seabed.

It seems to me that there would be very little to go to anyone except the developing companies, after depletion allowances had been taken under United States domestic law, with a permanent license fee of only $5,000. We don't think that this interim measure provides stability for those investing in ocean

enterprises, as is necessary. And we don't think it really gives any voice to the international community in this common resource of the international community.

There is no effective international authority and no basis for settling conflicts, no tribunal, and there really is no protection for anyone. So we think that this is not even a good interim arrangement, if one should eventually be necessary. We do not think that it is in the interests of the United States or other countries to take this particular route. We are open-minded as to "*when*"; but certainly as to "*how*," this is not the way we think makes sense.

*DE ROCHER:* My name is Fred De Rocher, from the University of Miami. I take it that we can all see the incompatibility between the Moratorium Resolution and unilateral interim measures, but a few moments ago, Mr. Beesley raised at least the theoretical possibility of a multilateral or international interim or temporary regime. I would like to address a question to the panel, and, perhaps specifically to Mr. Beesley, as to whether he can identify, or for that matter, anyone else can identify what aspects of this entire problem of legal regimes for seabed exploitation might be easier to handle, or might be politically feasible if we label the solution "interim" rather than "final."

Is this just a theoretical possibility or is there really a political potential for a multilateral or an international interim solution?

*BEESLEY:* First, I certainly do not think that transitional machinery is a merely theoretical possibility. I think it is a practical possibility which is becoming increasingly more practical.

When the Canadian delegation put it forward in March of last year in UN document A/AC138/59, it did not require a prophet to envisage the situation now facing us. There are a number of companies incorporated in various countries actually about to engage in activities in the area" beyond national jurisdiction." We don't really know whether the area in question is beyond national jurisdiction or not, because no one can even agree where the area begins or ends; although we do agree at least that there is an area somewhere out there.

We also know that these companies are apparently engaged, with one possible exception, only in purely experimental activities; although I assume that the manganese nodules they pick up will not be thrown back into the sea.

Now I might mention to you also that there are several Canadian companies which have each contributed $50,000 to one of these consortiums, or joint ventures, to purchase the information obtained from these experiments. I think there are a half-dozen of them. When this was done I don't know; they neither sought nor were granted permission from the Canadian Government, because I assume they saw no reason to do so.

I can tell you also that we have requested an opinion from our Department of Justice on whether the Canadian Government could restrain these companies if it wished to do so. My understanding is that such action, even if deemed desirable, would be extremely difficult and perhaps impossible.

Now, leaving that problem aside, what am I talking about when I talk about a multilateral transitional regime? I don't like the term "interim regime" because it is being used as a perjorative term. We are not operating in a legal vacuum; we may or may not be operating in a vacuum in terms of *lex lata,* but must we be that legalistic?

We have a UN Declaration of Principles, which was very carefully negotiated over many months; I am talking about Resolution 2749 of the 25th Assembly, 17th of December, 1970. If time permitted we could go through those principles and illustrate how many of them could be incorporated in a treaty regime laying down the basic treaty principles without any modifications, and how many others raise certain difficulties of a practical or strictly legal order. Others raise political or economic difficulties of another order.

However, we already have an indication of the will of the international community, and in fairly specific and, I would say, legal terms. It is worth looking at that Resolution not as just another UN resolution. (I don't hold with the school of thought that any resolution of the UN should be looked at as "just another resolution.") I accept that it does not have legal binding force, but it certainly has a good deal of legal content, and I think we could capitalize on it if we wished to.

Now, how would we go about it? I am only giving our particular suggestion. There may be other more acceptable ones, and we don't insist on our particular suggestions being taken up, but we do hope somebody comes forward with some kind of constructive proposal. Our suggestion is that the nub of the problem is, in part, the difficulty about national limits.

We know how long a process it will be to really define the limits of the international area, but we also know that even taking the most extreme claims of states and putting them all together on a chart, there is still a vast area out there which everyone agrees is still beyond national limits. We would sug-

gest, therefore, a different kind of moratorium proposal; namely that we take the area which is agreed to be beyond national jurisdiction, and define it.

It is a simple enough matter; a UN paper is now in process of preparation which may have such an effect, because it is intended to be a compendium of national legislation. This does not mean that the area would be definitively defined as the area beyond national jurisdiction; on the contrary, the area could be expanded. It is most unlikely that it would contract. We would then know that we were talking about a concrete area, and we think that some degree of concreteness has to be brought into this situation.

Now, the second element in our proposal is that some form of transitional machinery be set up, and I agree completely with my friend Sergio Thompson-Flores that there can't be a mere register, a kind of register of what the nodule-mining companies are doing this week. It has to be far more than that; it has to have real control.

I have outlined in the paper which we presented to the UN exactly what we think the functions would have to be of even that transitional machinery. The problems are complex, but not so difficult that people could not put their minds to them and try to determine whether it is worthwhile attempting to hold the fort for the time being, by some effective means —assuming we wish to do so.

The third element relates to funding. Presumably we would have to look to UNDP or some other source for funding, so we have come up with a rather radical proposal. It is for a temporary—it could be permanent if a country so desired—voluntary tax on all offshore mineral revenues, petroleum and otherwise, which we would be prepared to see begin at our own internal waters. In other words, for this purpose set aside the shelf concept, set aside the question of final limits; let us just have some money to prime the pump—through a voluntary tax on all offshore revenues from internal waters seawards.

That is the essence of our three-part suggestion. We have deliberately not made it in the form of a proposal; we knew we were premature. We knew there would not be much interest in this idea until the situation had become such a sorry mess that people would have to start putting their minds to possible solutions.

As to precisely what we are proposing, most of it is in our working paper, which I will have distributed, not for the sake of gathering support for it, but so as to indicate that there are various possible approaches which are open to us, whether Canadian or not; and that much of the work as already been done in the Declaration I mentioned, and in the very considerable degree of negotiation that has gone on in the Seabed Committee.

I am one of those who thinks it is no exaggeration to say that the Third Law of the Sea Conference has already begun, and in that sense we are not starting from scratch; we are not nearly so badly off as we were before the First and Second Law of the Sea Conferences.

Much of the work is not that evident, it is not that obvious; it goes on in forums outside the Seabed Committee. For example, I doubt if any of us will leave here with quite the same range of ideas we brought to this meeting. I hope we will all have learned something from it. I think there is activity going on; I think there is progress going on.

I would like to quote one passage concerning a point which I think is important to bear in mind, in terms of the functions of such a regime:

> It would have to be basically a regime, and thus a machinery, which would lead to development, not one that would curtail and stifle development, but it would have to be regulated development. It would have to be a real resource-management system.

In the paper I mentioned, we indicate the range of considerations which we think have to be taken into account to that end. I would like to make one point arising out of some of the rather general statements made by my friend Mr. Thompson-Flores, although I know he could not possibly have meant them to apply to the Canadian position, which is reflected in one of the comments made in the working paper:

> Very difficult questions arise concerning proposals for weighted voting or double majorities. It would be incongruous and incompatible with the fundamental principle of the UN of the sovereign equality of states in an international regime intended to benefit humanity as a whole, to give a virtual right of veto to any particular state or group of states.

This position may be thought to be unrealistic, but we think it is realistic.

*THOMPSON-FLORES:* One or two further words on the interim regime, and specifically on the question of "when."

Here, I think, is the crux of the matter. To speak about an interim regime now on the basis of this bill would really amount to an attempt at forcing a preconceived set of rules on the international community through the Seabed Committee. To insist on a discus-

sion on the subject at this stage would only have the effect of totally disrupting the work of the Committee.

As I intimated earlier, the progress of the Committee has been most encouraging. Following the adoption of the Declaration of Principles, a special working group has already begun putting the principles contained in the Declaration into the form of treaty articles. This working group is headed by our friend, Dr. Pinto, and during the summer session we expect to have many of these principles in treaty article language. As our Chairman mentioned a few minutes ago, some of them could go in without much change. Others would have to be reworded, but, given that there has been a unanimous agreement on those principles, there should be no reason why part of the general Convention relating to the seabed could not be ready this year.

However, the problem of the kind of machinery to be set up still remains. Up to now no agreement has been reached, but if we can arrive at an understanding, or at least bridge or narrow the gaps existing between the various proposals put forward, then an interim arrangement may be born *de per se*.

We will not have to wait the fifteen years mentioned a little while ago by one of the speakers from the floor. As everyone knows, many times bilateral treaties come into force years before they are ratified.

A working arrangement is very possible, and indeed will be automatic once there is agreement on the type of machinery to be set up.

But to decide at this stage, even multilaterally, on a certain set of rules, is a very dangerous procedure which many are not prepared to follow.

*FROLANDER:* I am Herbert Frolander, from Oregon State University. I am here as an observer, not a lawyer, and perhaps you will excuse me on that basis for what I would like to say.

As I see the discussion developing, it reminds me somewhat of a situation I see in my own family. We have a pie or cake that is about to be cut, and the question is how is it cut so that everyone receives a fair share.

I have heard the comment "developing nations and developed nations"; I am not sure where the line is drawn, but I would guess that developing nations, by what they are saying, aspire to become developed nations, and therefore, we will all be in the same boat one day.

We have a principle in our family that I might suggest might be looked at in consideration for international agreements. It is very simple; when we have the cake to be cut, we let one youngster cut the cake, and the other one decides which piece he wants. If somehow this principle could be applied whenever decisions are to be made, as if to say, "some day I will be in that situation, on the other side of the fence; will I be willing, ready and able to live with it at that time?" Then we have a very ready solution. Because as I see it, everyone here, those calling themselves developing nations, are a growing, healthy family of youngsters who desire to reach a level at a future time, but once reaching that level, they live under the same principles. We find this works very well in our family.

I offer it as a suggestion for future discussion.

*FULLER:* My name is William Fuller, and I am just a practicing lawyer.

I would like to comment that I think we are making the assumption, as many Congressmen do, that any legislation they can get enough political votes to pass is valid.

I do not think the right to issue a license in international waters is within any of the powers specifically delegated to Congress by our Constitution. I feel that the legislation that we have here is a type of legislation that properly follows and implements an international treaty or agreement negotiated by the Executive Department in the same manner as the Rules of the Road for international navigation, or the telecommunication cables of which Mr. Laylin spoke.

*WALLACE:* This is really a question to the panel on the assumptions which have been evident to me in several of the American contributions from the floor, that technological progress in this area, as in others, can not be stopped.

Now, I am in international politics, not in international law, and I am aware that in some areas, technological progress can at least be delayed by international agreement, if not stopped, when for instance in the armaments field it is to the advantage both of the United States and the Soviet Union to do so. So that argument does not seem to me to be in itself compelling.

The question I have—and this comes from my relative ignorance in this field, and I would like therefore to hear comments from the panel on this—is, to "whose" advantage is it apart from that of the United States, undoubtedly of Japan and perhaps also of West Germany, to push ahead fast with the exploitation of the seabed?

I would have thought that you would not even find a majority of OECD nations who were anxious to go ahead fast with putting up the capital for sea-

bed mining. It is quite clear from the discussions this morning that you would not find a majority of developing nations who would want to push ahead fast.

So my question to the panel is: who apart from the United States is really anxious to follow the so-called inevitabilities of technological progress in this field?

*BEESLEY:* It is not necessarily a state that decides on actions of the sort we are talking about. It may be an individual, or a company; it may be a multinational enterprise. Your question took that into account by saying, what are the attitudes of states, since some of these activities are permissible under national legislation because they are not forbidden; and even were they forbidden it would be hard to say where the area beyond national jurisdiction lies—there would be difficulties of enforcement. Leaving all that aside, much of the initiative seems to come from private enterprise, and understandably so. That is where much of the technology is, that is where the interest is in developing new sources of materials, new sources of profit, and also still further new technology.

I think this is a partial answer; in addition to which it is worth noting that at the present state of progress of the Seabed Committee, particularly the evident progress as distinct from what may be going on beneath the surface, I would suspect there is a fairly general feeling that it is taking too long and that development, as distinct from technology, cannot await the Seabed discussions indefinitely.

There is a third element in the picture, namely that if one makes a comparison between the costs required (to the extent that we know the answers to such things) to go after nodules and the costs required to even drill dry holes for petroleum exploration and exploitation, the comparison suggests that there is not as big a risk involved in manganese nodule mining. That is another reason why we might expect either private industry or perhaps even governments, in the case of state enterprises, to be interested in going out there and doing such exploration and even perhaps exploitation, at least in an experimental way. I notice once again Mr. Thompson-Flores did not rule out experimental exploration activities; he ruled out exploitation.

*THOMPSON-FLORES:* Well, to end this meeting on a note of optimism, since I believe I am to be the last speaker, we should not be discouraged by differences of opinion on the type of machinery, for once people are determined to sit down together and talk, they will certainly arrive at a conclusion acceptable to all.

In this respect, I might recall that Brazil holds what might be called a rather extreme position as far as national jurisdiction is concerned: we have 200 miles of territorial sea. This did not prevent us though from reaching a mutually satisfactory agreement on fisheries with the United States. I think this is an example to be kept in mind.

If we sit down and talk about things constructively, a solution will be found to our problems in a future which is not very far off.

*BEESLEY:* When we discuss this issue we are talking about problems as complex as have been faced in the UN or before the UN. If this is not necessarily a reason for being encouraged at the progress made, it is at least a reason for understanding the lack of rapid progress.

We are talking about concepts which are quite new, such as the common heritage of mankind; we are talking about taking a vast area of this world and reserving it for the common heritage of mankind for peaceful purposes, and for the benefit of all, particularly the developing countries.

We have made some breakthroughs already, conceptually at least; it is now a matter of translating these concepts into treaty language. I can think only of outer space as a truly analogous example, where states have come together and agreed not to claim sovereignty or even sovereign rights over a vast area.

These are very signal achievements, and I don't think they should be overlooked. We are talking about a range of issues embracing matters as diverse as national limits, which are always very delicate issues, whether they are sovereignty limits or limits of sovereign rights; plus issues which are economic, political, legal, and in a very real sense social, over the long term. I would think that at least it is worthwhile to consider these questions seriously and try to approach the whole problem with a constructive determination to make adequate preparation before we break loose in a Law of the Sea Conference.

I think that this is in fact occurring. I think a good deal of real progress has been made. I fear it has not been rapid enough; I wish to be quite frank on that, and I think that the next session in July and August of this year in Geneva may tell the tale for several years to come.

There are some pressing needs for some further breakthroughs, particularly on the list of issues, and also on the kinds of issues raised by the Kuwaiti Resolution, the handling of which could I think pre-

determine the future of the Law of the Sea Conference. The Canadian position has always been that we want to see a regime that is equitable, in terms of both benefits and contributions; and I think we should all be sharing this basic purpose. We think there is a good chance of achieving it. I would not go so far as to say "it is going to happen," but I have no doubt that it can happen.

# CONCEPTS IN SHARING OF COMMON HERITAGE WEALTH

## The Seas: Heritage for the Few, or Hope for the Many

*Judith T. Kildow, Scripps Institution of Oceanography, La Jolla, California*

**Tuesday afternoon, June 27**

I am a political scientist, who has recently completed a study on American policies toward Intelsat, The International Telecommunications Satellite Organization. There are some startling analogies between the problems of ocean development and those of space. I have become an observer of the ocean situation with that background. My comments this afternoon will be as an observer—how I see the situation, how I think it will progress in the near future.

I would like to begin by talking about my concept of the common heritage, or sharing of common heritage wealth. I look at it from two levels—focusing on two questions. What is the common heritage? What is really meant by this phrase? There is no such thing, if we all really look at it—we all have different backgrounds, different histories—there does not seem to be a true common heritage for any practical purposes. Perhaps there is something more symbolic involved here.

And, the second question—what is meant by "sharing" the wealth? There are all kinds of interpretations of "sharing" wealth.

### THE COMMON HERITAGE

First, taking a concept of the common heritage, the fact that we all cannot share equally is pretty evident. We all have different needs, many of which have not yet been identified. Maybe the seabed regime issue is really a veil for a much larger problem, the problem being the technological gap, or gap in economic development we have heard so much about for at least ten years, and the growing frustrations of developing countries over the widening of the gap.

While some look at the current situation as a critical one—perhaps the last opportunity for meaningful international cooperation—this may also be the vehicle which the developing countries and those sympathetic to them are trying to use to change the tide of what has recently become a diminishing commitment to technical aid programs, and a de-emphasis on international organizations by the more developed countries—principally the United States and the Soviet Union.

This may also be considered by some as the last opportunity to change human values and attitudes toward the allocation and sharing of the world's wealth.

This concept of the common heritage points up a set of—to me—very complex and conflicting circumstances, which create a tremendous amount of confusion between the political, economic, and military factors involved. All of these circumstances appear to exacerbate the situation and make it more and more difficult to resolve, boding ill for at least the foreseeable future.

On the one hand, I see a set of simultaneous circumstances which has led to an international focus on the ocean. There is a heightened awareness of the potentials for ocean wealth, availability of technology

to exploit that wealth, and a fairly volatile political condition of rising nationalism throughout the international system, due to the increase in newly independent states over the past several decades, as well as to the older, more developed states, assuring increased nationalism.

The focus on the seas may be partially a product of these circumstances.

On the other hand, we have a situation in which the states, newly-born over the past twenty years, have swollen the membership of international bodies, diluting and diminishing the political power which enabled the Great Powers to dominate those bodies for so long. The result: a de-emphasis of Great Power politics in these organizations.

There is also the change in the relative international economic position of the United States, which began to occur in the 1960's—or at least became evident in the 1960's—in which its balance of trade position and the strength of the dollar appear to have weakened. The problems and fears created by these changing circumstances have provoked the current United States Administration, and to some extent the past several Administrations, to look homeward, to look towards domestic development instead of foreign development. The result has been a gradual de-emphasis on future foreign aid programs and a gradual withdrawal from others underway.

Compounding this situation has been a lessening of cold war politics between the Soviet Union and the United States, once manifested in competition over the loyalties of the developing states, and evidenced in foreign aid programs. With the waning of the sharp competitive politics between the Soviet Union and the United States has come an accompanying decrease in importance attributed to financial and technical aid programs to the developing world.

Finally, the growing importance of the oceans for military operations is a critical factor. An arms race is taking place beneath the sea, as we all know; submarines, Polarises and Poseidons, and other weapons are becoming increasingly significant as mobility of defense gains importance. While economic and political hostilities have cooled between the two Great Powers, military matters remain critically important. With national security at stake between them, control of the seas remains a vital objective.

## THE SHARING OF "COMMON HERITAGE" WEALTH

Now, let us turn to what might be meant by "sharing the wealth." If heritage is interpreted broadly, then broader considerations merit scrutiny. That is, a wider spectrum of things ought to be examined.

"Sharing" may have meaning at least at four different levels. At a revenue-sharing level, for example, it may mean sharing in the revenues from the exploitation of the resources.

It could mean participation in the actual exploitation; going out and participating in the mining, the fishing, or whatever.

It could mean participation in the actual technological developments—the machinery for carrying out exploitation.

Finally, participation or sharing could mean controlling or sharing in the decision-making for the allocation of resources.

Looking closely at these four possibilities, I see that there may be a chance for participation, truly international participation at the first two. There have already been plans offered to the United Nations for taxation, and revenue-sharing of sorts; there are obvious possibilities for investment, which were discussed yesterday and this morning. I would think the developed world would share profits at a "reasonable" rate, if the definition of "reasonable" were worked out.

As far as participating in the exploitation, I think this is both possible and probable. If there are proper training programs provided for those in the developing countries, classroom as well as practical experience—a large order, to be sure—I think it is very probable that they will be able to participate at that level and gain valuable benefits in the process.

However, the last two levels of participation produce significant problems and I do not see possibilities for those sorts of international participation in the near future. Development of the technology to exploit the resources is a very sensitive area. On the one hand, we can assume that the transfers will not take place very easily, and we can ask why. Why would the United States and U.S. corporations be reluctant to transfer or sell leases on technology?

The first reason is fairly obvious: The corporation desires to derive the most from its investment. Why give away that from which it can derive profits? Having invested large sums of money, it expects a return. That is the attitude of private enterprise.

A second reason is that the United States economy, which has enjoyed a very strong position for several decades, or more, is beginning to reflect the impact of competition from Europe and Japan. Certain of its products are not as competitive as they used to be on the international market. The tech-

nological products are the ones in which the United States still maintains its lead, and the ones toward which it feels most protective. To maintain a stable economy, many economists in the United States believe that the United States must protect its technology, not give it away.

Third, some of the sophisticated technology, relating to exploitation on the seabed, has very precise applications, and, I would guess, might have military applications. The United States government may not be anxious for a company to transfer this technology to another nation that could use it for purposes inimical to U.S. interests.

However, on the other hand, if one assumes that transfers of technology were possible, where does this leave the developing world? If the United States, Germany or Japan, whoever owns the technology, feels that they can transfer certain kinds of technology, it still does not resolve the problem, because there are basic factors that must be considered—economic, political and cultural factors.

Technology is really useless to a country that does not have the internal structures to use it: if it does not have proper fiscal and manpower policies; if it does not have an effective educational system; if it doesn't have appropriate training programs; and most of all, if it does not have a commitment to carry out the use of the technology through production and marketing programs. All of these are necessary, and all of these take much time. Beginning at a relatively high level of development, Europe has spent the last 25 years trying to develop these components of its economies, and only now are the results beginning to show. The Europeans did it with much technical and financial aid; it seems a very long process.

Sharing the control over the allocation of the resources is a highly improbable development, I think, for obvious reasons. I cannot envision a situation in which the United States, the Soviet Union, or any of the other large powers who have great demands for the world's resources, would ever sign a convention, where others would have a say over how much of a resource they could take if they really had a demand for it. It would take a very different world than we have today for the Great Powers to give other nations the power over what they could take, or the power to say what they needed. That is giving up a degree of sovereignty which I do not think any nation is prepared to do at the moment.

Why so pessimistic? Because I have just finished a study of U.S. policies toward international cooperation in space—cooperation where technology and profits were involved. I carried out a close analysis of what happened there, and I think that Intelsat represents a relevant precedent. While it applies to outer space—and there are obvious significant differences between outer space and ocean space—there are also striking parallels from which I think we can learn some lessons.

The United States early in the 1960's announced to the United Nations that telecommunications by satellite was possible, and that this was a great opportunity for international cooperation. After the announcement, and with the enthusiastic support of the Kennedy Administration, the U.S. Congress proceeded to construct the foundations for an international organization for the operation of telecommunications satellites, based on a commercial philosophy and under the auspices of a private-profit corporation, Comsat.

We all know that the economies of the world are not all capitalist or private enterprise economies, so there was an automatic built-in bias in this plan.

Risking some repetition of what you have already heard about the oceans, I want to relate some interesting parallels in space, relating to Intelsat.

The far-ranging political and foreign policy implications of telecommunications were certainly recognized by the U.S. government and by other governments around the world as well. Yet the U.S. Department of State ultimately ended up with only a very minor role in the decision-making for that organization.

The United States had a very strong position going into the negotiations for an international organization for telecommunications. And Comsat, the private corporation that was the United States representative in the Intelsat discussions and negotiations, and finally in the Intelsat organization, had the technology; it had a monopoly over the technology, in fact. The United States had the launching capability; Comsat had the organization, the money and the technology.

So, when Comsat went to the international community to invite its participation, the international community was enthusiastic about receiving the new results of the technology, but was not content to be offered little more than results from, and nominal participation in, the proposed organization.

What Comsat proceeded to do over the years 1962-1964 in the negotiations was to construct an international structure, placing itself in the management position, and giving itself 61% of the ownership and control over the voting power. In addition, it received assurances from the other Signatories in 1964 that they would not participate in any alterna-

tive systems that would be competitive, and certainly not to build any.

Comsat looked at this whole affair as if it were a technical and economic problem; that was a very narrow perception. While the U.S. State Department often tried to have an influence, its influence was rarely felt. The State Department seemed to want a much more flexible international structure.

The Comsat Corporation received its powers from Congress; it did not just take them. It was given its strength by Congress and the President, who were not unexpectedly influenced by business interests in this country. It was consistent with past U.S. experiences in which business interests had exerted strong influences. However, this time, a legislative Act gave Comsat its power.

While the Comsat Corporation was supposed to be regulated by the Federal Government, such regulation of its powers was weak. Comsat made the major decisions over the five-year period from 1964-1969. The one concession the other Signatories to the Intelsat Agreements in 1964 were able to obtain from the United States and the Comsat Corporation was the "Interim" provision in the agreements. Certain Signatories claimed that they could not sign an agreement precluding any future for themselves, not knowing what the future would hold, with the new technology. So the United States, and the Comsat Corporation representing it, signed what they called an Interim Agreement in 1964, to last for five years, when Definitive Agreements would be signed.

During those five years, the United States received almost all significant contracts for building the hardware. Only toward 1969 did the United States begin to give some subcontracts to European and Japanese firms, but there was little sharing of the technology. The United States coveted the communications satellite technology; it was a well-known fact. It did not transfer it very easily, and sometimes not at all, mostly because of feared competitive systems. The U.S. position was for a single global system, and the U.S. controlled that single global system.

The result by 1960 was a very unsatisfactory political situation. Politics had been mostly ignored, and there were those who desired separate systems. A gradual erosion of U.S. power began in the Intelsat organization. The U.S. power was greatest at the most strategic time, during the development of the technology; U.S. aerospace industries grew rapidly and were able to retool, deriving much benefit from developing and building the technology. Other nations did not experience such benefits.

The United States gained the economic and the political benefits. It controlled the organization; it made the decisions frequently where earth-stations could go, e.g. who would have access to the satellite. The United States, via the Comsat Corporation, dominated that organization until 1971, when the Definitive Agreements were finally signed.

The results of those arrangements assured U.S. dominance over the technology for a long time to come. The United States still had the preponderance of expertise over the technology.

The developing countries were somewhat dissatisfied with their role, too. They had made large investments in earth-stations; yet, even in the Definitive Agreements, they really had very little say in the decision-making for the organization. What had they received from their investments?

The Comsat Corporation had pursued narrow economic interests, and to some extent it had jeopardized the United States' political leadership position in the organization. Comsat, as the U.S. representative, lost much of its credibility as a political leader. When the agreements were signed, it was also agreed that six years hence, Comsat would no longer be manager of the organization, but rather, there would be an international board managing it, a promising sign, to be sure. However, the technological developments, the real economic benefits, have already been derived in the United States.

About ten years ago, or even less than that, many saw the multinational corporation as the wave of the future. It was something that would transcend nationalism, it would transcend national interests, because it was functional and was based on efficiency. It would not have to deal with political interferences.

What appears to be happening is that the multinational corporation, with its decisions based on economic goals and efficiency standards, ends up aiding only the developed states that can offer that efficiency, giving them the greatest benefits, while increasing the frustrations of others, increasing the feelings of nationalism on the part of other states.

What does all this portend for the oceans? Because the U.S. government foreign policy machinery had little to do with Intelsat decisions, permitting the Comsat Corporation to dominate, I would not be surprised if corporations also dominated ocean exploitation decisions for some time to come. The need for technical and managerial advice also compels this alternative. Thus, whatever sharing is going to be done will most likely be done through corporations and through international cartels, or their like, not necessarily through governments.

Another aspect to the problem is that the developing states must decide whether or not they want to make a commitment, whether it is to their advantage

to do so. The commitment may be suicidal for some nations; perhaps the bandwagon effect is inimical to some nations—perhaps it is a poor use of their economic resources to be used toward ocean resource exploitation. Maybe emphasis should be placed elsewhere.

An evaluation in each country is necessary, but if a commitment is to be made, it should be made soon and then pursued sincerely.

However, a warning note seems in order here. The strong U.S. reaction to European and Japanese competition which was believed responsible for the gradual erosion of the U.S. international economic position in the 1960's and even to date must not be forgotten. I think the developing countries can expect the same thing as their economies begin to grow and expand. No nation wants to give up the power it has gained over a long period of years. Thus, the United States may not be so willing to help them with their development, if competition looms. I believe this is an understandable position for a powerful nation to take—to perpetuate its power. With the potentials for rising competition I can't see the United States, under present conditions, standing by without protecting its own interests. Unless something changes, conflicts will ensue.

Pressures and trade-offs are the only posture I see for the developing states. Having thrown the negotiations for the seabed into an international forum, instead of the closely controlled forum the United States was able to create for Intelsat, a more equitable representation of all nations may result. As the United States' international position changes, as the positions of the Great Powers begin to change over time, as other nations begin to grow, the vulnerabilities and the needs of the developed states will probably increase, and strength may diminish. If certain things can be perceived by the newly developing states, there may be trade-offs they can make with the developed states, and perhaps create a more equitable allocation of the world's resources.

Meanwhile, perhaps the material values or efficiency values of the business world, held sometimes to the deep neglect of human values and of international societal values, will gradually change either out of necessity or just from changing attitudes over time. Or, in another case, perhaps some catastrophe will force circumstances. Certainly the former alternative is the preferred.

## Resources of the Sea: Towards Effective Participation in a Common Heritage

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Of possible momentous significance to the world community is the resolution passed on December 17, 1970, by the General Assembly of the United Nations on the seabed and the ocean floor, and their subsoil (Res. 2749 XXV).[1] The Resolution declares this area—as yet undefined—and all its resources "the common heritage of mankind."

The concept of "common heritage" has not, up to this date, led to an articulated consensus of operational value.[2] Nevertheless, the UN Resolution has clearly a global welfare intent, insofar as it assigns the benefits from the exploration of the area and the exploitation of its resources to mankind as a whole, "taking into particular consideration the interests and needs of developing countries."

The potential mineral wealth from the seabed is likely to become economically exploitable on a large scale by the turn of the century. Manganese nodules,

[1] It was passed unopposed by 108 votes, with 14 abstentions—including seven East European countries.

[2] See UN General Assembly, *Comparative Table of Draft Treaties, Working Papers and Draft Articles,* New York, 28 January 1972, A/AC.138/L.10.

however, already appear exploitable in the near future.[3]

The question of delineating the area of common heritage, hereafter referred to as the "Area," will be discussed, and hopefully settled at a United Nations Conference on the Law of the Sea, originally scheduled for 1973. The definition of the Area is a crucial problem insofar as it affects the size of resources falling within the realm of common heritage. The delineation of the Area is bound to be a source of controversy.[4] Various interest and partisan groups in member states will exercise their influence to achieve their objectives. This will be the case, for example, with the petroleum and the hard mineral industries.

Once the Area's definition is finally agreed on, other equally important and complex problems remain to be solved. They pertain notably to the exploration and exploitation of the Area's resources. Major problems can be conveniently grouped under (a) administration, (b) participation, (c) protection of LDCs' export earnings, and (d) technological advancement. The thoughts submitted hereafter attempt to reflect faithfully—to the best of this author's understanding and ability—the spirit purported by the UN Resolution on the seabed. Emphasis hereafter is on principles, and guidelines for actions which could protect the interests of the weaker members of the international community, the less developed countries (LDCs). Little is said about operational or procedural details.

## ADMINISTRATION

With respect to the administration of the seabed resources, it would appear logical to give substantive significance to the concept of involving and benefiting mankind as a whole. The UN Resolution calls for setting up an international machinery, which can be named the International Seabed Resource Authority, ISRA. It should be open to all states regardless of their geographical position, their level of development, or their system of government. The governing body of ISRA, it is suggested here, should be elected by all member states, and its leadership rotated among various regions of the world. The relative importance of votes at the command of each state should translate into reality the wish for a worldwide involvement aspired to by the UN Resolution. The following criteria could be used in measuring the relative weight assigned to a given member state: (1) population of that state, (2) contribution of that state to foreign economic aid for LDCs, and (3) the relative length of coast lines of that state.

Taking population into consideration acknowledges the universality of franchise, and attempts to give it some operational significance. Moreover, the factor population underlines that ISRA should serve all human beings.

The criterion of foreign economic aid to LDCs reflects in an indirect manner the economic advancement of a country, and offers the advanced countries additional weight over and above the population factor. However, this additional weight comes not in relation to per capita income nor in relation to gross domestic product. It is related to the size of economic assistance of a concessional nature—assuming it can be measured—offered by advanced countries to developing countries. Such a link between voting power and aid to developing countries would meet the spirit of the Resolution in promoting global welfare. It might even provide an additional incentive to some developed countries for maintaining and increasing their aid program to developing countries. Some well-informed observers doubt the workability of such an incentive. Moreover, some countries whose foreign economic aid program is being cut back, such as the United States, may not accept the foreign aid criterion.

The third criterion is advanced here for expediency's sake. It responds to internal pressures obtaining in both developing countries and developed countries with long coast lines for winning exclusive national command over, or use of, the resources of the sea. These pressures have, in a number of cases, led to unilateral extensions of national jurisdiction further and further into the sea.

Other criteria for voting power in ISRA could be added, and the mixes of all these criteria could be varied with a view to mobilizing the support of those countries which would otherwise have had the capacity and willingness of going it alone in grabbing larger and larger portions of the seabed.

The relative importance of the above criteria is bound to result in haggling. From a global welfare point of view, one would hope that the first two mentioned above would earn more weight.

The governing body of ISRA thus voted for would

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[3] "Oceanology International 72," *Mining Magazine*, London, May 1972, pp. 342-363; "Oceanology 1972," *Petroleum Press Service*, London, May 1972, pp. 177-179; and UN Economic and Social Council, *Uses of the Sea*, New York, 28 April 1972, E/5120. See also Herfindahl paper in this volume.

[4] See UN General Assembly, *Report of the Committee on the Peaceful Uses of the Seabed and the Ocean Floor beyond the Limits of National Jurisdiction*, New York, 1971, A/8421.

comprise both developed countries and developing countries. The benefits derived by the LDCs and their agencies would then not be limited to the function of collecting dividends. They would extend to sharing in the administration and supervision of ISRA. In other words, LDCs should be given the opportunity of outgrowing their current status of junior and silent partners (or strawmen) in this world, and become partners at par with developed countries in the ISRA's decision-making process. As one source put it, "For many of the developing states, the concept of 'common heritage' is not simply a sharing in the pot, but rather an integral involvement in the administration, management, and development of seabed minerals."[5]

ISRA needs to have a highly qualified Secretariat, with a truly international civil service. An independent Secretariat can act as an objective instrument, and a catalyst for collective action. It can ensure that the directives and policies of ISRA are carefully observed by operators. Along with the creation of a Secretariat, there is need for a mechanism for resolution of disputes.

The economic rent or excess profits of operators accruing from seabed development (section B), several countries reasonably assume, should be collected by ISRA.[6] Excess profits can be determined by using generally accepted standards of normal return adopted by regulatory agencies and renegotiation boards of various countries. This income could be used for the following purposes: (a) to defray the expenses of ISRA, (b) to provide aid to developing countries in inverse proportion to their level of development, using criteria adopted by the United Nations in defining standards of development, (c) to contribute to the United Nations Organization and its specialized agencies, and (d) to contribute to a fund for technological development in connection with seabed resources.[7]

It should be noted that several developed countries are potentially major beneficiaries from seabed exploitation to the extent that the operators, equipment and other needed inputs for seabed exploitation are likely to originate, to begin with at least, mostly from their areas. Accordingly, one cannot say that—using the above guidelines—the developed countries do not share in the gain from seabed exploitation. Moreover, the industrial countries are bound to have another major benefit, namely in the form of an increased potential supply of needed minerals.

The guidelines presented above for revenue sharing should in principle satisfy the objective of "optimizing" global welfare. A workable compromise may have to be hammered out in order to harmonize competing or conflicting interests.

National states in their policy objectives are normally prompted by social gain, in contra-distinction of private gain of individuals and enterprises. Social gain can accrue to a country in many forms, among which are notably the following ones: (a) larger and more diversified national income; (b) larger foreign exchange earnings; (c) employment creation; (d) development of managerial talents and technological progress; (e) efficient use and conservation of resources, including the environment; (f) greater national control over resources; (g) economic stability; (h) national security.

## PARTICIPATION

Several leaders of LDCs consider participation in the development of natural resources—including seabed resources—more conducive to optimizing their social gain, as compared with a situation of no participation. According to some LDC spokesmen, the seabed area should be open for exploration and exploitation to all countries which desire to participate under an international regime. This regime should provide for equal opportunities to all potential operators interested in the resources of the sea. Operators should be judged on the basis of a combination of criteria, such as command over, or access to, technological competence, financial capacity, multinational policies and practices, and other similar characteristics to be agreed upon. No discrimination as to nationality, as to nature of ownership, or as to other similar factors unrelated to competence and efficiency should be allowed—subject to a minimum of multinationality *(infra.)*.

Once satisfied with the eligibility of an operator to perform efficiently the task of exploration for, and development of, sea resources, the governing body of ISRA would grant him an exclusive contract over a specified area of the seabed and for a limited period of time. The terms of the award should provide for gradual relinquishment in order to speed

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[5] "Draft Sea-Bed Convention" in *Resources*, Resources for the Future, Inc., Washington, D.C., January 1971, p. 24.

[6] See also Daniel James Edward, "A Proposal for Participating in Natural Resource Development Starting with the High Seas," *Natural Resources Journal*, University of New Mexico, Albuquerque, October 1971, pp. 636-656.

[7] See also UN General Assembly, *Possible Methods and Criteria for the Sharing by the International Community of Proceeds and Other Benefits Derived from the Exploitation of the Resources of the Area Beyond the Limits of National Jurisdiction*, New York, 15 June 1971, A/AC.138/38.

up development, and for payment of economic rent or excess profits to ISRA. The operator should start paying upon earning a normal return which can be agreed on beforehand between the contracting parties, subject to a renegotiation clause to give due allowance for changing circumstances including risk taking.

With a view to promoting effective international cooperation, preference ought to be given to groups of operators which are truly multinational—if all other technical and economical requirements are satisfied. A multinational group is defined as one which is owned by enterprises belonging to several nationalities (say five or more) representing both the developed and the developing countries, with a minimum equity participation by the LDC group. This minimum can initially be 20 percent subject to gradual increases up to a desirable figure of say 50 percent. These percentage figures should be used as approximate orders of magnitude for what is desirable, and ISRA should avoid undue rigidities which could hurt the prospects of developing the seabed.

Equity participation of LDC enterprises should not be sought solely for deriving financial dividends. It should entitle the LDC partners to active involvement in all managerial and operational activities. Accordingly, several LDCs consider it desirable to aim eventually at an integrated joint venture responsible for operations, instead of leaving it to one enterprise to act as operator.

With respect to participation in the minerals field, one can learn from the experience of some host countries. Several ones among these have been pushing for participation between their domestic enterprises and the international companies. The move towards participation has come at the individual level of a country acting alone, and at the collective level where several countries have banded together.

LDC host countries have, in fact, since the turn of the century (the D'Arcy concession of 1901 in Iran, for example), aspired to participate with foreign enterprises exploring for minerals in their territories. These countries have initially obtained notional or nominal participation, with little or no say in management.

It was not until the mid-1950s that oil exporting host countries have managed to attract foreign enterprises willing to accept an effective partnership with domestic enterprises, usually state-owned. The foreign enterprises which have pioneered these forms of partnerships in response to host countries' demands are the "independent" newcomers, the state-owned or supported companies of Western Europe and Japan, and the private independent companies of the United States.

The international vertically integrated mineral enterprises, notably the petroleum companies, have been latecomers in accepting partnerships with host countries. They have vast low-cost oil reserves, and they were until the late 1960's generally not interested in looking for domestic partners. One or two international companies—short of raw materials and realizing the impact of changed circumstances—have followed the independents in accepting to explore for mineral resources in joint ventures with domestic enterprises.[8]

However, by the late 1960s, international petroleum companies—though willing to accept partnerships with domestic enterprises in new ventures—were most reluctant to admit the domestic enterprises into their already developed major concessions with vast low-cost reserves.

It was under the collective influence of the oil exporting countries that the international companies have accepted, beginning 1972, participation in these concessions. The major oil exporting countries (currently 11) have been successfully coordinating their policies within the Organization of Petroleum Exporting Countries, OPEC. This organization was established in 1960 as a counter-reaction to deteriorating oil prices, and in the hope of countervailing the oligopoly power of major international firms.[9]

Credit for giving impetus to the concept of participation goes to Saudi Arabia's King Faisal, and his Minister of Oil and Mineral Resources, Ahmad Zaki Yamani. They believe that through participation, a mutually beneficial commercial alliance could be established between LDC enterprises and international enterprises.[10] The principle of participation was unanimously accepted by OPEC countries in June 1968 as a policy objective in their "Declaratory Statement of Petroleum Policy in Member Countries" (Res. XVI.90).

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[8] For an historical account of terms in the mineral industry, see: Zuhayr Mikdashi, *A Financial Analysis of Middle Eastern Oil Concessions: 1901-1965*, Praeger, New York, 1966; and *Business-Government Relations and Cooperation for Development: Mineral-Metal Industries* (under preparation).

[9] For an elaborate analysis of OPEC, and an assessment of its achievements, see: Zuhayr Mikdashi, *The Community of Oil Exporting Countries: A Study in Governmental Cooperation*, Cornell University Press—Ithaca; and Allen and Unwin Ltd.—London, 1972.

[10] "Interview with Ahmad Zaki Yamani" in *Middle East Economic Survey*, Beirut, 12 May 1972, pp. 2-3.

On this subject, Yamani commented thus:

> Participation serves so many purposes. First and foremost it will maintain the stability of prices. . . . From our [LDCs] point of view, it will give us a position of influence in the market, instead of being pawns in the hands of other people [the DCs and their international companies]. It will be a good thing for the oil companies because it will save them from nationalization and provide them with an enduring link with the producing countries. . . . It will even be a good thing for the consumers because it will save them from the possibility of a producers' cartel some time in the future.[11]

The major problem encountered by oil exporting countries' enterprises in their bid for participation with concessionaires operating in their territories is generally not a financial one. These countries happen to have adequate funds to enable them to finance their shares of participation at the production level. Their current problem is that of disposing of vast quantities of crude oil supplies which will accrue to them as a result of participation. LDC oil exporter enterprises are currently not vertically integrated "downstream," and it will take them large sums and some time before they build their own tanker transport, refineries, and distribution networks.

In an interim period, "participation oil" accruing to national enterprises will have to be sold to international enterprises which have the requisite facilities to handle it. OPEC enterprises are careful in not pushing that oil in the open market less they weaken prices and affect adversely their sales proceeds. In a few years they will be able to reach the consumers directly through their own facilities, or in partnership with international enterprises as several have already started doing.

It is unrealistic to assume that LDC enterprises are by definition less efficient than advanced countries' enterprises. In the judgment of Western trade sources and companies, and using commercial criteria for evaluation, a few national enterprises of LDCs are recognized for their outstanding performance. This applies notably to Petroleos Mexicanos (Pemex) of Mexico, the National Iranian Oil Co. (NIOC), and to Societe Nationale de Transport et de Commercialisation des Hydrocarbures (Sonatrach) of Algeria.[12] These companies have proved a match to Western enterprises of a similar size.

Of special interest to this forum is the fact that one LDC national enterprise has won exploration and production rights in the North Sea. This has happened in competition with scores of Western companies. The LDC enterprise in question is NIOC of Iran, which won in 1972 in joint partnership with British Petroleum Ltd. licenses over two areas in the British sector of the North Sea, off the Scottish coast (blocks 3/19 and 15/13).[13] NIOC has already several ventures operating in its territorial waters in the Persian Gulf.

It is submitted here that participation of LDC enterprises with those of DCs is preferable to the alternative of making ISRA assume operational functions. World welfare is not likely to increase to the same extent if an international agency were to operate the seabed resources as compared with the situation of effective cooperation between the operators of the developed and of the developing countries. Through that cooperation, LDCs can develop their national enterprises, and build a competent manpower. The skills, talents, and technology thus acquired by LDC enterprises can yield beneficial externalities as well as forward and backward linkages insofar as these enterprises can eventually translate or adapt their experience to related activities in their home countries. These LDC enterprises can also avail their newly acquired managerial and technological capabilities to other fields in their home countries. Such beneficial externalities are not as readily available through ISRA turning into a global operational agency.

There is also another advantage in limiting the role of ISRA to that of policy maker, supervisor and administrator of seabed resources. These functions are too demanding in themselves to compound them with the additional task of operating the exploration for, and exploitation of, seabed resources. Moreover, one can avert the risk of a heavy bureaucracy getting involved in operational-managerial day-to-day decisions.

An operational ISRA should be looked upon as a makeshift alternative. It should come in action when enterprises of the developed countries are unwilling to abide by the policies and directives of ISRA, including the rule of participation with LDC ventures.

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[11] Ahmad Zaki Yamani, "Participation versus Nationization: A Better Means to Survive," in *Continuity and Change in the World Oil Industry*, eds. Zuhayr Mikdashi *et al.*, The Middle East Research and Publishing Center, Beirut-Lebanon, 1970, p. 232.

[12] See, for example, "Sonatrach's Oil Empire," *Petroleum Press Service*, February 1972, pp. 53-55.

[13] *Petroleum & Petrochemical International*, London, May 1972, pp. 30-31.

There is also a third alternative for the exploitation of seabed resources, namely that of leaving it to the powerful international enterprises—mostly from the U.S., and to a lesser extent from Western Europe and Japan. This is totally unacceptable if global welfare is the guiding objective. Some DC sources could claim that LDC enterprises are too small or inefficient to cooperate with. This might be true in some cases. Nevertheless, LDC enterprises are learning and growing fast. The situation is quite dynamic, and it is improper to look at matters in a static and non-developmental framework of things as they are today instead of what they would or could be tomorrow.

For an illustration of the participation model, assume one enterprise from a developed area qualifies on technical-financial grounds to operate a mining lease. This enterprise would then be eligible for an award, if it pre-agrees to admit on a cost basis a partner from a developing area. That partnership option for an LDC enterprise should be available to the latter on the commercial production of minerals, probably in a few years from the start of operations. Payment for the share could be made out of profits generated from the venture available to the buying-in partner. Alternatively, payment can be out of funds available to the LDC enterprise from its own government, or from international borrowing using the seabed mineral rights as collateral.

In the award of mineral rights, due consideration should be made for the representation of enterprises from various countries or regions. Should one country be unrepresented, it is proper to give that country's enterprise the opportunity of exercising the purchase option in new contracts. Another possibility is to seek orderly divestment of "over-represented" enterprises, whether from the developed or the developing countries, in favor of that newcomer.

It is very possible that a certain country (DC or LDC) and its national enterprise(s) may not consider it sufficiently attractive or beneficial from a national standpoint—given the alternatives—to build at home the capabilities necessary for deepsea exploitation. The country concerned and its enterprises should be left completely free to opt out of participation if this country prefers such course of action.

No participant in seabed mining—whether newcomer or latecomer—is expected to derive larger profits as a result of the timing or location of mineral rights. This is so because profits in excess of normal return—to be defined by ISRA—on invested resources are recuperable by the latter

## PROTECTING EXPORT EARNINGS OF LDCs

Natural resources could offer and have offered a welcomed opportunity for development. But the economic exploitation of these resources depends largely on access to capital and know-how hitherto mostly available in the advanced countries, and on access to markets in developed areas—given the smallness of the domestic markets in the LDCs.

The economies of several developing countries, moreover, are narrowly based on one or two primary commodities they export. Their foreign exchange and budgetary receipts and their national income are vulnerable to adverse changes in market and other economic conditions of the major commodity(ies) they sell. In addition, several of these countries are concerned about the impact of changes in the cost of goods they import on their welfare.

To tackle the problem of protecting export earnings of developing countries, UNCTAD and other international forums have suggested the stabilization of terms of trade. Beginning in 1971, and for the first time in the history of international economic relations, this principle was applied, although in an admittedly crude way, by the Organization of Petroleum Exporting Countries (OPEC) in agreement with the international oil companies.[14]

The stabilization of terms of trade purports to protect the purchasing power (in terms of imports) of a unit of export. Assuming this is administratively feasible, there is the risk that an automatic matching of the export price of a primary commodity, x, for the group of countries concerned, with increases in the import prices of these countries may render x less competitive, and eventually reduce the demand for it in favor of substitutes.

It is important to note that the demand for primary commodities is usually a derived demand, that is, derived from demand for the final products. The prices of these final products are composites of a number of elements—including the price of raw materials. It is significant that the value of raw materials is generally a small proportion of the end products prices. By comparison, the share of labor and the state in the industrial countries (in the form of tax dues) are by comparison more substantial and generally on the increase. This applies to petroleum, iron and steel products, aluminum products, etc. Accordingly, it is unrealistic to impute to primary exporters attempting to stabilize or improve the purchasing power of their export earnings the sole

[14] See discussion in Mikdashi, *The Community of Oil Exporting Countries, op. cit.*, Chapter Seven.

responsibility that they are pricing their commodities out of the market. It is more valid to attribute a significant part of the decline in the competitiveness of a number of commodities exported by LDCs to actions and policies (notably of labor unions, industrialists, and governments) in the advanced countries insofar as they have led to higher prices of end products.[15]

It is possible that substitution of one commodity for another does not have a net adverse effect on the developing world at large, if we assume that both the beneficiary countries and the losing countries are developing. It is, however, possible that the losers are the least developed, and as such the substitution among primary commodities would lead to benefits from international trade being redistributed to the disfavor of the least developed. In such a case, one could argue that a decline in world welfare has occurred (abstracting considerations of income distribution within these countries). Should the substitution favor commodities produced in the developed countries at the expense of developing countries, world welfare will be worse off too.

It is worth noting that there are instances of controlling consumer prices, agreed to by governments of exporting and importing countries. For example, the United Kingdom obtained from Norway in 1933 a pledge as to the maximum prices at which the Norwegian state liquor monopoly would sell British whiskey.[16]

If a spirit of closer international economic cooperation is to guide transactions among nations, it may be proper to look into means of reducing the restrictions or burdens (fiscal and otherwise) in industrial countries currently borne by the final products of goods based on raw materials largely exported by developing countries—to the extent these burdens adversely affect demand for these raw materials.

A prominent U.S. law maker, Senator Frank Church, advocated in a speech given on the Senate floor on October 9, 1971, that "as an alternative to the palliative of aid, that we lend positive support to developing countries by entering into commercial arrangements that redress the terms of trade which are now rigged against them."[17]

In exploiting the natural resources of the sea, adequate safeguards should therefore be established to protect the interests of mineral exporting countries, and notably the developing ones. This requires that the development of seabed minerals as and when they become economically feasible, should be orderly done so as not to displace, depress or unstabilize the sales receipts of the developing countries concerned.[18]

The demand for minerals and their products is generally growing. LDC mineral exporters should not be unduly worried if developed countries refrain from pushing for the development of substitutes (through subsidies or import barriers) at the expense of resources exported by LDCs and/or from the seabed. It is accordingly desirable to have developed countries effectively reduce trade and fiscal barriers on these minerals and their processed products, especially from commodities which happen to be price elastic.

## TECHNOLOGICAL ADVANCEMENT

It has already been suggested above that a portion of revenues accruing from the seabed should go into a fund for technological advancement. This fund should be used to promote scientific research and technological developments connected with the exploration for, and exploitation of, seabed resources, as well as the conservation of these resources and the protection of the sea environment. The fund can also be used to finance certain programs to be carried by existing international organizations (including the projected United Nations University) and other institutions.

It needs hardly be reiterated that the fund, like ISRA, should be run by representatives of both the developed and the developing areas, and all parties should be eligible to share in its benefits.

Scientific and technological research in connection with the seabed exploration and exploitation and related processing-manufacturing activities should be made widely available and readily transferable to all nations. LDC enterprises have complained that the concentration or monopolization of technical know-how in DCs has been a major barrier to the former's development. Other important barriers have been their limited managerial capacity, and various discriminatory fiscal, trade and administrative bur-

[15] This has been eloquently conveyed, for example, in recent *Annual Reports* of the United States Steel Corporation.

[16] Jacob Viner, *Trade Relations Between Free-Market and Controlled Economies,* League of Nations, 1963, p. 74.

[17] U.S. Congress, *Congressional Record,* October 29, 1971, p. S1786; and the *Washington Post,* November 7, 1971, p. B4.

[18] See UN General Assembly, *Possible Impact of Sea-bed Mineral Production in the Area Beyond National Jurisdiction on World Markets, with Special Reference to the Problems of Developing Countries: A Preliminary Assessment,* New York, 28 May 1971, A/AC.138/36.

dens they face in selling to major markets which are those of the advanced industrial countries. Several LDC enterprises have acquired or are developing the requisite managerial talents. The major hurdles to be overcome remain largely technological know-how, and ready access to the DCs markets. In promoting the diffusion of science and technology, the above-mentioned fund can assist LDC enterprises in cutting down on one of the major barriers they encounter.

## CONCLUSION

The concept of common heritage is novel. It is a challenge to mankind at large to give it operational substance and reality. In implementing such a concept and providing for its evolution in the proper direction, the World Community can break the vicious circle of conflicting national interests threatening peace and prosperity on this earth. To carry the UN General Assembly Resolution No. 2749 to a successful implementation, political realism and unfaltering idealism on the part of political leaders—especially those of the major powers—are required. It is an act of faith to believe that these two qualities can co-exist and work in harmony. One can keep on trying. Time is running short, and the sooner the positive action on the UN Resolution, the better are the chances for an international agreement before vested interests develop and get rooted. An international regime is indeed our best opportunity for averting potential conflicts in the use of marine resources and of promoting world cooperation in the service of humanity.

# Equitable Use and Sharing of the Common Heritage of Mankind

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## AREA BEYOND NATIONAL JURISDICTION

Whatever may be the precise limits of national jurisdiction—and it will take a lot of political wisdom and hard bargaining to settle this issue—it is now unanimously accepted that "there is an area of the seabed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction"[1] which is the common property of all states. Even if the widest claim made at present in regard to national jurisdiction over the seabed, viz. 200 miles, were to be conceded, it would still leave a large area of the oceans beyond national jurisdiction, an area which would belong to nobody or perhaps to everybody. How this area and its resources are used or abused is a matter of vital concern to everyone.

## LAW RELATING TO EXPLORATION AND EXPLOITATION OF THE SEABED BEYOND NATIONAL JURISDICTION

Whether a state can acquire exclusive rights to any part of the seabed and its resources has long been debated. While everyone agrees that the high seas are open and cannot be appropriated, some writers have sought to make a distinction between the waters of the high seas, which, they argue, are everybody's or *res communis* and cannot be appropriated, and the seabed or its subsoil, which, they hold, is nobody's or *res nullius* and can be subject to national appropriation and sovereignty.[2] Others have rejected this view and have questioned the right of

[1] General Assembly Res. 2749 (XXV) of 17 December 1970.

[2] See C. Hurst, "Whose is the Bed of the Sea?" *British Year Book of International Law*, vol. 4 (1923), pp. 40-42; P. R. Feith (Rapporteur), "Rights to the Seabed and its Subsoil," *Report of the Forty-fourth Conference of the International Law Association* held at Copenhagen (August 27-Sep. 2, 1950) (London, 1952), pp. 88-9. C. H. M. Waldock, "The Legal Basis of Claims to the Continental Shelf," *Transactions of the Grotius Society* for the year 1950 (London, 1951), pp. 115 ff; D. P. O'Connell, "Sedentary Fisheries and the Australian Continental Shelf," *American Journal of International Law*, vol. 49 (1955), pp. 185 ff.

a state to occupy any part of the high seas.[3] Today, however, this debate, which centers around certain little-understood Latin expressions, is being denounced as "futile and artificial."[4] Law relating to the seabed and its exploitation beyond national jurisdiction is extremely ambiguous and uncertain. Indeed, as Professor Henkin correctly, though bluntly puts it, "no one knows what the law is."[5]

In the absence, then, of any law or specific rules, only the general principles of international law can be said to govern the exploration and exploitation of the mineral resources of the seabed and the subsoil of what is called the high seas. Apart from the recognition of the traditional freedoms of the high seas, which are subsumed under the general title of "freedom of the seas," the exact scope of which cannot be determined for sure, no nation has any *a priori* rights in any part of the seabed or its resources. In fact, the freedom to explore and exploit the mineral resources of the seabed and the subsoil of the submarine areas of the high seas is not even included in the 1958 Convention on the High Seas, which refers to other traditional freedoms.[6] Apart from providing that these freedoms "shall be exercised by all states with reasonable regard to the interests of other states in their exercise of the freedom of the high seas," the Convention specifically lays down: "The High seas being open to all nations, no state may validly purport to subject any part of them to its sovereignty" (Article 2).

Even so it is suggested that the mineral resources of the seabed "are—like swimming fish—open to anyone to take." It is said that digging "is lawful if it does not interfere unreasonably with navigation, and the digger is entitled to what he finds." Further, although permanent installations might be considered as usurpations of the seabed and permanent interference with navigation might be challenged, it is pointed out that no such objection can be raised "if mining operations are conducted from a vessel or something approximating one" and that "it would have the protection of the flag it bears."[7]

However, since the seas are open and free for everybody, it is admitted that any state exploiting an area of the seabed beyond its national jurisdiction cannot be certain of its "title" to that area, nor how long it can pursue it unchallenged, and it would not be able to exclude "poachers," or operators from other nations who might like to take the benefit of the discovery without undertaking cost of its exploration.[8]

Apart from the fact that such an uncertain condition is not conducive to the exploration and exploitation of the resources of the deep seabed, the temptation to look for such vast resources with the help of the ever-developing technology of the modern world may lead to serious international conflicts. As the United States Commission on Marine Science Engineering and Resources said in its report:

> Unless a new international framework is devised which removes legal uncertainty from mineral resources exploration and exploitation in every area of the seabed and its subsoil, some venturesome governments and private entrepreneurs will act to create *faits accomplis* that will be difficult to undo, even though they adversely affect the interests of the United States and the international community.[9]

This could repeat the old history of scramble for colonies among the European Powers during the last three centuries with all its disastrous consequences. President Lyndon B. Johnson of the United States, therefore, once warned:

> Under no circumstances must we ever allow the prospect of rich harvest and mineral wealth to create a new form of colonial competition among the maritime nations. We must be careful to avoid a race to grab and to hold the lands under the high seas. We must ensure that the deep seas and the ocean bottoms are, and remain, the legacy of all human beings.[10]

## "Tyranny" of the Traditional Law

It may be pointed out that the old law relating to the sea was developed, or left undeveloped, under

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[3] See De Lapradelle, quoted in Feith, *ibid.*, p. 91; Gidel and Higgins and Colombos, quoted by Waldock, *ibid.*, pp. 115-17.

[4] Gidel Memorandum, quoted in Louis Henkin, *Law for Sea's Mineral Resources* (New York, 1968), p. 25.

[5] Henkin, *ibid.*, p. 24.

[6] Article 2 of the High Seas Convention refers to Freedom (1) of navigation, (2) of fishing, (3) to lay submarine cables and pipelines, (4) to fly over the high seas, (5) and "others which are recognized by the general principles of international law."

[7] Henkin, n. 4, p. 30; see also *Our Nation and the Sea,* Report of the U.S. Commission on Marine Science, Engineering and Resources (Washington, D.C., 1969), p. 146.

[8] Henkin, *ibid.*, p. 30; *Our Nation and the Sea, ibid.*

[9] *Our Nation and the Sea,* n. 7, p. 146.

[10] Quoted in *Our Nation and the Sea, ibid.*, p. 141.

very different circumstances. Without going into the history of the doctrine of the "freedom of the seas," it may be recalled that it was propounded by Grotius to break the hegemony of Spain and Portugal, which were bent upon establishing their dominion over the seas and over the lands to which the seas gave them access and divided the world between themselves along a line close to the one drawn by Pope Pius VI for the purpose. In the age of the industrial revolution and of European expansionism, the freedom of the seas became a necessity, for freedom of navigation was as important in the colonization of Asia, Africa, and America, as in the promotion of interstate commerce. It is worth noting that though the doctrine of the freedom of the seas was based on Grotius's assumption of the inappropriability of the vast expanse of the oceans and the inexhaustibility of their resources, it was the Big Powers of Europe which insisted upon it and enforced it during the last three centuries. They used it to master the seas for the promotion of their own individual interests. In practice, therefore, the freedom of the seas meant only the freedom for these and other Big Powers, which had the necessary resources, to exploit the seas.

Even today it is only the nations which have their own navies and merchant marines sailing round the globe, or which possess highly mechanized fishing fleets capable of sailing to distant waters, or which have the capacity to lay submarine cables, to do oceanographic research, and to mine the deep ocean floor, that insist upon this doctrine and benefit from it. On the other hand, nations which lack advance marine technology and are confronted with distant-water fishing fleets of other nations catching millions of tons of fish within their sight, or which they want to keep off the military might of the Big Powers or to be saved from those who haunt their coasts for the purpose of "gathering data" by electronic procedures, do not like or appreciate the benefits of the freedom-of-the-seas doctrine. It is not, therefore, without good reason that Senator Metcalf of the United States pointed out that "under the freedom of the seas doctrine there is not much equity between developed and underdeveloped coastal nations" and that "a less developed nation is a second-class citizen."[11]

Besides, we know today that some of the basic assumptions of this doctrine are incorrect. Thus, contrary to Grotius's belief, the resources of the sea, whether living or non-living, are not inexhaustible. Moreover, unlike fish, mineral resources do not reproduce themselves and may be more easily exhausted. Also, absolute freedom to use or abuse the sea as a dumping-ground for dangerous material may cause irreparable damage to the whole of mankind. All this, Grotius in his age just could not imagine.

Law must change with the changing times. Freedom of the seas is still an extremely important and useful doctrine, but it is not immutable. It cannot be treated, as Sir Hersch Lauterpacht said, "as a rigid dogma incapable of adoption to situations which were outside the realm of practical possibilities in the period when that principle became part of international law."[12] Thus, whereas freedom of peaceful navigation is vital for the network of commerce and communications and for economic and cultural intercourse between the various countries of the world, this may not be true about the freedom of fisheries or the right of exploitation of the mineral resources of the seabed. It is for this reason that some of the more knowledgeable scholars in this field, who first championed the doctrine of the freedom of the seas, later turned to warn us against what they called the exaggerations of the "tyranny" of the traditional conception. Thus, according to Gidel, "the concept of the freedom of the high seas has now lost the absolute and tyrannical character imposed upon it by its origin as a reaction against claims to territorial sovereignty over the high seas."[13] Sir Hersch Lauterpacht also said that

> . . . if the freedom of the sea is interpreted so as to result either in a regime of waste or disorder on the high seas—such as must follow from the absence of effective agreement in the matter of protection of fisheries or of properly conceived interests of individual states, its authority will disappear and it will be increasingly flouted by unilateral assertions of selfish and monopolistic interests.[14]

On the other hand, Sir Hersch felt, it might not be difficult to find an answer "once we abandon a conception of freedom of the seas which is both rigid and pedantic."[15]

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[11] Senator Metcalf's remarks while presenting "Report on the Outer Continental Shelf," *Congressional Record*, Senate, 92nd Congress, First Session, March 10, 1971, p. S2815.

[12] Hersch Lauterpacht, "Sovereignty Over Submarine Areas," *British Year Book of International Law*, vol. 27 (1951), p. 399.

[13] Quoted by Lauterpacht, *ibid.*, p. 408.

[14] Lauterpacht, *ibid.*

[15] Lauterpacht, *ibid.*, p. 414.

## "COMMON HERITAGE OF MANKIND"

It is in the light of the present changed international situation, it may be recalled, that Ambassador Arvid Pardo of Malta, in a memorandum to the UN Secretary-General on August 17, 1967, suggested that the old law relating to the sea needed drastic modifications. The time had come, he declared, to declare the seabed and ocean floor "a common heritage of mankind," and suggested that immediate steps should be taken to safeguard the interests of mankind.[16] Similar demands were made outside the United Nations as well. Thus, the World Peace through Law Conference, attended by over 2,000 lawyers and judges from over 100 countries, declared in a resolution in July 1967 that the high seas were the "common heritage of mankind" and recommended to the General Assembly that it issue a proclamation to the effect that "the non-fishery resources of the high seas, outside the territorial waters of any state, and the bed of the sea beyond the Continental Shelf, appertain to the United Nations and are subject to its jurisdiction and control."[17]

In a unanimous resolution adopted on December 18, 1967 [Res. 2340 (XXII)], the General Assembly recognized "the common interest of mankind in the seabed and ocean floor." It also expressed the feeling "that the exploration and use of the seabed and the ocean floor . . . should be conducted . . . in the interest of maintaining international peace and security and for the benefit of all mankind." In a resolution passed on December 21, 1968 [Res. 2467A (XXIII)] the General Assembly again voiced its conviction that the exploration and exploitation of the seabed "should be carried out for the benefit of mankind as a whole irrespective of the geographical location of states, taking into account the special interests and needs of the developing countries."

Reiterating its conviction that the exploitation of the resources of the seabed should "be carried out under an international regime including appropriate international machinery" and emphasizing the "importance of preserving the seabed and the ocean floor . . . from actions and uses which might be detrimental to the common interests of mankind," the General Assembly went a step further in 1969, and declared that

> pending the establishment of the aforementioned regime: (a) States and persons, physical or judicial, are bound to refrain from all activities of exploitation of the resources of the area of the seabed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction; (b) No claim to any part of that area or its resources shall be recognized." [Res. 2514D (XXIV)]

On December 18, 1970, in a resolution adopted unanimously [Res. 2749 (XXV)], the General Assembly laid down the "principles governing the seabed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction." It solemnly declared: "That the seabed and ocean floor beyond the limits of national jurisdiction and its resources are the common heritage of mankind."

Reiterated and repeated in so many resolutions, there is little doubt that this principle, to use the words of Bleicher in another connection, "embodies a view of the community which has some continuity, rather than an ephemeral 'accident' of General Assembly politics."[18] It has gained wide notoriety in legal circles and cannot be dismissed now as meaningless rhetoric or as a phrase empty of any content.

### Objections to the "Common Heritage" Principle

But although the principle is well recognized, there is wide disagreement about its real meaning and content and bitter dispute about its binding nature. Several Western scholars and statesmen believe

> . . . that the concept of the common heritage of mankind is not a legal principle but embodies rather agreed moral and political guidelines which the community of states has undertaken as a moral commitment to follow, in good faith in the elaboration of a legal regime for the area beyond the limits of national jurisdiction.[19]

The Belgian delegate, Debergh, said in the Seabed Committee that he "doubted the usefulness of describing the area under consideration by the Committee as 'the Common heritage of mankind', since

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[16] UN Doc. No. A/6695, 18 August 1971, pp. 1-2.

[17] Quoted by Pardo, First Committee, A/C.1/PV.1516, 1 November 1967, p. 67.

[18] Samuel A. Bleicher, "The Legal Significance of Re-Citation of General Assembly Resolutions," *American Journal of International Law*, vol. 63 (1969), p. 453.

[19] E. D. Brown, "The 1973 Conference on the Law of the Sea: The Consequences of Failure to Agree." *Proceedings* of the Sixth Annual Conference of the Law of the Sea Institute, University of Rhode Island, June 1971 (Kingston, R.I., 1972) p. 35.

the term was, in fact, a neologism and meant different things to different delegations."[20] Beesley of Canada had reservations about the use of this phrase because the concept "had no legal content and was unknown in international law. Its inclusion in a declaration of principles could have far-reaching implications, whose precise nature was as yet unknown." He, therefore, opined that one should first formulate rules which would comprise the regime of the seabed and then decide whether the concept suitably reflected them.[21]

Oda of Japan said that the inclusion of the concept of common heritage, which was subject to various interpretations, "in a statement of general principles might give rise to unnecessary confusion in the establishment of a legal regime applicable to the area, and would therefore be undesirable."[22] France objected to the inclusion of the concept "because it was not clear what would be the exact legal implications" of such inclusion.[23] Italy pointed out that the lack of legal content could not be cured by putting the concept in a declaration.[24]

The Soviet Union and other countries of the Soviet bloc also objected to the establishment of a special legal status for the seabed beyond national jurisdiction based on the concept of common heritage of mankind

> . . . because that concept ran counter to existing norms and principles. It was incorrect to say that international law was narrow and absolute, since being founded on the United Nations Charter, it provided the basis for relations among states in all spheres, including outer space, the oceans and the atmosphere. To create a special legal status for the seabed would amount to acknowledging that a legal "lacuna" existed and that the status of the seabed and ocean floor should be different from that of superjacent waters of the high seas.

The concept of a common heritage, he said, "appeared to have been evoked with a view to preventing the appropriation of the ocean floor by certain states, but it was neither realistic nor practical. On the other hand, a practicable solution based on international law would be provided by applying the principle stated in Article 2 of the Convention on the High Seas."[25]

The Byelorussian delegate in the First Committee said that he could not support the concept that the seabed was the common heritage of mankind or,

> . . . in other words, a kind of collective property of all countries. That concept does not take into account the objective realities of the contemporary world, in which there are states having different social systems and different property regimes. Such a concept, as was evident in the work of the sea-bed committee, makes more difficult the working out and adoption of legal principles consonant with the interests of all states.[26]

According to the Bulgarian delegate, the concept of common heritage

> . . . represented a doctrine of civil law applied by analogy in an attempt to determine the legal status of the sea-bed. Despite the good intentions and idealistic arguments of those who advanced that theory, the concept of a common heritage could in practice become a mere legal and institutional cover for powerful interests and was likely in any case to lead to confusion.[27]

### "Rallying Cry" for the Underdeveloped States

On the other hand, most of the underdeveloped states and some others supported the concept of "common heritage," which, as the Indian delegate said,

> . . . symbolizes the hopes and needs of the developing countries, which can legitimately expect to share in the benefits to be obtained from the exploitation of the resources. These benefits would help to dissipate the harsh inequalities between the developed and the developing countries.[28]

The Brazilian delegate said that "this key con-

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[20] Seabed Committee, 13th Meeting, 13 August 1969, A/AC.138/SC.1/SR.13, p. 16.

[21] *Ibid.*, p. 18.

[22] *Ibid.*, 14th Meeting, 14 August 1969, A/AC.138/SC.1/SR.14, p. 24.

[23] *Ibid.*, p. 30.

[24] *Ibid.*, 15th Meeting, 15 August 1969, A/AC.138/SC.1/SR.15, p. 40.

[25] Smirnov (USSR), *ibid.*, 8th meeting, 21 March 1969, A/AC.138/SC.1/SR.8, p. 80.

[26] Mr. Grekov (Byelorussian S.S.R.), *First Committee*, 25th Session, A/C.1/PV.1780, 2 December 1970, pp. 47 ff.

[27] Yankov (Bulgaria), Seabed Committee, A/AC.138/SC.1/SR.9, 24 March 1969, p. 96; See also Goralezyk (Poland), *ibid.*, 15th meeting, A/AC.138/SC.1/SR.15, p. 38.

[28] Mr. Sen (India), First Committee, 24th Session, A/C.1/PV.1673, 31 October 1969, p. 28.

cept should provide the cornerstone for a legal regime for the area and, in particular, for the exploration, use and exploitation of its resources." Referring to the general criticism that the concept lacked "legal content" and was not a "self-explanatory legal concept" and that it had "monotonously been heard in the United Nations," he reminded the critics that "before their adoption, all legal concepts are devoid of legal content." He declared:

> Legal concepts are not only theorizations of previous legal norms and practices, but also creative concepts from which such norms and practices flow. If mankind were to restrict itself to always applying the legal concepts that already exist, legal systems would not have developed and law would not have fulfilled its proper function in social progress.[29]

The principles on which the new legal regime was to be based, said Ambassador Pardo of Malta,

> . . . could not be sought in traditional doctrines of international law; they must be new, equitable and moral. . . . The concept that any area was to be administered in common for common good was somewhat alien to existing international law. Nevertheless, its introduction as the basis of international law on the seabed and ocean floor was essential, not only for the development of that environment, but also for the peaceful development of the world.[30]

The Chairman of the Seabed Committee, Amerasinghe of Ceylon, stated:

> There are, we realize, many who are alarmed by what they consider to be the formulation of a novel concept hitherto unknown, but the traditional legal concepts are not, we feel, applicable to this unique area and its resources. If the area and its resources are to be saved from competitive exploitation—restricted necessarily to those with financial resources and the technological power to exploit them—it is necessary for us to abandon those traditional concepts and evolve a new concept.

Traditional international law, especially customary law, he said,

> . . . has in the past found its origin in the convenience and power of the few. It is the duty of this Organization to see that the resulting inequalities are removed and that in the future, international law is designed to serve the interests of all mankind especially the economically weaker sections of mankind.[31]

Ballah of Trinidad and Tobago called the concept a "useful rallying cry, for it symbolized the interests, needs, hopes, desires and objectives of all peoples."[32]

In an eloquent and brilliant speech, the Norwegian Ambassador, Hambro, very strongly supported the concept of "common heritage of mankind." Referring to the criticism that it was not an established term in the vocabulary of international law, he said:

> That may be so, but the problems with which we are confronted are novel and the solutions we must offer in this area in order to establish international justice and maintain international peace can hardly be found in the bookshelves of international law libraries. We must not be afraid of new concepts or of new terms to explain them. New words are needed for new concepts.

The deep ocean floor, he insisted, "is not free for all where everybody can do what he wants for various purposes." Basic principles of law govern these areas, "but those principles are so rudimentary in substance and so general in form that they obviously must be further elaborated and supplemented to suit the host of problems which the technical revolution has created and will continue to create in those areas." The expression "common heritage of mankind," he suggested,

> . . . points to something valuable, referring to the past as well as to the present and future, emphasizing that those areas and the riches contained therein with their possibilities and problems, have been passed on to the present international community as a heritage of mankind and for common benefit as a whole, not to any individual nation or group of nations.[33]

Zegers of Chile said that apart from expressing

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[29] Saraiva Guerreiro (Brazil), *ibid.*, A/AC.1/PV.1674, 31 October 1969, pp. 7-10.

[30] Pardo (Malta), *Ad Hoc* Committee on Sea-bed, A/AC. 135/WG.1/SR.3; 3 September 1968, p. 52.

[31] *First Committee*, 24th Session A/C.1/PV.1673, 31 October 1969, pp. 18-20.

[32] Legal Sub-committee of the Seabed Committee, A/AC. 138/SC.1/SR.12-29, 6 November 1969, p. 47.

[33] Seabed Committee, A/C.1/PV.1676, 4 November 1969, p. 3; See also Solomon (Trinidad and Tobago), *ibid.*, p. 11; Schram (Iceland), A/C.1/PV.1678, 6 November 1969, p. 42; Pavicevic (Yugoslavia), n. 32, pp. 33-34.

the juridical status of the future regime, the "common heritage" principle evinced a political will which constituted the very essence of the problem. "If we have tried to avoid falling into the classical concepts of *res nullius* and *res communis*," he pointed out, "it is because those two concepts characterize international egotism, the first by definition and the second because of the interpretation that has been given it by those who contend that *res communis* defines the status of the high seas." The "common heritage" principle avoided letting the resources of the seabed fall into the same category as fish, "where a few countries possessing techniques and capital have been able to use that wealth to the prejudice of others and without considering the welfare of mankind as a whole."[34]

Mrs. Myrdal of Sweden regretted a tendency on the part of some industrialized countries to avoid expressing conviction in the "supreme principle" of the "common heritage of mankind." We were standing, she said "at a crucial crossroads," and "if different positions were taken on this fundamental principle, it would amount to more of a parting of ways than is generally accounted for" and "would entail differences on practically all the remaining issues, however technical they have appeared in the discussion."[35] On the other hand, if this principle were accepted as a foundation, the Seabed Committee could proceed with formulating "a definite set of international legal precepts in order to save the seabed area and resources from competitive exploitation."[36]

### Keystone of the Declaration of Principles

Although some countries had objected to the expression "common heritage," on the ground that it lacked precision and legal content, no one was opposed to the essential idea it embodied. Thus, the Belgian delegate, Debergh, who was opposed to the inclusion of this concept as a "principle," admitted that it "had the special merit of embodying the spirit of all the other principles and might accordingly be treated as the keystone of the statement of principles."[37] He, therefore, suggested its inclusion in the preamble. This view was shared by some other delegates as well.[38]

[34] *Seabed Committee*, A/C.1/PV.1679, 6 November 1969, pp. 17-20.

[35] *Ibid.*, A/C.1/PV.1680, 7 November 1969, pp. 11-12.

[36] *Ibid.*, p. 17.

[37] *Op. cit.*, n. 32, p. 16.

[38] See Berwan (U.K.), *ibid.*, p. 23; Martin-Save (France), *ibid.*, p. 30.

### Meaning and Content of the Expression "Common Heritage"

Although the expression "common heritage" was never defined, the Declaration of Principles and the discussions in the Seabed Committee and its three subcommittees have helped in the clarification of its meaning and content. In the first instance, as the first principle clearly states, the "common heritage" concept applies both to the area of the seabed and ocean floor beyond national jurisdiction and to all its resources, living and non-living.

Any international authority established to administer the area would not only supervise the exploration and exploitation of the resources in this area but also ensure that no activity carried out in it impaired the heritage of which it was the trustee.[39]

The "common heritage" principle implies, in essence, two concepts, the first of which amounts to a denial of rights and the second to an assertion of rights. The first concept is contained in principles 2 and 3 of the Declaration, which state:

> 2. The area shall not be subject to appropriation by any means by states or persons, natural or juridical, and no state shall claim or exercise sovereignty or sovereign rights over any part thereof.
>
> 3. No state or person, natural or juridical, shall claim, exercise or acquire rights with respect to the area or its resources incompatible with the international regime to be established and the principles of this Declaration.

It is, however, clear that the principle of non-appropriation is not adequate or comprehensive enough to provide a legal regime for the area if it is considered to be the "common heritage" of mankind: all states should participate in the administration and regulation of the activities in the area, as well as in the benefits obtained from the exploration, use, and exploitation of its resources. It implies collective administration of mankind's heritage, collective activities, and collective enjoyment of resulting benefits. The Declaration, therefore, suggested the creation of an international machinery by a universal international treaty (Principle 9), recommended that all states participate in the activities to be carried out in the area, and encouraged international cooperation in scientific research and other

[39] See Arias Schreiber (Peru), Sub-Committee I of the Seabed Committee, Provisional Summary Records of 26th Meeting, Doc. No. A/AC.138/SC.1/SR.36, 15 March 1972, p. 7.

exploratory activities, prevention of pollution and contamination of the area, and protection and conservation of natural resources and the flora and fauna of the marine environment (Principles 10 and 11). It also laid down that the

> . . . exploration of the area and exploitation of its resources shall be carried out for the benefit of mankind as a whole, irrespective of the geographical location of states, whether land-locked or coastal, and taking into particular consideration the interests and needs of the developing countries. (Principle 7.)

The Declaration stressed that the international regime should "ensure the equitable sharing by states in the benefits derived [from the area], taking into particular consideration the interests and needs of the developing countries, whether landlocked or coastal" (Principle 9), although not all these states might participate in the exploration and exploitation activities directly.

All these principles—namely (a) inappropriability and indivisibility of the seabed beyond national jurisdiction; (b) international regulation of the exploration and exploitation activities of this common property; (c) international cooperation in scientific research and other activities; (d) freedom of access, use, and navigation; (e) use of seabed only for peaceful purposes; and (f) equitable distribution of benefits among all countries irrespective of the geographical location of states—are supposed to be subsumed in the generic expression "common heritage of mankind" and have been emphasized by most countries, though in different words and with varying emphasis.

## MINERAL RESOURCES

### Present Mineral Production Confined to Shallow Waters

It is well known that most of the mineral extraction has so far been confined to the shallow waters of the continental shelves. The present technology and economies do not permit the extraction of minerals from deeper waters. One of the most important and valuable subsea resources, for instance, is petroleum or oil and gas, making up nearly 90 percent of the total value of the current value of subsea mineral production. World production of liquid fuels in 1969 was said to be nearly 15 billion barrels, or nearly 18 percent of the total production. It was estimated to increase to 25 billion or 30 billion barrels by 1980 or 30 to 40 percent of the total and to 60 billion or 75 billion barrels by the year 2000, making 40 percent to 50 percent of the world's production of petroleum.[40] But although exploration for petroleum is under way off the coasts of more than 75 countries and drilling is in progress off 42 of them,[41] most of this activity is confined to shallow waters of less than 105 meters depth and from areas within 120 kilometers of the coast. The relatively slow progress in exploratory activity in deep-waters regions is explained by existing technological limitations and economic considerations. However, two recent innovations—namely (1) a well-head completion system designed to work at a depth of 400 meters; and (2) a re-entry system of permitting a drill to re-enter a hole in the seabed some 3,000 meters below surface—may mean that the only limitation to offshore prospecting will be economic rather than technological.[42] Development costs for an offshore field even in shallow waters are generally three to five times those on land. Offshore development costs rise as water depth increases. Thus, in the North Sea, for example, a platform in 100 feet of water costs US $3.5 million; in 200 feet it would cost US $4.75 million; in 300 feet more than US $7 million; in 400 feet about $10 million; and in 500 feet near $14.25 million. Because of the higher cost of deep-water production, and the wide availability of oil and gas in shallower waters, experts in the field feel that the production will be restricted to 200-meter isobath during the next decade or so. According to McKelvey and Wang, prduction from deeper waters would not amount to about 0.5 billion or one billion barrels a year by 1980, but it might increase a few billion barrels a year by then if the deep-water exploitation technology is further advanced.[43] But according to the Secretary-General's report, even "half a billion barrels a year by 1980 could be considered a high figure."[44]

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[40] Vincent E. McKelvey, Subcommittee I of Seabed Committee in "The Law of the Sea Crisis," Staff Report of the UN Seabed Committee, the Outer Continental Shelf and Marine Mineral Development, U.S. Senate Committee on Interior and Insular Affairs, 92 Congress, 1st Session, December 1971 (Washington, 1972), p. 30.

[41] V. E. McKelvey, and Frank W. H. Wang, *World Subsea Mineral Resources* (U.S. Department of Interior, Geological Survey, Washington, 1969), p. 8.

[42] Report of the Secretary-General, Possible Impact on Seabed Mineral Production in the Area beyond National Jurisdiction on World Markets with special reference to the Problems of Developing countries. A Preliminary Assessment, UN Doc. No. A/AC.138/36, 28 May 1971, p. 40.

[43] McKelvey & Wang, n. 41, p. 9.

[44] Secretary-General's Report, n. 42, p. 43.

Even the economic development of solid minerals, representing at the present level of production at less than 2 percent of the land production of these minerals, is likely to be limited to shallow waters and to areas near the shore at least for some time to come. It is said that for both technological and economic reasons, land sources would be preferred for most of these minerals in many areas during the next few decades except when offshore deposits (1) are extremely large; (2) are of high grade and of easy access (such as tin deposits off Thailand and Indonesia); (3) contain minerals in short supply (e.g. gold and platinum); (4) are desired by countries for strategic reasons; or (5) are in local demand for high cost of transport.[45]

The most important deposits of potential economic importance on deep ocean floor, viz. manganese nodules, it is pointed out, "will require major technical innovations for the mining or dredging of the nodules from the ocean floor and the metallurgical separation of the associated metals."[46]

### Resources from Deep Seabed

It may be pointed out, however, that the possibility of petroleum occurring in deeper waters, and even in abyssal plains, cannot be ruled out altogether.[47] And, as a recent report of the Secretary-General stated, "if petroleum were discovered in the seabed beyond the limits of national jurisdiction, and close to the major importing markets, the transport cost differential would improve its attractiveness."[48]

Even the outlook for the deep sea exploitation of manganese nodules, which was so uncertain until recently, is said to be "substantially brighter" now as the result of recent mining operation tested by a U.S. firm in the Atlantic and an engineering test of Japanese design in the Pacific. It has been reported that nodule recovery technology is being actively studied by many companies in several countries and that commercial production of nodules will be possible before 1980. Thus, after nearly nine years of research testing and investing $28 million, a U.S. firm, Deepsea Ventures, successfully tested an airlift hydraulic dredge system in 760-915 meters of water in the Blake Plateau in the Atlantic Ocean. The company has also put into operation in Virginia a small pilot plant for recovering metals from nodules on an experimental basis. Two other companies from the United States, the Hughes Tool Company and Kennecott Copper Corporation, are also said to be studying procedures for the deepsea exploitation of minerals. In addition, a consortium of 24 companies, representing a number of developed Western European countries, intend to finance in the summer of 1972 a program to test on a large scale the continuous line bucket dredging system invented by Japan and designed to recover Pacific sea-floor nodules from depths ranging to 5,000 meters. Moreover, six Japanese and European companies are studying the manganese-oxide nodule technology. The Lamont-Doherty Geological Observatory has published and made available maps showing the distribution of manganese nodules in the oceans of the world. It is reported that the procedures for recovering valuable metals from the nodules promise to become economically profitable in the near future, and there is reason to believe that minerals on the seabed can be commercially exploited by 1980.[49]

### Effect of Mineral Production from the Seabed on the World Markets and Its Remedy

Whatever the scale of development, at present or in future, most of the delegates in the Seabed Committee have been urging that the development and use of the area and its resources beyond the limits of national jurisdiction should be "undertaken in such a manner as to foster healthy development of the world economy and balanced growth of international trade, and to minimize any adverse economic effects caused by fluctuation of prices of raw materials resulting from such activities."[50] Since most of the developing countries depend heavily on export of raw materials and minerals, they have been concerned that production of large quantities of minerals from the seabed might upset the world market in these basic commodities and might ruin several other countries while benefiting a few. The result might be that the developing countries might lose more than they would gain from the exploitation of the common heritage of mankind. In response to these fears of the poor, underdeveloped countries,

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[45] McKelvey & Wang, n. 41, p. 10.

[46] Secretary-General's Report, n. 42, p. 45.

[47] McKelvey & Wang, n. 41, p. 8; see also Secretary-General Report "Mineral Resources of the Sea," UN De E/4680 (1969).

[48] *Op. cit.*, n. 42, p. 42.

[49] See McKelvey (U.S.A.), Sub-committee I of Seabed Committee, Provisional Summary Records, UN Doc. No. A/AC.138/SC.1/S.R.37, 17 March 1972, p. 13; Zegers (Chile), *ibid.*, A/AC.138/SC.1/SR.35, 10 March 1972, p. 13; Secretary-General's report, n. 42, pp. 46-47.

[50] Declaration on General Principles of General Assembly Res. 2749 (XXV).

the General Assembly requested the Secretary-General to:

> (a) Identify the problems arising from the production of certain minerals from the area beyond the limits of national jurisdiction and examine the impact they will have on the economic well-being of the developing countries, in particular, on prices of mineral exports on world market;
> (b) Study these problems in the light of the scale of possible exploitation of the seabed, taking into account the world demand for raw materials and the evolution of costs and prices;
> (c) Propose effective solutions for dealing with these problems.[51]

In a preliminary assessment of the whole situation, the Secretary-General in his report came to the conclusion that "the impact of seabed production is likely to be of minor consequence" during the next two or three decades for the two most important commodities, hydrocarbon and copper. On the other hand, manganese nodule mining might affect the markets for manganese, and at a subsequent stage the markets for cobalt and nickel. He therefore suggested some possible international arrangements to preserve the interests of the developing countries.[52] The report recommended "a levy per ton of metal produced from the seabed" and some "compensatory financing by the international machinery to minimize the effect of possible declines in export revenues on the economy of the few developing countries, which might be affected."[53] The report pointed out that since existing marketing methods of petroleum favor large-scale buyers, transactions with the developed market economy countries are often at discounted prices. Consequently, most developing countries pay substantially higher prices for petroleum than the industrialized countries importing large quantities of oil. It, therefore, suggested the setting up of a new system under which the developing countries could purchase at least part of their import needs from producers in the area beyond national jurisdiction under arrangements with the international machinery at the best prices offered to the European or American countries or to Japan, saving them an important fraction of their petroleum import bills.[54]

[51] G.A. Res. 2750A (XXV).
[52] Report of the Secretary-General, n. 42.
[53] *Ibid.*, p. 66.
[54] *Ibid.*, pp. 44, 64.

## Anticipated Benefits from the Exploration and Exploitation of the Common Heritage

The types of benefits to be derived from the exploration and exploitation of the resources of the seabed and ocean floor beyond national jurisdiction, will depend on a number of factors, all of which cannot be determined as yet. In particular, these benefits will depend, as the Secretary-General's report made it clear, "on the development of offshore mining technology and on future market conditions for minerals produced from the seabed."[55]

The benefits anticipated from the exploitation of the seabed can be classified in two groups: financial and non-financial. Financial benefits would consist of the balance remaining after the deduction of the expenditures from the revenues of the international machinery. It is only to be expected that during the initial period costs will be much more than the revenues. If the international machinery directly undertakes the exploitation of the deep seabed area, its expenditures will be much larger than those of a regulating international machinery.[56] By the very nature of mining operations, it has been pointed out, economically viable production at great depths cannot be attempted on a small-scale experimental basis. To finance only one venture for the mining and processing of metals from manganese nodules at the rate of one million tons per year—the least viable project—it is estimated that it would require capital outlay of nearly $200 million, which is more than the gross budget outlay of all UN operations.[57] It is not going to be an easy task to raise this large initial capital for the possible subsequent sharing of net benefits.

But apart from the initial outlay and normal expenditures of mining operations, the international machinery would be expected to undertake several other activities, as we shall see presently, which will call for expenditures by the machinery.[58]

It has been pointed out that in these circumstances for an initial period of several years, or perhaps decades, costs will outstrip revenues and there will be no financial benefits. Indeed, until the production

[55] Report by the Secretary-General, "Possible Methods and Criteria for the Sharing by the International Community of Proceeds and other Benefits derived from the exploitation of the Resources of the Area beyond the Limits of National Jurisdiction," A/AC.138/38, 15 June 1971, p. 4.
[56] Secretary-General's Report, n. 55, p. 10.
[57] See Bernard H. Oxman, statement before Subcommittee I of Seabed Committee, August 18, 1971, n. 40, p. 55.
[58] Report of the Seabed Committee (1970), UN Doc. A/8021, p. 101.

of minerals reaches a level where the value of the minerals extracted covers expenditures, provision will have to be made for running the international machinery.[59]

### Non-financial Benefits

Even if no financial benefits in the sense of net revenue available for distribution among states are envisaged for a few years, the exploration and exploitation of the deep seabed under the auspices of an international authority is expected to yield some very tangible non-financial benefits. Apart from providing an inexhaustible source of much-needed valuable minerals and giving mankind a viable alternative to the fast depleting land-base sources, "an international regime would promote the systematic development of resources through procedures aiming at the optimization of exploration and exploitation activities." It would also attempt to develop resource exploitation in a manner best calculated to promote greater stability in the raw material markets.

The international machinery would also be expected to help promote research activities and to make a vast volume of scientific and technical knowledge available. It could also, as the Secretary-General suggested,

> . . . institute training programmes for nationals of developing countries to guarantee the participation of personnel from all countries in the application of rapidly expanding seabed technology. Thus, each country could gradually acquire a corps of technically competent seabed experts, while the international community would have the broadest knowledge-base on which to work.

The international regime might also help in the creation and enforcement of rules and standards governing all seabed activities with a view to ensuring the preservation of marine environment.[60]

### Equitable Distribution of Benefits

It has been emphasized time and again by the General Assembly that whatever the benefits to be derived from the exploration and exploitation of the seabed beyond national jurisdiction may be, they should be distributed equitably "taking into particular consideration the interests and needs of the developing countries, whether landlocked or coastal." Although it is almost impossible "to transform the present inequitable distribution of land resources and the law and economic practice to justify and protect them," it has been emphasized, it seems "rational and still possible to devise and establish a system of laws and practices for the sea and its resources which would serve the present and future generations."[61] Most of the countries of the third world want and demand the distribution of benefits to reflect the international desire to bridge the gap between the rich and poor countries and promote universal peace and well-being. As the Tanzanian delegate said:

> The present division of the world in a few 'have' and many 'have not' nations was intolerable and current systems tended to perpetuate disparities rather than overcome them. A new and determined attempt must therefore be made to devise a more just and humane system for sharing the world's resources and pooling knowledge and technology.[62]

It is suggested that one way of equitably distributing the financial benefits of the international authority (i.e. revenues minus expenditures) in the spirit of the General Assembly directive would be to relate the sharing of benefits to the needs of the countries concerned on the basis of an agreed scale, so that the least developed might receive the most and the most developed might receive the least. Taking into account this basic premise, the Secretary-General suggested several criteria for the distribution of such benefits which would need further consideration and thought before they could be implemented.[63]

During the initial period, when there is no possibility of a large net income for the international machinery, direct distribution to different states might result in fragmentation of resources and only marginal benefits for the receiving countries. The Secretary-General, therefore, suggested in his report that it might be more advantageous to concentrate available proceeds in some high-priority programs, such as the promotion of development in the least developed countries. Such allocation of proceeds of the international machinery to certain programs of the developing countries, the Secretary-General made it

[59] See Secretary-General's Report, n. 55, p. 9.

[60] See for an enumeration of these financial and non-financial benefits, Secretary-General's Report, *ibid.*, pp. 6-7.

[61] See Warioba (Tanzania), A/AC.138/SC.1/SR.5, 20 July 1971, p. 5.

[62] Warioba (Tanzania), n. 61.

[63] See Secretary-General's Report, n. 55, pp. 14 ff.

clear, could not be termed "aid and must not be thought of as a substitute for existing foreign aid arrangements."[64]

In view of the fact that they cannot expect much financial benefit from the seabed authority in the foreseeable future, most countries are more interested in non-financial benefits that are expected to accrue from the establishment of an international regime. For some time to come only advanced industrial countries will benefit from the exploitation of the seabed. Only they can afford the highly sophisticated requirements of deep-sea mining; only they possess the needed capital and advanced technical and scientifical knowledge and equipment. The technological and engineering industries in these countries will get a further boost from the exploration and exploitation activities in the seabed.

Moreover, since the technologically advanced countries will be able to provide the processing facilities for minerals produced in the area at least for some time to come, they will remain major importers of these raw minerals. They will thus not only gain in the further development of their mineral processing industries, but also benefit from the handling of physical output which will encourage their ocean transportation industries.[65]

Well aware of these facts and their weaknesses, the developing countries know that they must accumulate their own expertise and develop their own technology if they do not want to remain in a permanently inferior position in the use and enjoyment of mankind's common heritage. So long as they have to purchase technological services in the exploration and exploitation of the resources of the seabed, the technologically advanced countries will have undisputed mastery of the common heritage. They, therefore, insist on international cooperation in scientific research, active and maximum participation of their nationals in the various stages of the exploration and exploitation of the seabed resources, publication of research programs, dissemination of the results of such researches through international channels, and rapid and effective transfer of seabed technology. It is for this reason that several countries suggested, during discussions in the Seabed Committee, the establishment of a special fund for the training of experts from developing countries in the various aspects of seabed technology. Speaking for most of the underdeveloped countries at the March 1971 session of the Seabed Committee, the representative of Ceylon felt that "the international machinery would have a vital role to play in the collection, early publication and dissemination of information and serving as an intermediary for effecting the transfer of technology." He added that the Authority would

> . . . be expected to sponsor or assist joint research programmes, to ensure the placement of personnel from developing countries in national and international exploration and exploitation operations; to sponsor the placement of scientists from developed countries in developing countries with a view to training the latter's personnel; and in every other way possible to reduce and ultimately eliminate the developing countries' dependence on the developed countries for seabed technology.[66]

### Pleas for a Strong International Machinery

It is only natural that a vast majority of the countries, consisting as it does of a large number of poor, struggling and until recently suppressed countries of the third world, being as yet unable to exploit the seabed themselves because of its prohibitive costs and their technological incapability, and afraid that the technologically advanced countries would exploit the resources of the seabed for their own benefit and to the detriment of the interests of the poor underdeveloped countries, should want a strong international machinery with extensive powers of exploration and exploitation of the deep seabed and its resources. Even if the advanced countries agree to give up part of the resources exploited by them in the interest of the common benefit of mankind, it is felt that, with a weak international machinery having an authority to give licenses for exploration and exploitation of the seabed, the technologically big Powers would get the lion's share. The other members of the international community will get only crumbs of the common heritage thrown by the big Powers. Thus, during the 1971 session of the Seabed Committee, almost all the developing countries insisted on having an international seabed authority with full international legal personality and wide functions and powers. Some Asian, African, and Latin American countries suggested the creation of an international agency which, as the "agent of mankind," should exercise exclusive jurisdiction

[64] *Ibid.*, pp. 12-13.

[65] See *ibid.*, p. 18.

[66] Pinto (Ceylon), Subcommittee I of Seabed Committee, Doc. No. A/AC.138/SC.1/SR.11, pp. 16-17; see also Tukuru (Nigeria), A/AC.138/SC.1/SR.10, 3 August 1971, p. 24; Thompson-Flores (Brazil), A/AC.138/SC.1/SR.3, 25 March 1971, p. 16; Mendouga (Cameroon), A/AC.138/SC.1/SR.12, 3 August 1971, p. 7.

over all activities of the total area lying beyond national jurisdiction and which should not only control mining of the deep seabed, but also be the only entity authorized to mine the deep seabed, with exclusive authority to conduct exploration, exploitation, processing, and marketing of all deep seabed minerals.[67]

On the other hand, precisely because the seabed exploration and exploitation would involve such large outlays of capital and such great risks as the United Nations or any other international authority set up for that purpose cannot afford, and because states would have the necessary offshore expertise, it is recommended by the technologically advanced Powers that the proposed seabed authority should not indulge in exploration or exploitation activities but be only a regulatory body.[68] France, the United Kingdom, the United States and the countries of the Communist bloc strongly opposed the proposals of the developing countries and expressed a preference for an administrative or regulatory agency authorized to issue licenses to individual countries which would in turn either issue sub-licenses to their industrial firms or themselves undertake or sponsor mining operations in the deep seabed.

### Moratorium

It will not be easy to reach an agreement on the type of machinery that must be established to take care of the common heritage of mankind. But until such an agreement can be reached, a very large part of the world community is seriously concerned about the unabated exploration and exploitation activities in the seabed beyond any reasonable limits of national jurisdiction. The moratorium resolution of 1969 [Res. 2514D (XXIV)][69] that we have referred to earlier is merely a reflection of the deep fear of the underdeveloped states that a large part of the seabed may be exploited and appropriated by those who have the capacity to do it before an acceptable agreement on the legal regime of the seabed is reached. Adopted over the vigorous opposition of the principal technologically advanced countries, it was only a weak and futile attempt to preserve "the seabed and the ocean floor . . . from actions and uses which might be detrimental to the common interests of mankind." As the Swedish delegate, Mrs. Myrdal, stated as early as November 14, 1967:

> Mankind has become warned that while negotiations are going on, technological developments are often accelerating and the opportunities to exploit them are grasped with such alacrity by those who have the power to do so that when we finally come to the negotiating table, there may not be a great deal left open to negotiate about.[70]

She again pointed out in 1969 that "commercial interests are clamoring vociferously for go-ahead signals. . . . Military interests seem to be no less eager." "Powerful techniques are already in the hands of a few countries," she reminded the Committee, and these might not take long to exploit them.[71]

This would indeed prejudice the joint interests of humanity and would be in violation of the generally accepted principle of the deep seabed beyond national jurisdiction being regarded as the common heritage of mankind. "It would be ironic," said the Indian representative,

> . . . if the already opulant communities of the world were left with unchartered freedom to exploit the riches of this new environment. This may tragically lead the economically backward majority of the world to discard the path of reasoned accommodation as unsuccessful and to take to more aggressive measures. Therefore it is of supreme importance to take into account the interests, needs and aspirations of the developing countries.
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> If man has a stake in the area, if the developing countries could benefit from its wealth, then surely no exploitation of the area should take place which is not within the context of the new principles and norms to be developed, and which does not fall within the ambit of a regime which would ensure an equitable management of the resources of the sea-bed and the effective participation of the developing countries in it.[72]

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[67] See debate in Subcommittee I of the Seabed Committee.

[68] See Oxman, n. 57, pp. 55-59; "International Sea-bed regime and machinery working paper" submitted by Canada in *Report of the Seabed Committee*, G.A.O.R., 26th Session Supplement No. 21 (A/8421), pp. 218-19. Mr. Simpson (U.K.), Seabed Committee, 1 Subcommittee, A/AC.138/SC.1/SR.41, 21 March 1972, p. 6.

[69] *Preamble* to Res. 2574 (D) (XXIV).

[70] Mrs. Myrdal, First Committee, A/C.1/PV.1527, 14 November 1967, p. 56.

[71] First Committee, 24th Session, UN Doc. No. A/C.1/PV.1680, 7 November 1969, pp. 23-25.

[72] Mr. Sen (India), First Committee, 24th Session, UN Doc. No. A/C.1/PV.1673, 31 October 1969, p. 28; See also Saraiva Guerroiro (Brazil), *ibid.*, A/C.1/PV.1674, 31 October 1969, pp. 11-12; Eugo (Cameroon), A/C.1/PV.1675, 3 November 1969, p. 26.

Anarchy and a scramble for possession and exploitation, it was warned by several delegates, could bring no good to any nation. "It would be the cause of conflict and friction and would create new problems threatening our precarious peace."[73]

The technologically advanced countries, however, have always been strongly opposed to any restriction on their complete freedom to explore and exploit the resources of the seabed. There is no rule of international law, they have contended, to justify such an action.[74] Thus, the U.S. representative, expressing the views of the technologically developed countries, said that the moratorium resolution proceeded on a premise which was unsound and self-defeating. All mankind would benefit, he pleaded, by the exploitation of deep seabed resources. Technology had not developed so far, he pointed out, that the developed Powers could monopolize the exploitation and rush greedily to exhaust seabed resources before the international community could establish a legal regime. But if the technology did not move forward, there would be no exploitation and no benefit to anyone, developed or developing, coastal or landlocked, east or west, north or south.

Moreover, he suggested, this resolution would in practice "encourage some states . . . to move towards unjustifiably expansive claims of national jurisdiction just in order to remove those activities of exploitation from the scope of prohibition contained in the . . . resolution, and thus render them, in their view, legitimate."[75] How could such a moratorium be effective if there were no agreement on the limits to which it were to apply? asked the representatives of the United Kingdom and France.[76]

The underdeveloped countries hoped in vain that they would be able to persuade the technologically advanced countries to hold their advancing technology in abeyance until an agreement could be reached about the legal regime of the seabed. Asserting that the seabed was the common heritage of mankind, they argued that its wealth should be administered by and for all. In other words, they wanted an assurance of a fair share of the pot and did not want to be left dumb spectators. The moratorium resolution was an effort to slow down the pace of technology to the pace of diplomacy.

This was, however, too much to expect. The technologically advanced countries had declared soon after the adoption of the moratorium resolution that they would not be bound by it.[77] The advancing tide of technology, the smaller countries were told, was inexorable and could not be stayed by words. The technologically advanced countries were not prepared to wait until the Seabed Committee could reach an agreement, if it ever did, in making the best use of their technology and exploit the resources of the seabed. All that the industry in these countries wanted was an assurance from their governments that their interests would be protected in any future international regime. Thus, T. S. Ary of the American Mining Congress, in his testimony before a Senate Subcommittee, pointing out that the U.S. industry was close to being capable of exploiting sizeable quantities of hard minerals on the seabed beyond continental margins, emphasized the need for domestic legislation "to assure security of investment and the control of the ocean activities of the U.S. citizens."[78] Most of the witnesses before the U.S. Senate Subcommittee on Outer Continental Shelf referred to the non-binding nature of the moratorium resolution, and suggested that the exploration and exploitation of the seabed should be encouraged rather than discouraged.[79] John R. Stevenson, Legal Adviser to the Department of Senate, in a letter of January 10, 1970, to Senator Metcalf, Chairman of the Subcommittee, pointed out that although the moratorium resolution was not legally binding, the United States was required to give "good faith" consideration to the resolution in determining its policies. He made it absolutely clear, however, that the

[73] Rossides (Cyprus), A/C.1/PV.1676, 4 November 1969, p. 76.

[74] Oda (Japan), Seabed Committee's Legal Subcommittee, A/AC.138/SC.1/SR.6, 19 March 1969, p. 53.

[75] Mr. Philipps (U.S.A.), General Assembly 24th Session, A/PV.1833, 15 December 1969, pp. 6-11, First Committee, A/C.1/PV.1709, 20 December 1969, p. 26.

[76] Hildyard (U.K.), First Committee, A/CA/PV.1709, 2 December 1969, pp. 381-90; Dejamauret (France), *ibid.*, p. 31.

[77] See "U.S. Explains its votes on Seabed Resolutions," *Department of State Bulletin*, vol. 62 (1970), p. 89; See also testimony by Elliot L. Richardson, Undersecretary of State, and John R. Stevenson, Legal Adviser to the Department of State in Hearings before the Special Subcommittee on Outer Continental Shelf of the Committee on Interior and Insular Affairs, U.S. Senate, 91st Congress, Second Session, on "Issues Related to Establishment of Seaward Boundary of U.S. Outer Continental Shelf," April 1, May 20 and 27, 1970, Part 2 (Washington, 1970), pp. 437, 448-49, 458-59.

[78] Hearing before the Subcommittee on Minerals, Materials and Fuels of the Committee on Interior and Insular Affairs on "Issues related to Establishment of Seaward Boundary of U.S. Outer Continental Shelf," U.S. Senate, 91st Congress, Second Session, September 22 and 23, 1970, Part 3 (Washington, 1970), p. 38.

[79] See Report of December 21, 1970 of the Special Subcommittee on Outer Continental Shelf to the Committee on Interior and Insular Affairs, U.S. Senate (Washington, 1970), pp. 21-23.

> . . . Department does not anticipate any efforts to discourage U.S. nationals from continuing with their current exploration plans. In the event that U.S. nationals should desire to engage in commercial exploitation prior to the establishment of an internationally agreed regime, we would seek to assure that their activities are conducted in accordance with relevant principles of international law, including the freedom of the seas, and that the integrity of their investment receives due protection in any subsequent international agreement.[80]

In his announcement of U.S. Ocean Policy on May 23, 1970, President Richard M. Nixon pointed out that the negotiation of a complex treaty on the legal regime of the seabed was bound to take some time. He said, therefore, that

> I do not . . . believe it is either necessary or desirable to try to halt exploration and exploitation of the Seabed beyond a depth of 200 meters during the negotiating process.[81]

The working paper submitted by the United States before the Seabed Committee at the twenty-fifth session in 1970, on a draft UN Convention on the International Sea-bed Area, provided for "due protection for the integrity of investments made in the international sea-bed area prior to the coming into force of this convention."[82]

However, the continued insistence by the poor, underdeveloped countries that the seabed area beyond national jurisdiction, being the common heritage of mankind, should not be exploited except for the common benefit of all countries, their demands for a strong international machinery, and their emphasis on moratorium over exploitation of seabed resources until an international regime is established, have been disturbing the technologically advanced countries, and they are afraid that the hostile international climate may adversely affect their deep-sea mining interests. Thus, an Observer Group of the U.S. Senate Committee on Outer Continental Shelf to the July-August 1971 Session of the UN Seabed Committee, said in its report:

> It seems to us that these developments call attention to the growing threat to U.S. mineral interests in the deep seabed. . . . With unilateral expropriation of U.S. mining-investments on the upswing, as evidenced recently in Chile, the United States would do well to make sure that our rights to the seabed are not lost to some of the puerile developing nations. Some of the latter apparently believe that, because they may have the majority of the votes in the UN Seabed Committee, they can overturn international law merely by threats or by making demands.[83]

The Observer Group recommended to the Committee to

> . . . consider legislation designed to reinforce U.S. rights to mine the deep seabed, encourage U.S. leadership in deep sea technology and provide a climate conducive to U.S. investment in deep seabed exploration and exploitation.[84]

It asserted that "ample authority, under well-established law enables the United States to regulate the activities of its nationals engaged in deep seabed mineral exploitation wherever upon the high seas they may be conducting such operations."[85]

On November 2, 1971, Senator Metcalf introduced in the Senate a bill called the Seabed Hard Mineral Resources Bill, submitted by the American Mining Congress "to provide incentive for the continued exploration and exploitation of the minerals on our continental margins and on the deep seabed beyond the limits of exclusive national jurisdiction."[86] The draft bill provided for the protection of the miners, conditions on which exploration/exploitation licenses might be issued by the Secretary of the Interior, and insurance and protection of investments and exclusive rights in the event of adoption of an international regime.[87]

Encouraged no doubt by their home governments, numerous organizations in such technologically developed countries as the Federal Republic of Germany, France, Japan, Italy, and the United States are reported to be actively engaged in the develop-

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[80] *Hearing before the Special Subcommittee*, n. 77, 91st Congress, First and Second Sessions, December 17, 1969, January 22, March 4, 1970 (Washington, 1970), p. 210-11.

[81] See *Report of the Subcommittee*, n. 78a, p. 214.

[82] See Report of the Seabed Committee, GAOR, 25th session, Supplement No. 21 (A/8021) (New York, 1970), p. 155.

[83] *The Law of the Sea Crisis:* A staff Report on the UN Seabed Committee on the Outer Continental Shelf and Marine Mineral Development prepared at the request of Henry M. Jackson, Chairman, U.S. Senate Committee on Interior and Insular Affairs, December 1971 (Washington, 1972), p. 9.

[84] *Ibid.*, p. 5.

[85] *Ibid.*, p. 10.

[86] Senator Metcalf, *Congressional Record*, 92nd Congress, First Session, November 2, 1971, p. S2801.

[87] *Ibid.*

ment of technology associated with the recovery and processing of deep-ocean minerals.[88] This unabated activity in the deep seabed, in violation of the moratorium resolution and the declaration of principles, has created a feeling of deep concern and disquiet among the weaker members of the international community. During the March 1972 session of the Seabed Committee they strongly protested against the defiance of the solemnly adopted resolutions of the General Assembly, which, they argued, could not be ignored lightly on the ground that they were not formally binding.[89] Supported by an overwhelming majority, these resolutions did provide probative evidence of the belief of states concerning the existence or otherwise of certain rules of law. These expressions of political and juridical conscience of nations, or at least of their majority, have a force which is much more than recommendatory.[90] Explanations by some of the advanced countries that activities in the extraterritorial seabed resources were only exploratory and experimental activities which ought to be encouraged rather than discouraged, and no state had so far been exploiting minerals on a commercial scale,[91] failed to satisfy the aggrieved developing states which believed that the experiments were designed to perfect the first part of the exploitation process. The largest commercial companies would not be spending huge sums of money just for the sake of theoretical knowledge.[92] They, therefore, wanted formal assurances from all states connected with such activities that no commercial exploitation of the resources of the seabed and ocean floor beyond the limits of national jurisdiction would be undertaken before the establishment of the international regime.[93]

There is little doubt that the present "confrontation" between the developed and the developing states is not conducive to the development of healthy international law and relations. In the present interdependent shrunken world society all countries, big and small, need each other. Old notions of each nation for itself and God for us all are gone forever. There is need for cooperation, joint efforts, and accommodation of interests of all groups of states in our present endeavor to develop a healthy and universally acceptable law for the exploration and exploitation of the seabed and ocean floor in the interest of all mankind. This cannot be achieved by the present activities of the technologically advanced countries in defiance of world public opinion. Nor can it be realized by the intransigent attitude of the developing countries towards the vital interests of the developed states, especially in regard to navigation. We must make every effort to achieve our goal through cooperation and joint action. International law must take into consideration the new philosophy of the law of the sea based on equity and justice for all. It must develop beyond the old concept of coexistence to a new law of cooperation.

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[88] See Senator Metcalf, *ibid.*, see also Zegers (Chile), Subcommittee I of Seabed Committee, Provisional Summary Records, A/AC.138/SC.1/SR.43, 27 March 1972, p. 7.

[89] See Zegers (Chile), *ibid.*, A/AC.138/SC.1/SR.35, 10 March 1972, pp. 12-13; Arias-Sehreiber (Peru), *ibid.*, p. 15; Goulobol (Turkey), A/AC.138/SC.1/SR.36, 15 March 1972, p. 18; Al-Qaysi (Iraq), *ibid.*, p. 22; Khavachet (Kuwait), A/AC.138/SC.1/SR.38, 16 March 1972, p. 5; Komatina (Yugoslavia), A/AC.138/SC.1/SR.39, 17 March 1972, p. 2; Saraiva-Guerreiro (Brazil), *ibid.*, Jagota (India), *ibid.*, p. 17; Pinto (Ceylon), A/AC.138/SC.1/SR.43, 27 March 1972, p. 16.

[90] See F. B. Sloan, "The binding force of a recommendation of the General Assembly of the United Nations," *British Yearbook of International Law*, vol. 25 (1948), pp. 1-33; D. H. N. Johnson, "The Effect of Resolutions of the General Assembly of the United Nations," *ibid.*, vol. 35 (1955-56), pp. 97-122; Obed A. Asamoah, *The Legal Significance of the Declarations of the General Assembly of the United Nations* (The Hague, 1966), Jorge Castaneda, *Legal Effects of United Nations Resolutions* (New York, 1969).

[91] Debergh (Belgium), A/AC.138/SC.1/SR.39, 17 March 1972, p. 14.

[92] Zegers (Chile), A/AC.138/SC.1/SR.43, 27 March 1972, p. 7.

[93] Khavachet (Kuwait), n. 89.

## Discussion

**Tuesday afternoon, June 27**

*JOYE:* Judy Joye, Oceanographic News Service. First I would like to comment on something that I have been dying to discuss for more than a year. I would like to suggest an amendment to the title of one United Nations study dealing with the equitable sharing of benefits derived from seabed resources. I would like to see the title of that study amended to include one additional word—the equitable sharing of the benefits and *losses* of seabed resources.

Now I would like to make a general comment regarding this current session, which is titled "Concepts in Sharing the Common Heritage Wealth." The papers and statements that we have heard so far discussed general philosophy. Considering the fact that the Law of the Sea Conference is approaching momentarily, I believe that the time for philosophical statements should have been in 1968, 1969 and perhaps 1970; but in 1972 I believe that we should have been offered concrete proposals by this session's speakers.

In this entire session no speaker has included one concrete proposal in his statement. In a way, I feel like someone who has been listening to an election campaign in which a candidate says that he wants to improve the Social Security program, or that he wants to improve the welfare or unemployment programs. You listen to a long political speech, and when it is over you find out that you have been given no idea of how these programs are to be improved.

I believe that at this time—in 1972—with the still remote possibility of convening a conference in '73, we should be discussing concrete proposals; and if this group of experts has no concrete proposals to offer, then perhaps the United Nations Seabed Committee is correct in taking the long period of time that they have, and perhaps the UN is correct in postponing the 1973 Conference for a year until this expert community is able to come up with a workable plan.

*MIKDASHI:* I support the view that calls for more concrete and elaborate proposals. I would like also to suggest that proposals don't come necessarily from one direction. In other words, I trust in the competence and ability of members of this audience to offer practical suggestions.

Regarding principles and rules for effective multinational participation, I have suggested the approach of purchase options by national corporations of developing countries in ventures started by corporations of the developed countries. It would be helpful to find out which principles among those previously suggested would be workable. My experience, I should say, is largely with the petroleum and minerals industries, in which a number of contracts awarded by host countries give options to national corporations to buy in at a later date, once mineral deposits have been found in commercial quantities. The purchase on the part of the corporation of the host developing country has often been made on the basis of the book value of exploration and development. A number of these new contracts provide for 50-50 participation. Others provide for an escalated participation in favor of the developing country. I think the management contract formula devised by Venezuela and other mineral exporters is extremely interesting: a contractor from an advanced country works on behalf of the national corporation, while the technical know-how is being transferred to domestic operators. Payment for know-how and other inputs to the expatriate contractor can be made in kind in the form of a certain share of the mineral deposits, if discovered.

There is a myriad of possible alternatives. I find it difficult to go into too many details in the brief time alloted to this discussion. I would, however, like others to comment on my ideas regarding participation in the common heritage of the seabed resources. I am soliciting reactions from industry people as to their workability. Certain forms of participation have been, for several years, operative in some petroleum and mineral exporting countries.

*KILDOW:* I think that earlier I gave a fairly pessimistic view of why I didn't see a future—or a near future—for a plan such as you call for, mainly because, as someone has already said, the interests of the developing countries right now are really in conflict with the interests of the developed countries. At this period in history it is very difficult to find the common denominators where each side is not feeling threatened.

You also assumed that we must go ahead; this is 1972 and the conference may be next year. But you are assuming that the whole world must go ahead,

and maybe it is not to the advantage of other countries beside the United States to go ahead quickly. They have been saying this for two days now, members of the developing countries and other countries beside the United States, that a further breakdown in world order, based on disregard of traditional international law, may not really hurt the developing countries; it probably will hurt the dominant powers now because their power is based on the current world order.

So a breakdown in world order may be very much to the advantage of the developing world. It is not very much to their advantage right now, so waiting may be part of the strategy that perhaps something more will happen to alleviate some of the direct conflict over the next few years, or maybe further breakdowns somehow will bring agreement closer. But I think that you assume there is too much agreement that something must be done soon.

*ANAND:* I think that it has been rightly pointed out that this is 1972, and by this time we should be talking about concrete matters, but then, the most important thing is that there is no agreement on principles, and so long as there is no agreement on principles, we have got to talk about the philosophy. There is no alternative to it.

Whatever the developed countries may say, the common heritage of mankind has come to be considered as just nothing but a phrase which has no meaning. It is a meaningless phrase according to most of the developed countries, and unless they accept it, the real meaning of it—and unless their behavior reflects their acceptance—we have no alternative but to go on talking about philosophy and principles.

*GREENWALD:* I am Dick Greenwald from Deepsea Ventures, Inc., and I would like to comment on the talk given by the gentleman from Lebanon, and put it on a positive basis.

He has come up with some ideas on technology transfer that may have some merit; if he can produce a forum, I will participate in such a forum in good faith. I don't see much sense in saying that the positions of the LDC's and the positions of the developed countries are so divergent that we should not talk about it.

*WEHRY:* I am Georges Wehry, Netherlands Mission to the UN, and I would like to say something further on the remark that was made, that as long as we do not agree on principles it will be hard to draft a few tangible proposals for the equitable sharing of benefits.

Now, there is certainly one principle that is very seldom discussed, and that I would like to limelight here. In the course of the discussions that led to the Declaration of Principles, it did come up but it was later on rejected, and it is a principle that concerns a number of both the developed and less-developed nations.

I am referring to the principle that those nations which have not been favored by nature or by history with a generous coastal position and which therefore cannot unilaterally claim vast expanses of marine territory, have a right to compensation. Man was originally earthbound and has carved up his habitat in a primitive, unsatisfactory way into a disparate array of nations; it is to avoid a repetition of haphazard jungle-fashion grabbing of territory and wealth that, through the United Nations, mankind has declared the seabed a common heritage. It follows that the greater the unilateral claims of certain coastal states, the more imperative it becomes for handicapped states—handicapped in terms of geography—to insist that they have equal rights to profitable, exploitable areas of marine environment.

Just to illustrate my point: we have heard several times from Latin American countries that one of the reasons that prompted a number of Latin American countries to take the initiative to extend their claims over large areas of marine environment was that they could not accept the concept of the 200-meter depth criterion of the continental shelf, as they have no continental shelf.

A number of states who have continental shelves have for a long time portended that this was not a sensible argument, but clearly there is a consensus emerging, even though not generally outspoken, that they have here a point. I am not saying that they have a point in going as far as they go, but they have a point in stating that if you have a criterion for the expansion of national jurisdiction, then at least this criterion should be an equitable criterion and should apply to as many states as possible, and if possible to all states.

Clearly there are a number of nations who would not mind if, say, a 40-mile zone were replaced by a 100-mile zone, but there are a great number of nations that could not avail themselves of a 200-mile zone and they would not see why they should leave to others the claim that only "their" economic interests call for such vast areas of national jurisdiction.

Now why do I bring this up here? We have been discussing very generally the concepts of equitable sharing, and what I would like to put forward is

that there are a number of reasons why some groups within a nation, or why some nations within the community of nations, stay behind, lag behind. Whatever the historical reasons that have created these inequalities, law, when it evolves and when international cooperation and international organizations like the UN elaborate law, it is to correct such inequalities as far as possible.

There is no reason in the view of this group of "handicapped" states, which is a large one in the context of the 200-mile zone—(about 60 states could not avail themselves of that yardstick; 60 member states of the UN, and in fact there are ten more states who are not members of the UN) for this large group of states there is no reason why certain elements of inequality could be redressed, like differences in educational potential, technological potential—these are all being redressed intergovernmentally, and why not such an important element of inequality as the geographic location or the environmental location?

If the zones grow and eventually become accepted as inevitable in the way they are put forward by a number of farthest reaching states, this would inevitably lead to demands, which one can hear clearer and clearer from day to day in these handicapped countries, for compensation—compensation, of course, not only in the international area, as this international area, if the 200-mile zone were accepted, would in fact yield no substantial benefits for many decades or even centuries; so this demand for compensation would mean a demand for compensation also regarding benefits derived from within the areas of national jurisdiction. And there will be no escaping from that demand.

This is one of the principles, I think, that one should consider when one discusses the equitable sharing of the common heritage of mankind.

*BELLO:* Emmanuel Bello, of Nigeria. Not as opposed to the concrete suggestion put forward by the gentleman from Lebanon, but in addition to it, I would like to submit that the developing nations start, *ipso facto* and *ab initio,* to organize their own exploration, not in conjunction with multinational corporations as he suggested, but to hire their services directly as advisors; and an agreement should be reached over a period of years for training and transfer of technological know-how to these developing nations, as opposed to working in conjunction with the multinational corporations which will not, for one reason or another, be in a position to transfer the technological know-how.

As Mrs. Kildow suggested, there might be an element of deception in the long run; the questions of hiring and paying and demanding services for the payment should be evolved from the beginning, to avoid being enslaved for an indefinite period to the multinational corporations.

*KILDOW:* I welcome that suggestion; I think that would be a fine idea. There is the other side to it, too, and I would ask that those states who would like to participate in such a venture,—or, to participate in this kind of cooperation—must also, as I suggested, decide to make a commitment and to mobilize their financial, educational and cultural resources also, to exploit whatever help that they can get from the developed countries.

*MIKDASHI:* In my suggestion for multinational corporations, I don't expect every less-developed country to venture into the seabed. Some developing countries may find no attraction to invest in seabed development. I have outlined the social or national gain a state may expect; and the planners of a country may decide that they have other, more productive opportunities than going into the seabed.

The international regime should accommodate countries depending on their circumstances. I did mention that countries are very different; even the so-called developing countries have wide differences. So whatever approach in participation is decided on, a certain measure of flexibility is necessary.

Participation should be offered to countries which consider it to be in their best national interest to do so, and which in their own social cost-social benefit calculus find out that it pays them to participate in the management and control of seabed resources, and not just to limit themselves to receiving dividends from whatever income accrues to the authority of the international regime.

*JOYE:* It has been stated several times this afternoon that there was no agreement on general principles, and I was rather surprised to hear that comment. The Seabed Committee is an official body which has been delegated the responsibility of drafting a new seabed treaty. I believe that the Seabed Committee considers it a fact that there is agreement on the general principles as they stand today.

On another point, when I was talking about 1972 questions, I was referring to questions such as the funding of a regime. I think that an important question that should be discussed at this present time is: at what point do you start sharing profits? Do you start paying out income prior to paying the debt accrued in starting up the regime? Do you wait until

you have paid back all the countries that have set up the operating fund, or do you wait until the regime is self-sustaining before you start distributing the economic benefits?

Another question that I think is a 1972 question is the one brought up by the Tanzania proposal. Do you want a regime to exploit the resources, or should the regime be an administrative body and not get involved in actual drilling and exploitation?

These are the type of 1972 questions that I would like to hear discussed by this group this afternoon.

*DE SOTO:* I think that what was referred to is not that there is a lack of agreement on the Declaration of Principles. There is, of course, the Declaration of Principles which is the basis on which the regime has to be set up.

However, the Declaration of Principles is not an airtight document, in the sense that it does allow for a certain margin of interpretation.

I believe that there are certain philosophical issues which are yet to be resolved. There is a certain difference between the points of view expressed in the 14, I believe, proposals set before the Committee. I believe this is what Professor Anand had in mind.

You have pointed out something extremely interesting, which is the Tanzania proposal, which is by the way not the only one that provides for exploitation by the authority directly, because this is the case also of a Latin American proposal presented by 13 powers.

*LOGUE:* John Logue, Villanova University, World Order Research Institute. I have really two points to make: one on benefits and one on the regime. The first has to do with whether there should be any conditions or strings on the financial benefits which would be distributed by the ocean regime we contemplate. Dr. Pardo and others have suggested that some conditions might be appropriate. For example, the ocean authority might require that the recipient country's plans for using the money be consistent with UN Development Program objectives and procedures. If ocean wealth—or some of it—is really the common heritage of mankind, it might be quite appropriate to require that it be used in a way which seemed sensible to the world community.

My second general point has to do with the powers of the ocean regime and, specifically, with whether the regime should have the power to "explore and exploit." It seems to me that there is a middle position between the position of the United States and other developed countries, and the position of the Latin American and many other developing nations.

The United States and many of the developed countries say the ocean regime should not have a power to explore and exploit. Indeed the U.S. Draft Treaty specifically forbids the regime to have such a power. The Latin Draft, taking the opposite position, gives the international regime an *exclusive* power to explore and exploit in the international seabed area, lodging it in an agency called "the Enterprise."

I think it is a perfectly good compromise to suggest that the international community should have *a* power, but not the *exclusive* power, to explore and exploit the deep seabed. It is important to add that it might or might not want to use that power.

Now it may be true, as a number of developed countries have repeatedly suggested, that it would be so costly for the ocean regime to implement this power to explore and exploit that it would prevent, at least for some time, any significant seabed revenues going to the developing nations. The developing nations will want to think deeply about this question. But I don't think the developed countries should arbitrarily say: "We are going to save the developing countries from themselves. We are not going to let the ocean regime spend money to develop a power to explore and exploit, because we know better than they do what is good for the developing nations."

In a word, I think the international ocean authority should have a power to explore and exploit. It is a completely separate question as to whether it will or should *use* that power when it gets it.

One good reason for giving this power to the regime is that it might furnish the regime with a "yardstick" to evaluate the prices which private and public corporations charge for seabed oil and other seabed products from the seabed. It could also tell a lot about the efficiency of production and the accuracy of cost figures.

In much the same way the United States government uses the Tennessee Valley Authority, which produces and sells electricity, as a kind of yardstick to determine what is a reasonable price for privately owned utilities to charge for electricity. With some experience in exploring and exploiting, the ocean regime will be able to take a closer look at alleged business expenses of private and governmental corporations working in the oceans.

*DE SOTO:* As Dr. Logue has said, there is a Latin American proposal presented by a group of 13 nations, which proposes a virtual monopoly by the international community over the area of the seabed beyond the limits of national jurisdiction. "Monopoly" is probably the correct word.

Now, we have feared that if you have a compromised, simultaneous regime where both the authority were empowered to exploit, and following, for instance, a licensing system, private enterprises or state enterprises were allowed to exploit, the international authority would never be competitive, because it would not be provided with the funds in order to carry out such an exploitation.

However, if the only way to exploit the seabed beyond national jurisdiction is either by the authority itself or in association, or through joint ventures with the international authority, we believe that the mining companies would continue coming, if this is the only way to exploit it; and that this is the only way to make compatible the Declaration of Principles and the common heritage concept with the sharing of wealth.

We have felt that the idea of aid or technical assistance, or channeling through banks or through UNDP is incompatible with the principle of common heritage, which is, after all, common property.

*HERFINDAHL:* I have a question for Mr. Mikdashi. I am Orris Herfindahl, Resources for the Future.

In multinational corporations, private corporations, usually only one corporation has the major responsibility for operations. How would you envisage this as working out differently in the case of nations that are members of that corporation?

*MIKDASHI:* It is normal for a consortium of various participants to decide on having one operator. In the case of the joint venture equally owned by the National Iranian Oil Company (NIOC) and British Petroleum (BP) in the North Sea, the operator for the two licenses obtained by the group in 1971 is British Petroleum.

Now I can foresee the possibility of rotating the role of operator, beginning first with the operator from the developed country. When the skills and capacity of an LDC participant improve, the operation would be carried out by the LDC company concerned.

There is an alternative to this; namely, to have a fully integrated joint venture consisting of the merger of the two parties for the functions of exploration, development, and production. For a given seabed area, one would then have a single combined entity with nationals of both parties and with resources and inputs proportionately provided by both parties.

*VELLA:* Charles Vella, from the Delegation of Malta.

Perhaps I have a remark more directly connected with what Miss Joye was trying to get at about the funding of institutions of the international organizations to be set up.

In the draft Ocean Space Treaty, which was submitted by the Delegation of Malta, we have two or three articles exactly on this point, and with your permission I would read them, just for the record.

In Article 173 we say this:

"In the event that the revenue from the exploitation of the natural resources of international ocean spaces does not exceed $50 million per annum, it shall be apportioned in the budget as follows:

A. 30 percent toward the administrative expenses of the institutions.

B. 30 percent for international community purposes in international ocean space, such as: hydrographic and cartographic activities, promotion of ecological, scientific, technological and fisheries research, establishment of aids to navigation, establishment of scientific stations, et cetera.

C. 30 percent for the development of the capabilities of members which are coastal states and whose gross national product does not exceed $800 per capita, to conduct activities in ocean space."

And I will read only a part of the following Article, which is Article 174, which says:

"In the event that the revenue from the exploitation of the natural resources of international ocean space exceeds $50 million per annum, the excess over the $50 million shall be applied in the first place to cover the administrative expenses of the institutions."

How far these suggestions are accepted, of course, I am not in a position to say. The Seabed Committee has not so far started discussing these matters.

*HERRINGTON:* W. C. Herrington, Law of the Sea Institute.

Both this afternoon and this morning, various views have been expressed about who gains and who loses from the delay in the '73 conference. I have a few comments and a question with respect to that.

If the conference is delayed, and there is delay in reaching agreement on how the resources of the deep seabed should be handled, I would expect that increasing scarcity and prices would put greater pressure on certain countries, particularly countries with a shortage of resources of their own. They would be under pressure to authorize some exploration and development of deep seabed resources.

They might well argue that in view of the fact that their own country is deficient in these resources, they should be compensated by being able to go out

into the deep seabed and find the resources in which they are short.

Now, if they do this and do develop such resources, it will be very difficult for them to back off later when the conference is held and some agreement is reached on these resources.

So in view of this very strong likelihood, I think there is a real question of who gains and who loses by delay of the '73 conference.

*WALLACE:* William Wallace, University of Manchester. May I make a short comment on joint ventures, taking up the question which our Lebanese friend has raised on participation of the National Iranian Oil Company in the North Sea.

As far as the British Government was concerned, of course there were very good self-preservation reasons for looking kindly upon the participation of the National Iranian Oil Company in the North Sea oil-drilling; and I have no doubt, although I don't have any information on this, that the British Government would have been much happier if for instance the Iraqi Government and the Libyan Government had also been participating in the North Sea ventures.

Speaking, I suppose, on behalf of a declining ex-imperial power, we have at least come to see that joint ventures equals self-preservation for overseas investment in the developing countries. This is true not only in the oil field, it is also true in the—to me—astonishing reversals in the policies of some of our international banks in Africa in the last few years, where they have been moving fairly rapidly toward local companies with local participation and a substantial local training element, in order to keep a certain level of British participation and at least to delay, if not necessarily stave off permanently, the onset of complete nationalization.

I would suggest to a number of the American so-called multinational corporations that are represented here that this is a pattern which might be followed with some advantage, and perhaps pursued for American advantage in any international ventures on the ocean. As we are all aware, American investment in the developing world is, while not as vulnerable as British, nevertheless becoming vulnerable to the rising tide of economic nationalism.

*MIKDASHI:* I am delighted that the gentleman from the UK could throw some additional light on that interesting joint venture between an LDC corporation and a developed country corporation. Among the many and complex objectives of the British Government in giving oil rights in the North Sea to a joint venture of British Petroleum and National Iranian Oil Company, one objective is the desire to build greater interdependence between Iran, on one hand, and the United Kingdom on the other. As our audience knows very well, British Petroleum has 40 percent interest in the Iranian consortium which produces currently at the rate of four and a half million barrels per day.

I personally welcome this kind of interdependence. The more we have economic interdependence—I should add at equal or near-equal terms—the better it is for this world. Larger exchanges in trade, knowledge and skills among members of the world community are likely to assist in averting some of the sources of friction leading to conflict and wars, especially if these exchanges yield participants a balanced sharing in benefits.

*FABIAN:* Larry Fabian, from the Brookings Institution. I have a comment, and then a question for Miss Kildow.

My comment is a reaction to what I regard as some rather disingenuous remarks made in this room over the past couple of days about the question of timing of the Law of the Sea Conference.

It would appear that our historical memory is very short. It was only a few years ago that the United States Government, and the Soviet Government, and a few others, were dragged kicking and screaming in the United Nations to a point where they were willing to consider collectively and seriously the issues raised in the late 1960s by Ambassador Pardo and others. To now turn around and insist—or perhaps threaten—that unilateral measures are inevitable unless a comprehensive agreement is reached next year on these complex problems strikes me as remarkably insensitive to the diplomatic realities of the last few years.

Now, my question to Judy Kildow: While I share, as I think you know, most of your political perceptions about the organizational history of Intelsat, I wonder whether in your remarks—which I found very stimulating—you may not have overlooked an opportunity that could be dubbed the "Kildow amendment to the Beesley thesis" about an interim regime.

What I would like to suggest is perhaps responsive to Miss Joye; I am not sure. It is intended at least as a concrete approach, if not a concrete proposal, for an institution-building strategy. Except in Beesley's formulation, we have tended to discuss the possibility of an agreed international interim regime in only one context: it would be a minimum common denominator regime that we would agree to now if possible, with little if any explicit atten-

tion to transitional issues; if something better can be negotiated later, we would then rethink what could be done to mesh the interim regime with the requirements of the larger, more permanent arrangements.

But there is also a second and probably more diplomatically fruitful way to think about the opportunities of interim regimes, and if I draw a bit on the discussion that my colleagues and I had in Discussion Group 1 yesterday, I hope they will tolerate my plagiarism. This second approach to an interim regime has a precedent not only in the European Economic Community's design of its own corporate charter, but also in the way the early arrangements in Intelsat in 1963-64 were negotiated. The key element here is the promise to renegotiate specific issues after a specified period of time had passed.

The setting for these arrangements in '63-'64 was in some ways similar to this situation we face today with LOS—there was very fundamental disagreement, although in that case among a much smaller number of countries, about how to proceed on decisions needed immediately in the face of a very rapidly developing technology.

The option that was chosen then was not merely to accept an interim regime. It was to construct an interim regime with some very critical future-oriented ingredients. Most important among these was an agreement that a number of the outstanding issues in dispute among the parties in 1964, as specifically stated, were to be renegotiated by 1969.

It should not be beyond the creative imagination of those who know oceans issues to begin sorting out the segments of the problem that may be susceptible to phased negotiations over time. This might mean identifying the critical technological or economic thresholds over the next ten years for the purpose of explicitly taking those thresholds into account in an interim agreement now that would contain an obligation to renegotiate specific issues later on. Already, some of these thresholds are being identified in ways that suggest the possibility of phased negotiations. For example, we know from recent United Nations Secretariat reports that while the operational capability for nodule mining may mature as early as 1974 or thereabouts, the economic impact on markets for the economically important primary metals may not be felt until the '80s.

My question is: Can we draw upon the Intelsat analogy to help us design an interim regime that services the common interest far more effectively and equitably than the essentially unilateralist and totally inadequate approach of S-2801? A satisfactory interim regime would have to incorporate finely balanced mutual compromises and risks over the next five or ten years. Most important, it would have to create a complex web of mutual incentives and stakes in the continuing integrity of the arrangement and in the progression through the various transitional stages.

Perhaps, Judy, on the basis of your own knowledge of Intelsat, you could see how that experience could be useful in thinking about implementing the "transitional" strategy that Mr. Beesley called for this morning.

*KILDOW:* Your ideas did occur to me. The reason I did not bring them up was because I have very mixed feelings about them.

It was a very complex situation and the United States was in a far stronger position, I think, with regard to communications satellites than it is with regard to ocean technologies. And also with regard to its international position at that time.

But in addition to that, what happened was that nations joined and invested in an interim organization dominated by the United States, and felt that close to the end of the interim period they had really subsidized United States industries through their investments, and were very unhappy about it.

I played this out a little bit in my talk today, and I am wondering if that indeed would not end up happening in an interim regime here, and if that is not indeed what a lot of the other countries are afraid of. Somebody suggested yesterday in a discussion that the developing countries ought to just let the United States and whoever else wants to sink several millions of dollars into the technology to get it going, and then join the bandwagon, but I also disagree with that because the benefits that the United States derived by developing the technologies for the communications satellites were what counted, and that they were not shared was unfortunate.

So I really have very mixed feelings about it. The system was launched, and it was a success economically, and objectively; the object of COMSAT and Intelsat was to have a global system, and indeed they did have one by the end of the interim period. But the means to achieve it were at the cost of others, and I am not sure that there was a satisfactory situation.

*JOYE:* I have rather strong feelings about the question that was just raised. I don't think you can compare satellites to ocean mining. In ocean mining we are not talking about investments in millions of dollars, we are talking about investments in the hun-

dreds-of-million dollars class. If these investments are made they will be made because of a promised profit potential, and you cannot reopen negotiations after you promise an operation x percentage of profit. If there is to be an interim regime, there must also be stability for investments made prior to reaching final accord.

*KILDOW:* I am not sure I understand, Judy, but I think that maybe you did not realize there was a $200 million investment in the Intelsat consortium, which is not really an insignificant investment, although it is not as large as one might think.

That does not even account for the launch capabilities which the United States offered, which were billions of dollars into development, far more than I can imagine is going to be going into ocean development in the next few years.

I mean, there are differences between space and the oceans, but I think that the costs you are talking about are not relevant.

*MIKDASHI:* I think the lady questioning from the floor is worried also about fiscal and financial stability for operators who are concerned about getting a satisfactory return on their investment.

There are precedents of renegotiation of contracts; this is already built into U.S. legislation with respect to defense and space contracts. The renegotiation clause enables the U.S. Government to recuperate excess profits by mandatory action or with the contractor or subcontractor paying back voluntarily.

I personally would like to have this feature built in the seabed operation where the excess profits arising out of economic rent or out of a position of monopoly in exploiting a productive area should go to the authority of the international regime.

*DE SOTO:* It seems relevant to interject here that in regard to the rhythm of the discussion and work in the UN Seabed Committee, what we are trying to do in that Committee, a committee composed of the representatives of 91 states, is what was done in about a decade by a group of 15 independent gentlemen called the International Law Commission.

# ALLOCATION AND EXPLOITATION OF LIVING RESOURCES OF THE SEA

## Problems of Allocation as Applied to the Exploitation of the Living Resources of the Sea

*Hiroshi Kasahara, Food and Agriculture Organization of the United Nations, Rome*

### INTRODUCTION

**Wednesday morning, June 28**

What I am presenting today is an abbreviated version of an appendix to a paper written by Professor Burke of the University of Washington and myself concerning fishery management in the North Pacific. Copies of the entire paper, including the full text of the appendix, are being distributed for comment. The paper was written when I was a professor of the University of Washington and, of course, does not reflect FAO's views. My talk is not quite up to date since I have not had time to study the most recent action taken by ICNAF on the question of national quotas.

Colloquially, it is often said that allocation is the question of "who gets what," while conservation is that of "how much all should get." These colloquial expressions well represent the meaning of these aspects of resource management, both nationally and internationally. For management of living marine resources, perhaps the phrase "and how" should be added to "who gets what" because of the extremely diversified forms allocation has taken to date and might take in the future.

Most fishery people, including scientists, accept the fact that allocation in one form or another, in addition to conservation, plays an important role in international negotiations of fisheries and that many existing agreements deal intensively with this aspect of management. Yet, so far as I can discover only two fishery conventions are explicit about it. In addition to the Fraser River salmon convention providing for equal sharing, the Convention on the Conservation of the Living Resources of the Southeast Atlantic, which came into force in 1971, does include a provision concerning allocation. Article VIII (iii), states that the Commission may invite the contracting parties concerned to elaborate agreements on the allocation of a total catch quota. The term allocation does not appear in the preamble of any existing convention as a main objective. The reasons for this are understandable. There has never been an established set of principles for allocation as applied to the exploitation of living marine resources.

Ocean fishing is still mainly an activity to harvest wild stocks of animals. Most of the living resources in the sea consist of highly mobile animals which cannot be fenced or marked for ownership. In some parts of the world hundreds of species are utilized, each different from others in its life cycle, distribution, migration and responses to environmental changes as well as fishing. Most occur in wide areas and a great variety of useable species are found in the same body of water. A number of species are caught simultaneously by the same type of gear or the same species may be fished by several different methods. Fishing in one area often affects the abundance of fish in other areas; fishing for one species may affect the stocks of others.

Partially for these reasons, the great bulk of fishery resources is considered to be "common property" both nationally and internationally, and

open for simultaneous use by more than one individual or economic unit. In the domestic laws of a few nations, rights to use fishery resources are given to particular groups of fishermen or companies, or sometimes individuals, for the purpose of limiting entry to each fishery. But even there the resources are exploited as common property, without ownership, by those who are authorized to use them.

In most nations there still exist many fishermen who are catching fish with methods not so different from those used hundreds of years ago, while large fishing companies are dispatching their modern fleets to distant-water grounds. Internationally, problems are even more complex. Fishermen from nations at greatly different levels of development operate in the same fishing area, often using similar tchniques and equipment. The status of the fishing industry is no indication of the strength of the general economy of a nation. The relative importance of different species found in the same general area also varies greatly between nations.

## Allocation of Resource

Thus, the meaning of "allocation" is to be understood in light of the peculiarities of the living resources of the sea and the way they are exploited. First, what is to be allocated? Is it a resource itself? Is it the catch therefrom? Is it the access to a resource in terms of time or space? Some of these forms have an almost infinite number of variations.

If a resource itself is to be allocated, however, there are only two clear-cut types of arrangement (or three, if we consider the total lack of allocation as a form of allocation). First, an exclusive right to exploit a stock might be granted only to one party (in our case, one nation). Second, a common right might be shared by a limited number of parties, but more than one, with the condition that all restrictions be applied equally to the parties and that there be no further system of allocation among them. (Figures 1 and 2). Examples of the first category are fisheries based on stocks occurring only in waters of exclusive national jurisdiction over fisheries. We are not concerned with how these stocks are utilized under domestic institutions of the particular nation. Another outstanding example of this category is some of the resources qualified for "abstention" as provided in the North Pacific treaty. Except for some agreements providing *de facto* exclusion, there are no other cases of this kind for the exploitation of living resources in international waters.

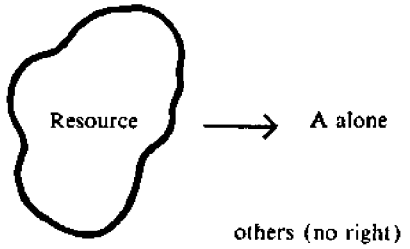


*Figure 1.*

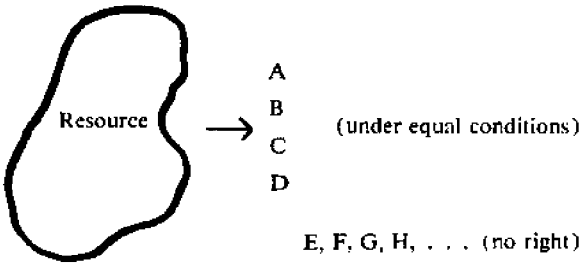


*Figure 2.*

It is difficult to find good examples of the second category in international fisheries, although they are not uncommon in domestic fisheries. Some of the stocks in the Pacific are used by the United States and Canada under equal conditions with Japan staying out under "abstention." Such a situation might also develop because of the inability of most nations, except a very few, to participate in the exploitation of a particular resource. An example is the exploitation of whales in the Antarctic by only two or three nations. Clear-cut cases of the international allocation of resources themselves are largely restricted to those of exclusive jurisdictional control.

Resources under the full control of one nation might, however, be made available in a great variety of ways not only nationally but also internationally. Rights of exploitation might be leased to a foreign nation or nations, or a foreign nation or nations might be allowed to conduct fishing under certain conditions established by the state which has jurisdictional control over the resource or resources concerned (Figure 3).

Matters become much less clear-cut when the areas of distribution (including seasonal migrations) of the stocks concerned are not entirely within the areas of exclusive national jurisdiction, which is the case with most fishery resources except when the waters claimed as those of national jurisdiction are extremely wide. Many nations contend that they are

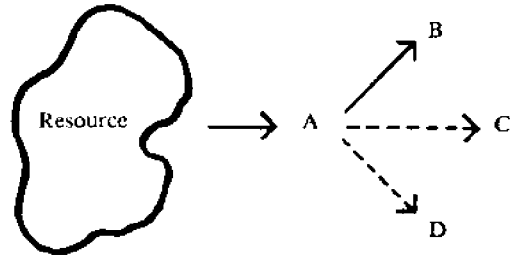


*Figure 3.*

entitled to some preferential treatment in the allocation of those resources which occur largely in their coastal waters, but not entirely within the limits of national jurisdiction. An infinite number of variations can be considered for meeting this demand. Some nations also desire to claim an exclusive right to the stocks of animals returning to their territories for breeding, particularly anadromous fishes and land-breeding marine mammals. But even in this very special category there is a variety of allocation systems employed (Figures 4, 5 and 6).

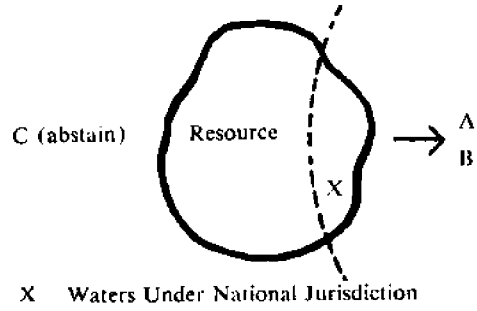


*Figure 4.* Salmon in the eastern Pacific.

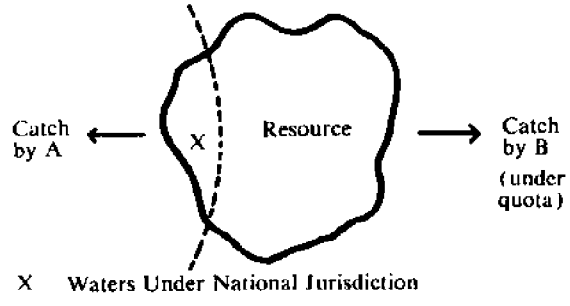


*Figure 5.* Salmon in the western Pacific.

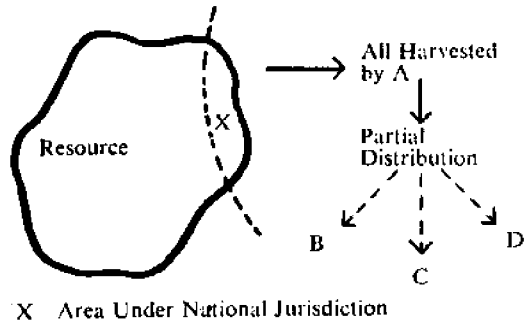


*Figure 6.* North Pacific fur seal.

In most cases, the claim to preferential allocation may be dealt with by allocating a certain part of the total catch, if it is limited, to the coastal state concerned or by limiting the access of foreign fishermen to the stock or stocks concerned by establishing closed areas and/or seasons (Figure 7). Additional measures include size limits, gear restrictions, or direct control on foreign fishing effort.

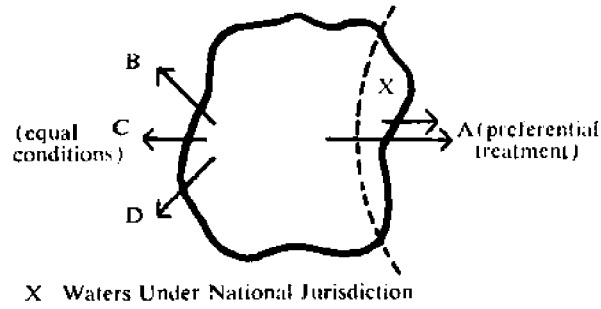


*Figure 7.*

Sometimes the coastal state allows foreign fishing in part of the area claimed by the state for resources that occur both within the area and on the high seas, in most cases under the conditions set forth by the coastal state or agreed upon by the parties concerned. Both for resources found entirely within the claimed zone and for those that occur on the high seas as well, the conditions for permitting foreign fishing within the zone vary greatly. Some coastal states claiming newly extended areas of national jurisdiction may wish to eliminate foreign fishing in the zones immediately, if possible, or within a certain period of time. Some allow foreign fishing contingent only upon payment therefor, and some upon payments plus other benefits such as financial aid for fishery development, use of local facilities, technical assistance, etc. (Figure 8). In practically all cases the

amount of fish to be caught and often fishing effort (in terms of the number and size of vessels used) are restricted for foreign fishing in the claimed zone. Variations are also found in this regard.

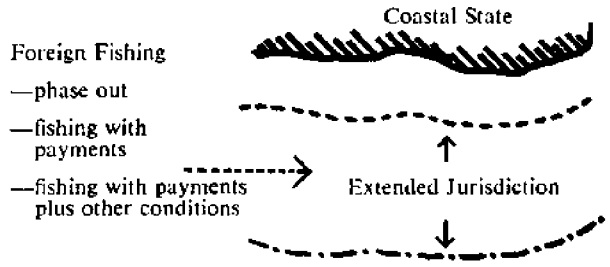


*Figure 8.*

In some cases, foreign fishing is allowed in a limited area within the claimed zone in return for restrictions on foreign fishing in a designated area outside the zone (Figure 9). Arrangements may also be made, among neighboring coastal states, to accommodate each other's fishing in the areas claimed for fishery jurisdiction or even as territorial seas (Figure 10).

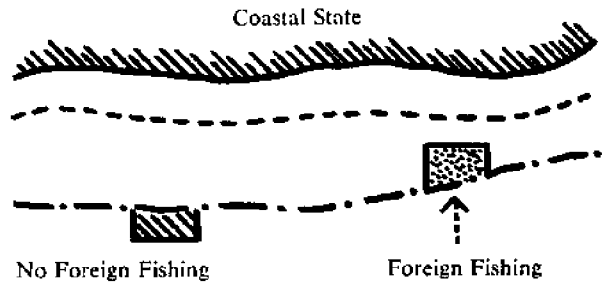


*Figure 9.*

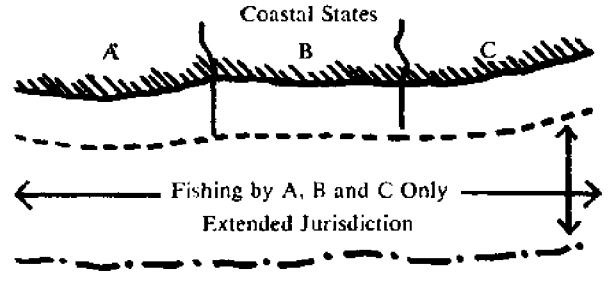


*Figure 10.*

## Allocation of Catch

The allocation of the catch from a resource is a substantially simpler concept than the allocation of a resource itself. But here again an almost infinite number of different forms of implementation can be considered. The allocation of the catch from a resource applies only where the total catch from the resource is limited usually for conservation purposes. It is possible to avoid the whole problem merely by not allocating the allowable total catch among nations, and this approach is still in practice in a substantial number of cases (Figure 11). Thus, fishing for a particular resource is closed when the total catch limit is reached, with some allowance made for catches incidental to fishing for other resources. More and more nations, particularly those whose fisheries are not competitive internationally, are dissatisfied with this sort of arrangement. It is a matter of time for a national quota system of one kind or another to be adopted in a situation where the total catch must be limited.

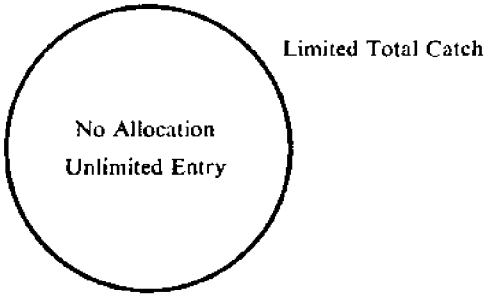


*Figure 11.*

Before discussing a general model of national quota systems, an account of some existing systems is useful. As mentioned above, free competition within the total catch limit is still one of the forms implemented at present. Another simple form of catch allocation is a fifty-fifty division, or division at a fixed ratio, between two countries using the resource in question exclusively. Examples are fishing for Fraser River salmon (Figure 12) and mothership crab fishing off West Kamchatka. These arrangements implicitly assume that there will be no new entrants.

The system adopted for salmon fishing in the western North Pacific is rather complicated. International regulations, including catch quotas, apply to high seas salmon fishing only; and as Japan is the only nation conducting high seas fishing for salmon

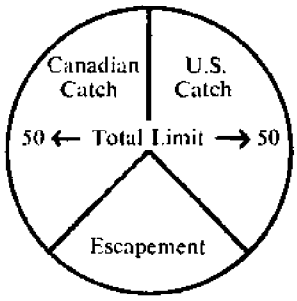


*Figure 12.* Fraser River salmon (sockeye and pink).

in the treaty area, the quotas apply only to Japanese fisheries. The salmon are taken on their way to spawning streams, most of them located along the coast of the Soviet Union; then the Soviet fisheries, mostly by trap, take their share from whatever amount is left, minus required escapements (Figure 13).

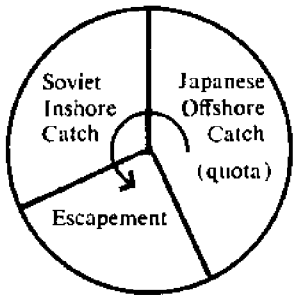


*Figure 13.* Salmon bound for USSR streams.

The interests of coastal states are sometimes taken into account even for the allocation of the catch from what is generally considered an oceanic stock with a wide range of migration, such as tuna. Although it is not explicitly stated in any agreement, the system of allocation of the yellowfin tuna catch in the eastern tropical Pacific does take into consideration the interests of coastal states by making special allowance for small vessel fishing by each nation (Figure 14).

Setting aside the question of the special interest of coastal states, let us examine a sample form of catch allocation that might be considered as a basis for developing specific systems to be adopted in specific situations. It is not too difficult to consider, on a theoretical basis, such a general model although its application might be complex. Let us assume that a catch limit is set for conservation purposes, and a

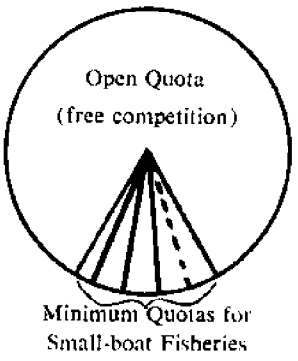


*Figure 14.* Yellowfin tuna in the eastern Pacific.

certain number of nations, say four, are presently participating in the exploitation of the resource for which the limit is set. The resource might consist of a single stock, or a single species or any number of stocks or species, depending on the nature of fisheries concerned and the features of the international body regulating the resource. At the lowest level of sophistication, the general system might be as follows.

The total allowable catch is divided into two portions: a portion to be subdivided into fixed national quotas and a portion constituting an open quota. The first question to face under this system is how big the open quota should be, relative to the combined national quotas. A variety of biological and political factors have to be considered in each situation, and widely applicable rules are not available. In most cases, the open quota should not be too small. If the total of the *actual* national catches is already near the total allowable catch, or has exceeded it, each nation concerned must be prepared to accept a national quota which is smaller than the actual amount she is already taking. A substantial amount should still be set aside as an open quota, largely for two reasons. First, it is difficult to handle problems of new entry without such a quota. Second, the allocation of national quotas based on actual catch records would, in general, be easier to achieve when a substantial amount is set aside for fishing under free competition. The allowable total catch as well as the proportions of the national quotas will be modified through periodical reviews taking into account new developments (Figure 15). Although this arrangement appears all right at first glance, there will be many problems arising in its implementation.

Since domestic institutions differ from nation to nation, the way in which the national quotas are filled should probably be left to the nations concerned. A nation may wish to take the amount allocated as quickly as possible and move the fleet to

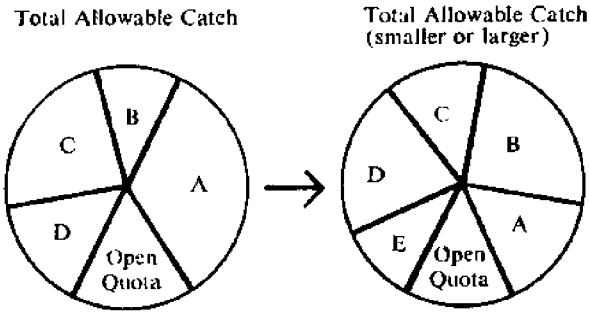


*Figure 15.* A general model of catch allocation.

some other area for some other resource. A nation may, on the other hand, limit the number and type of her vessels so that they will be fishing over a longer period of time, possibly year around. Other nations may not wish to impose such restrictions on their fisheries and simply close the fishing season when the respective national quotas are filled. Such differences among nations in the pattern of fishing make the question of the open quota rather complicated. Different methods can be utilized to resolve this difficulty. A separate fishing area may be established so that anything taken from the area will be considered to be from the open quota (Figure 16). This will force all national fleets to rush to this area at the beginning of the season. Or, a separate season may be established for the open quota so that anything taken during this season will be considered to be from the open quota (Figure 17). Either system, or a combination of both, might be considered to be discriminating against some or other nations, because certain fishing strategies are better suited than others for taking greater shares of the open quota. Either system will be discriminating against a new entrant if the latter has to observe the same regulations.

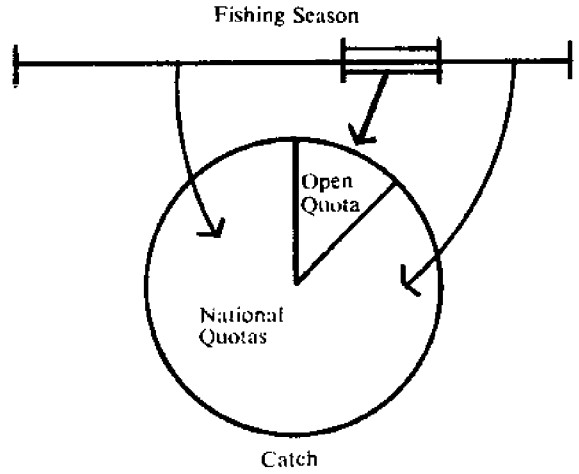


*Figure 17.*

Another difficult question concerns unfilled national quotas. It will generally be considered undesirable to leave substantial portions of national quotas unfilled. There are several possible ways to handle this problem. Any portions of national quotas that have not been filled by a certain deadline may automatically be considered part of the open quota, thus making the latter that much larger (Figure 18). If the open quota is to be taken during a fixed season, the amount transferred from unfilled national quotas might be taken during the season or in a separate open quota season. The system adopted for the yellowfin tuna in the eastern tropical Pacific may be considered one form of catch allocation with a very large open quota combined with national quotas for small-vessel fishing, and for 1971, a special additional quota for one nation. In this case, estimated leftovers from national quotas are taken into account in setting the closing date of the regular open season. If unfilled portions of national quotas are expected to be insignificant, the simplest solution is not to do anything about them.

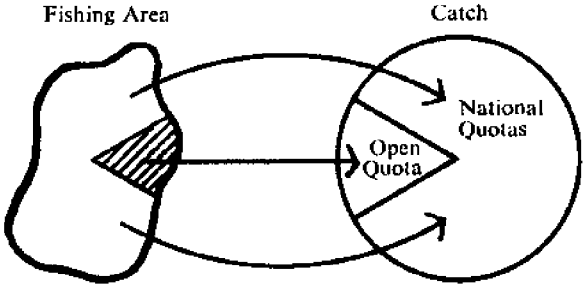


*Figure 16.*

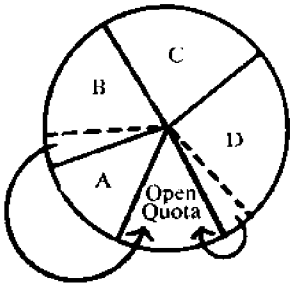


*Figure 18.*

Even more difficult are problems arising from the application of national quota systems to multi-species fisheries, which includes most world fisheries. In extreme cases the catch of one fishery may consist of 40 to 50 commercial species of different values (for example, the China Seas). A number of alternatives can be considered for catch allocation even in a relatively simple multi-species situation, but none of them would be satisfactory to all the parties concerned. Added to these difficulties are problems of different national fleets having emphasis on different species even in one general area. Any number of examples could be cited to illustrate this point.

Although it would be impractical to provide for it in a fishery convention, the trading of quotas is very likely to take place in such a general system as described above. Even if the national quotas are determined on the basis of the actual catches over a period of time, the trading of quotas may take place through direct negotiations between the nations concerned. Trading may also take a variety of forms, and in most cases monetary or other forms of compensation are likely to be used.

Eventually nations might consider making the transfer of quotas official. (The case of Antarctic whaling is very close to it.) There would be many ways of doing this if all parties were agreeable to the basic idea. For example, the national quota part of the total allowable catch might be divided into a number of shares. In determining the national quotas on the basis of historical records they may be expressed in terms of the number of shares, such as 2.5, 5.5, 7.0, etc. Then for a certain period of time, say five years, the parties would be free to transfer shares among themselves as well as to new entrants. After the five year period, the quotas would be determined again on the basis of the actual catches during the five years. If a nation had not taken, on the average, the amount of fish equivalent to the number of shares allocated to her, her shares would be reduced accordingly in the process of reallocation. There would be no restrictions on the forms of compensation used for transactions. Shares might be simply sold at a prevailing price; various trade-offs might be used; or shares might simply be given away. The above is only one of the many systems one can think of; but any discussion beyond this will be only academic.

### Allocation of Access to a Resource

I will skip much of the discussions on the allocation of physical access to a resource. This can be done by dividing international fishing grounds (Figure 19) or allocating fishing seasons. There can be many forms of indirectly allocating access to a resource. For example, restrictions on the size of vessels to be used would indirectly limit the access to a resource, the distribution of which goes beyond the range of operation of such vessels.

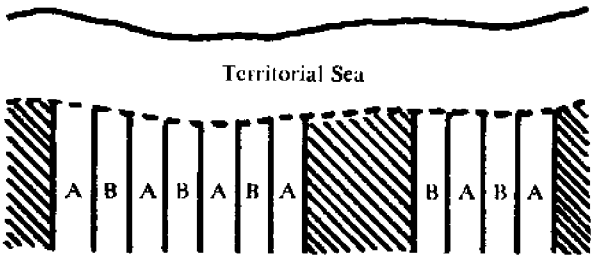


*Figure 19.*

### Allocation of Products or Proceeds

Finally, the distribution of products, or proceeds, from a resource, among nations who undertake to refrain from the exploitation of the resource is another important form of allocation. In practice, only the North Pacific fur seal agreement falls in this category (Figure 6), but potentially this form of allocation might have a rather large area of application. A combination of factors has made it possible for such a system to be adopted in the case of fur seals. The need for protecting and restoring fur seal populations in the North Pacific and the damaging effects of pelagic sealing became obvious as early as the late nineteenth century; the harvesting of seals on their breeding islands has been carried out under full control by the respective governments; new entry has not been a serious problem so far.

## DISCUSSION

The possible forms of allocation mentioned in this paper are far from exhaustive. A much greater variety can be found in the domestic regulatory system of, for example, Japan. In summary, there is no established set of principles or rules, or even a widely accepted formula concerning allocation as applied to the international management of living resources of the sea. On the other hand, it is becoming increasingly difficult to develop an acceptable management regime without taking into account the question of allocation—the question of who gets what and how.

For the time being, specific systems of allocation have to be developed to meet problems arising from specific situations. Some general suggestions, however, might be made in this regard.

It would help develop acceptable systems of allocation if new international conventions and agreements could be more explicit about the need for allocation in addition to, or in combination with, that for conservation. In most cases, the formula to be adopted should be flexible enough to accommodate new developments. Any form of allocation based entirely on the *status quo* may become obsolete within a rather short period of time, and sometimes make the development of a better system difficult. The form of allocation, for example, which does not take into account the possibility of new entry is likely to become out-of-date sooner or later; new entry would necessitate negotiations outside the framework of the existing agreement or the conclusion of a new agreement. Most forms of allocation will have to take into account the conflicting interests of distant-water fishing nations and coastal fishing nations.

## Discussion

**Wednesday morning, June 28**

*PINTO:* My name is Pinto, I am from Sri Lanka, and I would like to ask Dr. Kasahara three questions. I agree with him when he points out that fisheries arrangements must be flexible. We ourselves think that they must have a great deal of flexibility to take into account the fact that technology is changing rapidly.

My first question relates to arrangements for varying quotas as fishing capability increases or decreases. Are there any arrangements in treaty provisions, for example, covering the case where a country wishes to decrease its investment or activity in fishing? Is there an automatic arrangement for transfer or redistribution of that country's quota, for the compulsory re-allocation of that country's quota on a specified basis? For example, if the party which wishes to decrease its activities has an original allocation of, say 20, having decreased its activity, it can't claim the 20 nor continue fishing for that 20. Its allocation, or part of it, should be compulsorily redistributed to the others, I would have thought.

My second question relates to the case of a new entrant which you referred to. If there is a new entrant into the area, is there a means of compelling him to join the club, or is it left to his good sense that he should cooperate with the others and come into the catch allocation and the conservation measures that are already existing in the area? Assuming participation by the new entrant, how is the new entrant to be allocated a portion of the catch? Who loses from among the others? In what proportion do they lose? What rules are specified for trimming existing quotas to take account of the entry of a new participant?

My third and last question is whether FAO has given any thought to the problem of landlocked countries as a special case. Of course a landlocked country can have a fishing fleet; there is nothing unusual in that. But have they given any thought to landlocked countries as a special case, as requiring special treatment, in comparison with coastal states, in the matter of catch allocation and other benefits under multilateral fishing arrangements?

*KASAHARA:* The model I described here is a very simple, unsophisticated general model, and as I indicated, difficulties would arise in implementation of any system to be adopted.

The first question was that of what to do with the situation in which one nation decided on decreasing its fishing activity. Depending on the situation, you can handle it within the particular season (or year) or through the process of re-allocation.

In other words, if the system is highly sophisticated it might be possible to allocate immediately the unused portion of the particular nation's quota among others or put it in the open quota. If this is not possible, the actual catch records will be taken into account in any case in the periodical review for re-allocation.

The second question was that of new entrants. In addition to the member countries of a convention, there might be non-member nations fishing in the same area for the same stock. All you can do in such a case is to request these non-member nations to become members of the convention, thus bound by its regulations, or if this is not possible, to ask them to observe voluntarily most of the regulations actually in effect under the convention, and there are examples for each of these cases.

It is important, however, to leave some part of the total catch limit for new entrants. Otherwise, you cannot deal with the question of new entrants.

On the third question; as I said, I am not representing FAO on this occasion, but I do not think anybody has given much thought to the interests of landlocked countries in sea fisheries. Theoretically, of course, if a landlocked state establishes access to the coast under an agreement with a coastal state, it could build up a fleet and go on fishing. I do not know of any studies made on this subject.

*ROBINSON:* Robinson, from FAO. I would like to comment on this matter of the national quota and the open quota.

I think I understood Dr. Kasahara to say that the open quota should be as large as possible, but if you have a large open quota it may encourage potential new entrants independently to construct new vessels which will in total exert a fishing effort in excess of that required to take the open quota. It may, in short, encourage over-capitalization, which in fact is the most serious economic effect of allowing free entry for the exploitation of a common property resource.

It seems to me that, on the contrary, while you must of course make provision for new entrants, you should make the quota reserved for them as small as possible. This would make practical sense, I think, because the new entrant may, in the first instance, not be able to take a large catch or it may be unreasonable that it should expect to do so.

But I think a large open quota could seriously aggravate problems of over-capitalization. It is interesting that in this connection the scheme for management of yellowfin tuna in the eastern Pacific was mentioned, since this is a good example of the way in which over-capitalization results, or can result, if you set up a situation in which fishermen are encouraged to grab what they can while it is still available.

*KASAHARA:* I did not say the open quota part should be "as large as possible"; I said it should be substantial. It depends on the situation.

If you expect the participation of new entrants in a substantial way, then you have to be prepared to accommodate their interests by making the open quota part substantial.

Also, if the relative proportions of the national catches change very greatly year after year, then you had better have a substantial portion of the catch limit as an open quota; otherwise you might have difficulty in re-allocating the national quotas.

So I don't think it should be as large as possible, but in most cases it should be fairly substantial. Otherwise you get stuck with the same question of how to deal with new entrants, as well as with changes in the actual catches of different nations.

*SOUTHEY:* Clive Southey, from Guelph, Canada. I would like to ask Dr. Kasahara, what is gained by all these quota systems? It strikes me that we seem to be dividing up a pie, and the benefits to anybody somewhat escape me, perhaps other than a conservation requirement, which could be achieved by a general quota, with free access.

Put differently, I would like to suggest that a quota without some requirement that the countries who receive a quota restrict their efforts so as to get some rents does not achieve anything.

*KASAHARA:* I think the reason for most arrangements now tending to adopt national quota systems in one form or another is to accommodate conflicting interests of different nations. They have different interests in species to be utilized, in the types of fisheries to be developed, as well as in many other things in connection with such fisheries.

There is no single economic criterion to be used to justify one system or another. What I am saying is that most nations are inclined to move toward national quota systems in one form or another.

*HERRINGTON:* I think the speaker has done a beautiful job in laying out some of the possibilities in this field of national allocation of quotas, and he points out the need of more explicit formulas.

At present, where we do have national quotas, they have generally been arrived at, with few exceptions, only as a result of negotiations, not on the basis of formulas. And they have usually been arrived at, again with few exceptions, after the resources have been badly depleted, so that there is not much left for anybody.

It seems to me that what is happening now has been promoted by three problems. One is, in our international commissions we have, in almost all cases, an individual veto power, either directly or in-

directly. That is, a country can vote against a quota, and if over-ridden by a majority of two-thirds vote, the Commission makes a recommendation to the countries, and any country can refuse to accept it. So either directly or indirectly each country has the veto power.

The second problem is the development in the last decade of massive mobile fishing powers of such capacity that they can move in on a stock of fish and in a very short time can reduce it very greatly.

The third is a problem of enforcement, and we have only a few international conventions that provide for international enforcement.

So even though there is agreement on certain things, in many cases the agreement provisions are not too well enforced.

Now these three things lead to a major problem, and that is time. They all slow down the action of our international commissions, so that by the time they reach agreement on national quotas, already the resources have been badly depleted. There are various examples of this; the Antarctic whaling is one. It has now happened in the Northwest Atlantic; and around the world where the commissions operate, the delay in getting agreement on effective measures is such that the resources are badly depleted.

The question of national quotas, and agreement on formulas, will not solve the problem unless we also can solve the problem of veto power, massive mobile fishing power, and enforcement.

*KASAHARA:* I have restricted my discussion today to the question of allocation alone.

These three points made by Professor Herrington are very valid, but I think new developments are happening in all these three areas.

I think the real question of veto is the matter of how much authority each nation is willing to delegate to an international body. So if the United States, for example, can delegate full power to an international agency, and the other parties agree to do the same, the problem can be eliminated. But it all depends on the wishes of sovereign states, and there is nothing you can do about it unless they realize that this would be to their advantage.

The second question, that of the big mobile, distant-water fleets moving from one area to another and fishing one resource after another is a real problem, and this has caused more international conflict than any other single factor.

I have written a paper discussing this in detail, but it is too much to include the substance of it in our discussion today. I hope Mr. Herrington will receive our paper on the North Pacific management, in which this is treated extensively; and my paper concerning Japanese fisheries just published in the Fishery Bulletin of NOAA also treats this problem.

The third question, enforcement; I think there have been substantial improvements in this area. If you look at most recent agreements, they provide at least some means of mutual inspection; although the right to try an alleged violator still remains in the hands of the country to which the violator belongs, mutual inspection is provided in many of the recent agreements.

I might add that, if you study some of the new conventions, particularly the Southeast Atlantic fishery convention, the question of allocation is squarely dealt with, not to the extent of spelling out principles for allocation, but by encouraging countries to develop systems of allocation on limited catches.

All told, I don't think we can say that the whole thing looks very bad. There have been substantial improvements, and there was a breakthrough even in ICNAF, which had been dragging on the question of national quotas for many years.

*NANDAN:* My name is Satya Nandan from the Permanent Mission of Fiji to the United Nations.

There are two questions which I would like to ask Dr. Kasahara. First, you mentioned the quota system. I would like to know if the FAO has given any thought to automatic decrease in the existing quota of the distant-water fishing nations when there are new entrants.

The second question, which is somewhat linked to this, is that the quota system, based on past catch records, may prove to be disadvantageous to the developing countries, whose fishing industries are not yet quite developed, and quotas based on catch records might prove to be very restrictive in the development of their industries.

I wonder if you would like to comment on this?

*KASAHARA:* On the first question, I must stress that I am not representing FAO's views; this paper was written before I joined FAO.

When a new entrant comes in, it raises the question of from what part his catch should be taken. This is one of the reasons why I said the open part should be substantial. In other words, a new entrant can get into the open part and take a substantial portion of it. New entrants will be under some handicaps, but if this particular new entrant is a strong enough fishing nation, it can take a substantial portion of the open quota in competition with the others and thus establish vested interests in terms of catch records, and in the process of re-allocation a

national quota will be allocated to the nation based on such records.

Now, after re-allocation, there will still be an open quota under free competition, so although its first national quota may be small, the same nation could still compete with the others in the sharing of the new open quota, and thus gradually increase its national quota.

This is, I think, one of the possible processes for accommodating the interests of new entrants. This also answers the second question on catch records.

You have to take into consideration, to a large extent, vested interests of different nations when you divide up a pie. You cannot do it without some basis. In the case of ICNAF, they used past records over ten years, over three years, plus special interests of coastal states and some allowance for non-members and new entries. But the major part was divided on the basis of past records. I do not see how you can avoid it.

*SYATAUW:* My name is Syatauw, from Indonesia.

I would like to venture another comment along the same lines as just followed by the gentleman from Fiji. In terms of the various issues that have been raised here, such as the emergence of massive, mobile fishing fleets which have already resulted in depletion of sea resources and thus led to increasing conflicts of interests, it seems a pity that the models that are used, e.g. by the FAO, are still so unsophisticated. In particular it is rather surprising to learn that these models take as a starting point—as was mentioned earlier, I thought—mainly the present competitive positions and vested interests of countries concerned. Surely, in view of the theme of this conference, which is the needs and interests of developing countries, one would like to see more sophisticated models being built which take into account the needs—and more specifically the changing needs—of the developing countries.

It is obvious that, in general, fisheries represent a far more important, yet far more vulnerable, sector of the economy of the developing countries than of the developed countries. I would therefore hope that in particular the FAO with all its expertise will be able to experiment with models which are far more sophisticated than those which we have just been shown.

*KASAHARA:* I fully agree with you. This is an attempt to start something in terms of classifying the forms of allocation that are considered today.

Depending on particular regional situations, I am sure in many cases, in addition to these considerations, the special interests of developing states, either coastal or distant-water, would be taken into account in a more sophisticated system to be adopted in a specific situation.

There again, the situation in fisheries is not like that in deep-water hard mineral exploitation. Some of the developing nations are strong fishing nations. Some of the Eastern European nations, some of the West African nations, South Korea, Formosa—these are considered developing countries, but they have rather strong fisheries. So problems are not so simple.

*CHRISTY:* Francis Christy, Resources for the Future.

I would like to ask Hiroshi if he has given some consideration to the cost associated with the adoption of the national quota scheme. I assume from the discussion that these national quota schemes would have to be negotiated at fairly frequent intervals; and it would seem to me that if there are a large number of national quota schemes for a large number of stocks, that it might well employ most of the diplomats of the foreign ministries full time year-round in order to arrive at the satisfactory agreements.

*KASAHARA:* This is another problem. It is pointed out in a joint writing between Professor Burke and myself that most of the important research workers and fisheries administrators of important fishing nations are so fully occupied with international negotiations that they have no time to spare for more productive work such as, on the research side to discover new resources, or on the administrative side to develop more sensible international agreements.

This is a major problem today. I have no solution to suggest, but by developing more generally acceptable models of allocation and by better accommodation of conflicting interests, I think we can reduce the amount of negotiation.

I think in this respect an inclusive system is better than a number of exclusive systems for the same region and the same resources. The North Pacific is a good example of the latter, where negotiations go on all the time as they have a network of a large number of multilateral and bilateral agreements, and the negotiators from Japan and the U.S., Canada and the Soviet Union, are fully occupied all the time dealing with problems in connection with one or other fishery agreement.

What you said is very important and this has to be taken into account for the development of new regimes in fisheries.

*HAYASHI:* To carry on the same question, I wonder whether in this question of deciding on allocation almost every year in many international commissions, don't you think there is any possibility of FAO providing the purely scientific, objective expertise to these international commissions to assist them in deciding upon equitable allocation?

*KASAHARA:* We have to distinguish two things clearly. First, the question of passing judgment on matters of a scientific nature such as what the status of exploitation is, what the catch limits should be, and so on; and second, the question of settling problems of a political nature, such as fixing the quotas within the catch limits recommended by scientists. Of course, there are lots of interactions between the two. FAO could provide, and has actually provided, useful services with respect to the first question, but to what extent it could do so regarding the second question is still to be seen.

## The Northwest Atlantic Fisheries

*William L. Sullivan, Jr., Assistant Coordinator of Ocean Affairs for Marine Science Affairs, U.S. Department of State*

**Wednesday morning, June 28**

A few of you might recall that two years ago I spoke on the North Atlantic fisheries situation, and I spoke with a great degree of pessimism. In fact, my paper was entitled: "A Warning"—a warning that the international cooperative management of fisheries in the North Atlantic was failing rapidly. I am happy to say I can be much more optimistic this morning as a result of the ICNAF meeting which concluded earlier this month.

For those of you who are not familiar with the Northwest Atlantic fisheries, I will briefly review the situation, before speaking about what happened at the ICNAF meeting.

The Northwest Atlantic Fisheries Convention was written in 1949. I suppose it could be termed a very successful Convention, and the Commission set up under it as well, until well into the '60's. This was mainly because there were not many problems, and it did not have anything to do in terms of regulations. There were regulations, but they were the kind of regulations that did not pose problems; they were not instituted because there were major declines in the fisheries. All of the early regulations dealt with minimum mesh sizes for various species.

The situation changed very rapidly during the 1960's, as large distant-water fleets moved into the area. The fishing effort that was deployed went up drastically. The scientists who had done a great deal of work in ICNAF, very good work, warned the governments that the kind of regulatory measures they had undertaken up to then were totally, hopelessly inadequate and that other measures would have to be taken. In particular, there would have to be a limit on this massive influx of fishing effort or, alternatively, limits on the catch.

The Commission, quite soon after this warning, determined that it was not practical to regulate in terms of limiting effort, so it would have to regulate in terms of limiting catch. The Commission from the beginning had the authority to propose overall catch quotas for various species, but did not have the authority to allocate quotas nationally. It decided that overall quotas were not feasible, at least for the situation in the North Atlantic, for reasons mentioned already by Dr. Kasahara this morning. Overall quotas would be fine for some countries, but not for others, because some countries like to have year-round employment while others would be happy if they caught the entire quota in a few weeks. The Commission's mandate needed to be changed to allow it to advance national quota regulations.

Thus, the situation, with the Commission not having the legal authority to do what it decided had to be done, continued to deteriorate. It got so bad that

just recently, less than two months ago, the U.S. Industry Advisory Committee to ICNAF made a formal recommendation to the U.S. Government that the United States withdraw from this organization because of its total failure to do anything meaningful to protect the fisheries. And the United States Government had that recommendation seriously under consideration when the ICNAF meeting was held.

I think it is safe to say that there was a fairly good chance that the United States might have withdrawn from ICNAF if the meeting had not been successful in coping with the problems that had grown up to major proportions.

I think it is also safe to say if the United States had withdrawn from ICNAF, that ICNAF would have collapsed, and with it the whole system of international cooperative management of at least coastal resources would have collapsed.

But fortunately, the governments started to amend the Convention, back in the mid-60's when the scientists gave their warning. The amendment to the Convention finally took effect last December, and the Commission was able to address these problems in terms of national quota allocations, which it had long ago decided was the only way it could cope with the problems for the most part.

The question then was whether the countries could reach agreement on national quotas under its new authority. The ICNAF meeting turned out 23 regulatory proposals in ten days; 18 of these regulatory proposals were quota regulations, three of them were overall quotas, where the Commission felt it was not necessary to divide them among the nations because of the peculiarities of the particular fisheries, but 15 of the 23 regulatory proposals involved national allocations of various stocks.

Three of those 15 involved allocations to all 15 members of the Commission, as well as taking into account the fact that there are non-members which participate in the fisheries. At the other end of the spectrum, two of those national allocation proposals made a specific allocation to only one nation.

As Professor Kasahara mentioned, the basis of this national allocation was the 40-40/10-10 formula. Forty percent was allocated on the basis of long-term history. Those with well-established fisheries liked the broadest base possible. Others without long-established fisheries like a relatively narrow base, and the other 40 percent was allocated on that basis, on the average catch for the last three years. Ten percent generally was allocated as a coastal state preference; the other ten percent generally took into account a number of factors, including developing fisheries.

Now, there are no "developing countries," as we usually use the term, in ICNAF, but two countries in ICNAF said they were in a peculiar category of country—they were "developing fisheries countries," and part of the ten percent took that factor into account. The ten percent also took into account non-members, new entrants—that is, members sitting at the table who did not get an allocation on the basis of either 40 percent based on history, who said they wanted to participate in the fishery. They got something out of that ten percent.

In telling the ICNAF members, when they assembled in Washington, about the recommendation from the U.S. Industry on withdrawal from ICNAF, we said that we felt that ICNAF needed a "well-nigh revolutionary change" if it was going to continue as a viable organization. I think the adoption of these quotas demonstrates that ICNAF has changed itself radically and that it can successfully cope with these kinds of problems in the future. Further, the ICNAF action has set the stage for dealing with many of the problems that face countries in other parts of the world.

While we might not use the same formula that ICNAF used in other parts of the world, because that was developed in the context of the peculiarities of the fisheries in the Northwest Atlantic, and the interests of the countries who fish there, the general basis of the ICNAF agreement on national allocation can serve countries in other parts of the world well in coping with similar problems.

# Alternative Legal and Economic Arrangements for the Fishery of West Africa

*E. O. Bayagbona, Director, Federal Department of Fisheries, Lagos, Nigeria*



## GEOGRAPHY

As used in this paper, West Africa means the Atlantic coastal portions of Africa lying between Cape Blanc (20°N) and Cape Frio (15°S). In this region the hydrological feature of major importance for fish resources is the existence of three zones of seasonal upwelling, the northern and southern zones being the richest. The zones extend from (a) Cape Blanc (20°N) to Cape Verga (10°N), (b) Cape Palmas (8°W) to 3°E, and (c) Cape Lopez (Equator) to Cape Frio (15°S). Between these upwellings the productivity is less because the coastal surface waters are steady.

The continental shelf, above which most of the fishery resources (except tuna) are concentrated, is narrow all along the coast, with a width of about 30 nautical miles. There are, however, areas where the shelf is wider, e.g., from Cape Verde (Senegal) to Sherbro Island (Sierra Leone) it is more than 100 nautical miles wide.

## FISHERY RESOURCES

*Demersal fish* stocks are richest on the inshore grounds (0-35 meters depth) and, to a smaller extent, near the continental shelf (70-120 meters depth). The inshore stocks are made up of a large number of species such as croakers (sciaenidae), groupers (serranidae), threadfin (polynemidae), catfish (ariidae), breams (sparidae), skates and sharks, etc. Under the present conditions of exploitation the maximum yield of these grounds has been estimated independently and using different methods: at about 23 kg./ha/year. This yield should be higher in more productive areas such as the Congo River mouth.

Further offshore, the biomass of commercially important fish decreases at first and then increases again at depths of 70-120 meters, where the fish community consists of sparids, black croakers and paracubriceps. Pelagic species such as chub mackerel, horse mackerel and scads often occur near the bottom at this depth.

Rich pink *shrimp* grounds are found in the vicinity of river mouths and lagoon entrances, and are exploited in Nigeria, Senegal and Ivory Coast.

*Pelagic fish* in this area include inshore species such as bonga and sardinella and offshore species such as horse mackerel and scads, while round sardinella and chub mackerel are found in both inshore surface waters and offshore at different depths. The major resources are related to the upwelling areas among which the northern zone (Mauritania to Guinea) and to a lesser extent the southern zone (Gabon to Angola) are the richest, and have particularly rich concentrations of round sardinella.

*Flat sardinella* found in waters of lower salinity are also abundant in regions of seasonal upwelling within the 30m. depth zone. They are plentiful off Senegal, Guinea, Gabon, Congo and North Angola.

*Bonga* is not very plentiful and is found in Sierra Leone, Liberia, Nigeria and Cameroon, migrating between the river mouths to offshore waters in response to seasonal floods.

*Yellowfin, bigeye tunas* and *skipjack* are abundant in surface waters outside the continental shelf in the three areas of periodic upwelling—Mauritania to Sierra Leone, Ivory Coast to Togo and Gabon to Angola—and also around the Canaries and Islands of the Gulf of Guinea.

### Fish Movements

Thus, virtually all the fish resources except tuna lie within the continental shelf. There is considerable inshore-offshore movement of the fish species within the continental shelf in the case of all species except tuna, and outside the continental shelf in the case of tuna. There is a lot of movement parallel to the coastline, and therefore from off one state to off another of all species.

### Non-African Long-Range Fishing Vessels

Most of the West African countries have continental shelves about 30 miles wide and the major part of the fisheries resources off their coasts lie within their territorial sea. However, areas from Sierra Leone northward and from Gabon southward have wide territorial seas with sufficient fish resources outside the limits of territorial sea claims in which long-range fishing vessels from other countries operate profitably. These are mostly non-African-owned vessels in the 40-80 meters (LOA) range, which in

1969/70 caught 1,910,000 tons of fish, while the African-owned vessels in the area (West Africa) caught a total of 820,000 tons of fish from the sea area. There is, therefore, still the fear that the non-African long-range fishermen may overfish the areas before the coastal African countries are technically and economically ready to join in the fisheries.

Already there are indications that most of the marine fish stocks in Western Africa are being fished at maximum sustainable yields and that some are in fact already being overfished. Furthermore, apart from the problem of securing capital to get into the fishery, most of the coastal African countries do not have the basic infrastructure of shore-based facilities and trained personnel to participate in large-scale marine fishing. Thus the fear that the developed countries with long-range fishing vessels may overfish and destroy the resources before the coastal countries are ready to join in the exploitation is very real.

### Fish Demands and Resource Distribution

Another important consideration in Western Africa is that areas of abundant fish resources (high productivity and wide continental shelf) are off countries of relatively low population, while the waters off countries with high populations have relatively poor fish resources (low productivity and narrow continental shelves). To illustrate this point, of the three regions classified in the first paragraph as rich, the northern and southern regions may together be classified as "rich," the middle zone as "medium" (Cape Palmas to 3°E) and areas not included in these three zones as "poor." The table below shows the constituent countries of these areas, their populations as at 1970, and their fish demands according to "FAO Commodity Projections—provisional data."

| *Fish Resources* | *Countries* | *Population (millions) (1970)* | *Fish Demand ('000 m. tons) (1970)* |
|---|---|---|---|
| "Rich" | Senegal | 3.84 | 108 |
| | Gambia | 0.36 | 9 |
| | Guinea | 3.99 | 15 |
| | Gabon | 0.49 | 15 |
| | Congo | 0.91 | 32 |
| | Angola | 5.50 | 65 |
| "Medium" | Ivory Coast | 4.92 | 88 |
| | Ghana | 8.97 | 164 |
| | Togo | 1.87 | 21 |
| "Poor" | Sierra Leone | 2.55 | 41 |
| | Liberia | 1.17 | 14 |
| | Dahomey | 2.71 | 32 |
| | Nigeria | 65.00 | 640 |
| | Cameroon | 5.80 | 79 |

In response to increases in population and to increases in private consumption expenditure, the fish demand in countries like Nigeria, Ghana, Cameroon and Ivory Coast, with relatively high economic growth rates and large populations, will increasingly further outstrip the demands of the less populous countries; and since they cannot meet their demands from fish in their territorial waters and seas adjacent to their coastal boundaries, they will increasingly feel the need to fish in seas off other countries, particularly in the seas off countries in the "rich" zone.

## ALTERNATIVE LEGAL AND ECONOMIC ARRANGEMENTS

Because of (a) the threat posed by long-range fishing vessels of non-coastal countries of the developed economies, and therefore the need to conserve the fishery, (b) the current consideration of the law of the sea, (c) the need to attain high economic growth and therefore to exploit all available sources of such growth, (d) the world food problem, particularly the provision of cheap protein food, the West African countries are likely to take any of the following steps:

1. Follow the example set by some other countries and extend their territorial sea to cover the fish resources off their coastal boundaries (in practice, to the edge of the continental shelf).

2. Achieve the same ends as 1. above but without risking unnecessary world opposition by leaving the territorial sea limits at an acceptable distance but declaring the waters between this limit and the edge of the territorial sea as "exclusive fishing zones." Another way of doing this is to amend the 1958 Geneva Convention on the Continental Shelf to include fish as one of the resources of the shelf, over the exploitation of which a coastal state shall exercise sovereign rights.

A consequence of step 1 or 2 is that distant-water (long-range) fishing vessels of non-African origin will be excluded from fishing in the area; but so also will fishing vessels from other African countries. Coastal countries in the areas having rich fish resources off their coastlines will be in a position to produce more fish than they can consume while other countries in the region with poor fish resources off their coastlines will not be able to produce enough fish to meet their demands. Economic arrangements may therefore be arranged (either bilaterally or within a region or subregional framework) whereby an over-producing country exports a pre-

determined quantity of fish to an under-producing country, while at the same time allowing the country in return to fish a predetermined quota in its territorial sea. The figures could be so arranged that the imported fish, plus the extra fish caught in foreign waters, plus the fish caught in its national waters equal the country's fish demands.

3. Accept a 12-mile territorial sea limit (since this appears to be the limit most likely to meet with global acceptance at the planned 1973 UN Law of the Sea Conference) and depend on international fisheries bodies to ensure a rational utilization of the fisheries resources such that the fish stocks will not be depleted and such that late entry of coastal African countries to the fisheries will not be blocked. The latter involves at least a quota system whereby if a fishery were already saturated with effort primarily exerted by long-range vessels of non-coastal countries, and a coastal country wished to enter into the fishery, the non-coastal countries will be willing to effect a cutback in their efforts sufficient to accommodate the coastal country's effort. International fishery bodies capable of fulfilling this function are already in existence.

SUMMARY

The fisheries interest of the West African countries is thus almost entirely centered on the continental shelf, and on the need to protect its fisheries resources from the long-range fishing vessels of other countries, particularly of developed countries, and to conserve the resources for their own use. The West African countries agree that the fishery resources beyond the continental shelf (mostly tuna) are best managed by international bodies formed by countries interested in the resource.

It is in the interest of the more populous countries of West Africa that the territorial seas and contiguous zones (insofar as exclusive fishing rights are concerned) be as narrow as possible, say, 12 miles. This will make it possible for their vessels to fish in waters off the territorial seas of other neighboring countries in the area. They must do this if they are to meet their high fish demands. If, however, this state of affairs does not prevail and countries with rich resources off their coastal boundaries proclaim complete sovereignty or exclusive fishing rights over the entire resources off their coastal boundaries, the countries with high populations will have to negotiate fishing agreements with countries off whose coasts they desire to fish, and such agreements may be within the framework of wider trade and cooperation agreements.

# Fisheries of the Indian Ocean: Economic Development and International Management Issues

*Arlon R. Tussing, U.S. Senate Committee on Interior and Insular Affairs, and Professor of Economics, University of Alaska*

**Wednesday morning, June 28**

This paper is the outgrowth of my 1970-71 participation in drafting a plan for fishery development in the Indian Ocean for the Food and Agriculture Organization of the United Nations. It is adapted and abridged from three FAO publications stemming from that project; quantitative and other supporting materials may be found in those sources.[1]

## FISHERIES OF THE INDIAN OCEAN

### Population and Incomes, and the Weight of Fisheries in National Economies

The countries bordering the Indian Ocean and its two major projections, the Red Sea and the Persian Gulf, had a total population in the late 1960's of

[1] A. R. Tussing, *Fishery Economics* (1972); A. R. Tussing, *Economic Planning for Fishery Development* (1971); and J. C. Marr, D. K. Ghosh, G. Pontecorvo, B. J. Rothschild, and A. R. Tussing, *A Plan for Fishery Development in the Indian Ocean* (1971). All published at Rome for Indian Ocean Fishery Commission, Indian Ocean Program, by the United Nations Development Program and the Food and Agriculture Organization of the United Nations.

over one thousand million persons.[2] Of the 30-odd national entities in this group, only Australia, Israel, and Kuwait, plus perhaps Singapore and South Africa, could be regarded as moderate or high-income countries. None of these five countries is economically oriented principally to the resources of the Indian Ocean; together they account for less than four percent of the region's population. On the other hand, India alone has more than half the region's inhabitants, and together with Indonesia, Bangladesh and Pakistan, takes in almost three-fourths of its total population. Gross Domestic Product reported for each of these countries was less than $100 (U.S.) per capita in the most recent year for which figures are available. Altogether, at least 15 countries in the Indian Ocean region, with a total population of 852.8 millions, were in the $100-or-less category.[3] Preponderantly, therefore, the region is composed of low-income countries, and inhabited by low-income people.

The proportional weight of the fisheries within the national economies of the region varies immensely. I have estimated the value of all landings, the value of Indian Ocean landings, and imports and exports of fishery products as a ratio to Gross Domestic Product in 1968.[4] The place of fisheries and fish products seems to depend as much upon cultural traditions as upon resource endowment; countries of high and low relative levels of fishery activity, net importers and net exporters, are scattered haphazardly around the Indian Ocean with no single apparent determining factor. Of the three most populous countries of the region, Indonesia's total landings amounted to about two percent of Domestic Product, Pakistan's about one percent, and India's about one-half of one percent. Among the various countries, the value of landings from the Indian Ocean alone is highly correlated with the value of all landings. However, in none of the three largest countries is the value of Indian Ocean landings more than one-half of one percent of GDP, and of the middle-sized countries (population 20 to 100 million) only for Burma is the figure greater than two percent. In more than half of the countries for which such figures may be estimated, the value of Indian Ocean landings was less than 1/500th of GDP.

These proportions are generally low, but it should be pointed out that landed value is only a fraction—a minor fraction in many cases—of the final value of fisheries commodities. In most cases, the ratio of landed value to GDP can be approximately doubled to give an estimate of value added in fisheries as a fraction of all economic activity.[5]

The numbers of net importers and net exporters of fishery products are evenly balanced, but all three of the most populous countries and all but one of the middle group (Burma, which has virtually no trade in these products) are net *exporters*. And in most cases, total exports of fishery products are one-tenth to one-half of one percent of GDP (Taiwan, Japan and Korea, whose fleets also fish the Indian Ocean, fall into the same group).

## Growth Rates of Fisheries

Between 1964 and 1968 estimated landings of fish and shellfish from the Indian Ocean increased from 1,908 to 2,362 million tons. The growth rate of 5.95 percent annually for landings would appear to be a respectable one, exceeding the rate of population increase in the region. There are, however, several reasons to temper any optimism in interpretation of these figures. For many countries in the region, landings data are of doubtful quality,[6] and some of

[2] The population estimates for 1968 (or the most recent previous year) in the 1969 United Nations Statistical Yearbook totalled 1,024.6 millions for the following 36 nations and non-self-governing territories: Australia, Bahrain, Burma, Comoro Islands, Ethiopia, India, Indonesia, Iran, Iraq, Israel, Jordan, Kenya, Kuwait, Madagascar, Malaysia, Mauritius, Mozambique, Muscat and Oman, Pakistan, Portuguese Timor, Reunion, Qatar, Saudi Arabia, Seychelles, Singapore, Somalia, South Africa, South Yemen, Sri Lanka, Sudan, Tanzania, Thailand, Trucial Oman, United Arab Republic, and Yemen. In addition to these entities, FAO statistical entries are available in some cases for the British Indian Ocean Territories, the French Territory of the Afars and Issas, and the Maldives.

[3] These generalizations depend upon deflating the figures for Ceylon and Pakistan (1968) and Madagascar (1967) in the *1969 United Nations Statistical Yearbook* to account for officially overvalued currencies. No attempt has been made here to estimate the appropriate adjustment factors, but they would certainly be more than the 1.40, 1.30, and 1.03, respectively, necessary to reduce these figures to less than $100.

[4] Tussing, A. R., Fishery Economics, Indian Ocean Program, IOFC/DEV/71/13, FAO, IIOFSDP (q.v.), Rome, 1972.

[5] This statement depends upon the assumption that the figures for landed values are indeed that. However, there is reason to believe that some of these figures include the value of some on-shore transport, marketing, and processing services.

[6] Banerji, S. K., Fishery Statistics, Indian Ocean Programme, IOFC/DEV/71/5, FAO, IIOFSDP (q.v.), Rome, 1971.

the upward movement in growth rates may be due simply to improvement in collection of data. Even more important, however, is the exceedingly uneven distribution of the catch increase. Twenty-one percent of the growth in landings was accounted for by non-Indian Ocean countries (Japan, Republic of Korea, Taiwan, and the USSR), and 39 percent of the remainder is attributable to only one country bordering on the Indian Ocean: Thailand. Over half the population of the region lives in India, and that nation's landings grew at an annual rate of only 1.2 percent; in Africa and the Middle East, the landings of many nations remained substantially constant or declined.

Not only was the growth uneven throughout the region, but it was exceedingly haphazard: neither absolute nor relative increases in landings seem regularly associated with any of the following parameters: (1) Probable abundance of fish stocks (as outlined by Cushing, 1971);[7] (2) total population; (3) gross domestic product per capita; (4) general level of infrastructure development, and (5) previous level of fishery development.

Another important aspect of the region's fisheries is that marine catches from the Indian Ocean and its appendages make up less than half the total recorded production of the countries in the region, the remainder coming from fresh water or from other seas. There is, however, a strong association between the increase in landings from the Indian Ocean between 1964 and 1968 and the growth of total landings in 1964 to 1968, or the trend of total landings from 1955 to 1968.

Estimates of the value of landings by country are fragmentary and are of even more questionable reliability than are those for weight of landings. Moreover, the attempt to assemble existing value figures into regional aggregates is complicated by varying rates of inflation, and by the problem of determining appropriate exchange rates.

Export figures are probably somewhat more reliable than are figures on the value of landings. Notwithstanding the limitations of both sets of data, the implicit rates of growth in value of landings and value of exports for the whole group of countries are very high; the regional index of landed value grew at an average annual rate of 11.4 percent and the regional index of export value increased at a rate of 25.3 percent. The latter figure especially outstrips any probable combination of general price increases and upward bias resulting from increasing coverage.

Together, the two figures seem to indicate that the importance of fisheries and fish products in the economies of the Indian Ocean countries proper has grown substantially faster than suggested by the nominal catch statistics discussed above.

Another indicator of a rapid growth in value of catches is the exceptionally rapid rates of increase in catches of the higher valued tunas and related fishes. Reported catches of tunas, bonitos and billfishes from the Indian Ocean grew at an annual rate of 24.1 percent between 1964 and 1968, and Indian Ocean catches of mackerels, snoeks, cutlassfishes and the like grew at 16.6 percent. The tuna fisheries, however, are dominated by non-Indian Ocean countries. Japan accounted for 35 percent of this catch in 1968, Taiwan for ten percent, and South Korea and the USSR for about two percent each. In the aggregate these countries took about half of the total catch including the bulk of the larger tunas. There is substantial doubt whether present catches, much less the present rate of growth, can be sustained. The surface fisheries for smaller tunas may not be fully reported in the statistics, and are believed to be able to support substantially larger catches.

Reported catches of prawns and shrimps from the Indian Ocean region have grown steadily, but at a modest rate (3.7 percent per year between 1964 and 1968). This valuable fishery is overwhelmingly locally based. India is the world's number two producer of shrimps and prawns, and is by far the world's largest exporter.

## Prices of Fishery Commodities

The landings and foreign trade statistics compiled by the FAO are the only internationally comparable indicators of fish and fishery products prices. For each category of price information, estimates or records are available only for some countries and some years. Individual figures for unit value of landings, imports and exports can be obtained from the official statistics by dividing the reported physical volumes into their reported aggregate value. In many cases, the figures for the unit value of landings are suspiciously high.

[7] Cushing, D. H., Survey of Resources in the Indian Ocean and Indonesian Area, Indian Ocean Programme, IOFC/DEV/71/2, FAO, IIOFSDP (q.v.), Rome, 1971.

Some relationships shown in the official data are intuitively plausible. Low income countries generally import low value fishery commodities for domestic consumption and export high valued items (especially crustaceans) to high income countries like Japan and the United States. In almost every instance where both figures are available, the average value of exported commodities is higher than the average value of imports, despite the contrary bias that would be imparted by shipping costs. The conspicuous exception is the Republic of South Africa which imports products corresponding to a relatively high income population, and exports principally reduction products. Also, Malaysia, and Singapore, whose landings, imports and exports are all at comparable levels of unit value, are intimate trading neighbors whose exchange in these commodities is similar to domestic trade within other countries.

Raw fish and, with some conspicuous exceptions, cured fish entering international channels tend to be valued at $150 to $500 per ton. Generalization about shellfish is more difficult because of the greater spread in prices among different products. However, fresh chilled and frozen shrimps and prawns, despite a wide range of grade and quality, seem to fall mostly into the $1500 to $1800 per ton range in the exporting countries; these prices correspond to Japanese import prices clustering rather closely around $2500. The value of fish products and preparations (mainly canned goods) seems to vary both with the level of per capita income and with the region; the countries of South and Southeast Asia show average imports in the $300 to $500 range, while East Africa typically imports a higher grade commodity and the high income developed countries even dearer products. With the exception of South Africa, a major manufacturer of fish reduction products, the countries of the region do not engage in heavy trade in fish meal; nevertheless, a sufficient number of import and export prices are available to generalize that the former tend to be in the $100 to $200 per ton range and the latter $50 to $100.

### Catch Utilization and Processing

Like other economic statistics on the fisheries of the Indian Ocean, numerical information on the disposition of landings is fragmentary and in some cases questionable. Nevertheless some valid generalizations can be made that have wide applicability. The proportion of a community's fisheries landings that is preserved or processed, and the form of preservation or processing, are directly influenced by the community's level of income and the level of development of the fisheries and the surrounding economy. Typically, most of the catch in low income countries reaches its final consumer in "fresh" condition (although consumers in high income countries might not recognize the product as fresh). Preservation, if conducted at all, is limited to sun drying or curing with sea salt or with smoke. For nine of eleven Indian Ocean countries for which such data are available, four-fifths or more of the total catch is marketed fresh or cured; the weighted average of the proportions for all countries is 88 percent. In the world as a whole, however, less than half (42 percent) is so marketed, and the proportion in most developed high income countries is substantially lower. Moreover, even among the Indian Ocean, the proportion of the "fresh" product that is transported and marketed in ice or otherwise chilled ranges from next to zero in the least developed regions to nearly one hundred percent in the high income countries.

The proportion of the catch that is marketed frozen is also directly related to the level of development. These correlations are produced by both supply and demand factors: technical and capital requirements limit the use of refrigeration equipment in poor countries whether this equipment is used for freezing, ice manufacture or cold storage. Additionally, the demand for product quality, protected by freezing or refrigeration, is highly income elastic; high income consumers are more able and willing than low income consumers to pay the additional cost of a fresher product. It is not surprising that a large part of the existing refrigeration capacity in the Indian Ocean countries is utilized by the export fisheries, most notably the processing and storage of crustaceans destined for Japan, North America or Europe.

Canning is not a prominent method of disposition in the Indian Ocean countries.[8] The situation may be attributed partly to consumer taste preferences, but this explanation is clearly inadequate in the face of the vast range of cultural patterns represented in the region. The consumer acceptability of canned goods is probably less sensitive to the condition of

[8] Except significantly, in the high income enclaves of Israel, Singapore and Australia. None of these countries, incidentally, obtains a major part of its raw fish from the Indian Ocean.

the landed products than is any other form in which fish are marketed for human consumption. Also, canned goods are the least perishable of all food products, have the lowest storage costs, and nearly the lowest transportation costs among fisheries commodities. These characteristics all ought to make canning an exceptionally attractive method of utilization in low income tropical countries. The high cost of tinplate is apparently one consideration. Another contributing factor is the fact that the high income countries of Europe, North America and Japan generally protect their fish processing industries more than they do their fishing sectors, i.e., tariffs and non-tariff trade barriers tend to be substantially higher for canned goods than for fresh or frozen fish.

Fish meal and oil production is another processing activity that is almost nonexistent in the Indian Ocean region. With major exceptions (e.g., Peru) in which the industry has located because of exceptional resource availability, fish reduction is an activity characteristic of those higher income countries with suitable resource stocks nearby. As the principal uses for fish meal are the feeding of poultry and swine, markets are concentrated in high animal protein consuming (= high income) areas. Low weight to value ratios (on the order of $100 per ton), which magnify the impact of shipping costs, together with relatively high levels of capital and technology intensity, tip the comparative advantage in reduction fisheries against low income countries.

So far, attempts in the Indian Ocean countries at developing reduction fisheries (e.g., in the Gulf of Aden) or production of fish meal from scrap fish and offal (e.g., Bombay, Karachi) have been financially unsuccessful. Despite the situation described above, the history of the Peruvian reduction fishery suggests that these comparative disadvantages can be overcome in the presence of a sufficiently abundant resource stock (as is suggested by Cushing and others for the Arabian Sea and Gulf of Aden), and that such a fishery can be substantial impetus to general economic growth.

## Consumption

Robinson and Crispoldi[9] have used the commodity-balance method to calculate total and per capita consumption of fish and shellfish for most countries in live-weight equivalents for 1965. Consumption ranged from 100 grams per person in Ethiopia to 38 kilograms in Singapore, with the world average at 11 kilograms.[10] Huang, using a different method and somewhat different data, estimated per capita consumption for 12 Indian Ocean countries for 1961 through 1968. Many of the national series showed increases in *per capita* consumption, but in few was the growth consistent or marked enough to be conclusive, especially in the face of dubious primary data. In Thailand, however, Huang's figures show a growth of consumption between 1961 and 1968 of 2.7 times, accompanying growth in both the fisheries and per capita incomes.

Fish consumption per person shows some association with per capita income in international comparisons, but cultural factors are apparently more influential, allowing consumption to vary by a factor of several times among countries of similar income levels. Total animal protein consumption is evidently more closely associated with income, but the composition of the protein intake (fish, red meat, fowl) is culturally determined.

Within any one country, per capita consumption of fish products is a relatively stable function of per capita income. Over the years FAO has estimated the function relating these two variables for different countries, using historical data and, where available, cross-sectional household budget surveys. Those statistics, called the *income elasticity of demand,* show the approximate proportion by which expenditures on fish and shellfish will change, as a ratio to some small change in household disposable income. The income elasticity of demand for these products in the Indian Ocean countries was estimated to range from .3 in the high income countries (Australia and Israel) to 1.5 in India. The average, weighted by population, was 1.1.

Accordingly, a two percent annual growth rate of real gross Domestic Product per capita would increase per person expenditures on fish products by about 2.2 percent per year, provided the relative prices of fish and competing products remained the same. Coupled with a two percent rate of population growth, this would imply an annual growth of demand by about 4.2 percent.

[9] Robinson, M. A., and A. Crispoldi, in cooperation with the Commodities and Trade Division, FAO. The Demand for Fish to 1980. FAO Fisheries Circular No. 131, FIEF/C131, Rome, September 1971.

[10] Huang, D., *Fishery Economics,* unpublished draft for Indian Ocean Survey and Development Programme, 1970.

## Fishing Enterprises, Fishermen and Vessels

Despite a vast diversity of size, organization, and techniques among marine fishing enterprises in the Indian Ocean region, it is possible to describe a "typical" fishing operation. The modal fishing enterprise is a single family proprietorship in which fishing is the principal occupation; it employs one or more small vessels of indigenous design and idigenous materials, without mechanical power. In a large proportion of these operations, labor other than the owner's immediate family is required; as elsewhere, labor is almost always compensated on a share-of-catch or share-of-receipts formula rather than by fixed wages. The bulk of the catch is marketed in port (or on the beach) for cash, typically to a "middleman" who supplies working credit as well as marketing services. Although there are not satisfactory statistical data to test each of these generalizations, the description above probably describes the operations encompassing most enterprises, most fishermen, most vessels, and the bulk of the landings in most of the countries of the Indian Ocean.

Alternative patterns of activity to the modal one are highly significant, however. True subsistence fisheries (for household consumption or barter only) are evidently rather rare, and are usually carried on as a side-occupation to agriculture or other principal employment. Income-in-kind from fishing is, nevertheless, a substantial part of the income of most fishing households in all except the largest scale powered operations. Pure subsistence fisheries seem to be numerically important only in Madagascar, Mozambique, and Indonesia, and on some of the ocean islands. It is probably significant that these are countries with relatively underdeveloped coastal infrastructures (transport, utilities, finance, etc.); this suggests that present subsistence activities would rapidly be commercialized in response to infrastructure development.

The single owner or single family proprietorship overwhelmingly predominates in the small scale unpowered fisheries; it is still predominant but less completely so in the middle-sized power boat fisheries (10 to 30 meters). Ownership by partnerships, cooperatives, or corporations (private or state-owned) is not rare in middle-sized fishing boat operations. Corporate enterprise, mainly private, but not uncommonly state-owned, is general in the large scale distant water fisheries. It is noteworthy that the whole spectrum of enterprise organization—single proprietorships, partnerships, cooperatives, and corporations—exists in almost every one of the region's countries. They all also persist in the world's most developed fishery economies (e.g., Japan, U.S.A., Norway) and in those showing the most rapid growth (e.g., Thailand, South Korea). The forms of organization in which the most rapid growth occurs varies, however, from country to country. As noted above, a large proportion of the increase in Indian Ocean catch in recent years has been accounted for by the distant water fisheries of Japan, Taiwan and Korea; in each of these cases private or government corporate enterprise (or joint ventures between them) is involved. Joint ventures between foreign corporations and domestic private capital or government agencies play an important role in the region's export-oriented fisheries, particularly those for shrimp and prawns. This pattern prevails in the medium and large scale crustacean fisheries of Madagascar, Saudi Arabia, Kuwait, India, Pakistan, Thailand and Indonesia, and may exist elsewhere in the region.

In addition to vessel operations, a variety of shore-based or fixed gears are used, including beach seines, set nets, "Chinese" nets, and traps of various kinds. The very substantial landings (in the order of 100,000 tons annually) reported from Muscat and Oman are said to be taken mostly with beach seines. There is no information on the proportion of total catches taken without vessels, but over the region as a whole, they probably amount to no more than 15 percent.

The low proportion of powered vessels in the larger countries suggests substantial opportunities for increasing catches with relatively small additions of power that would extend vessel range, permit fishing during stormy seasons, allow more rapid trips to port and hence greater fishing time. However, since even a small outboard motor is often more costly than the present indigenous vessel, and aggregate resource availability may not grow proportionally to fisherman mobility, equipment with power may not always be a cost-effective method of increasing fisherman productivity and income.

Figures on the number of fishermen may be combined with those for number of vessels to give an average crew size. Three to four persons per vessel seem to be typical. All the national series show a reduction of crew size over time. Without more information, it is not possible to explain this trend. However, this statistic agrees with the only indicator we

have of per vessel productivity; declining catches per vessel are indicated for five countries, constant (trend not significant) catches in two, and increasing catches in two. In some instances, therefore, there is a suggestion of declining average vessel size and productivity as the number of vessels increases. Sri Lanka, Pakistan, Malaysia and Australia all have shown increases in value of landings per vessel in excess of their respective rates of general price inflation.

Catch and value of landings per fisherman are further indicators of productivity. Both measures show an increase in all the countries for which figures are available. These statistics, incidentally, are the only ones that suggest a general increase in productivity throughout the region; such an increase should be expected because of the increase in use of power, nylon nets, etc., but the character of the statistical information makes the confirmation of this generalization uncertain.

The middleman system is almost ubiquitous in the small and medium scale fisheries throughout the region. Although it differs in detail among sectors, communities and countries, it is essentially the same as the middleman system that exists for agricultural commodities in many low income countries. The middleman advances credit against the catch (or crop); to recoup his outlay, he also takes over the marketing function. The charges for credit, wholesaling and insurance services (and often some transport) are not segregated, and the cost of the whole bundle of services can be implicitly measured only in the difference between the fisherman's price and the middleman's price at wholesale or retail. This system exists and predominates only where (1) the liquidation value of the fisherman's enterprise is extremely low, so that his only collateral for working credit is his prospective catch, and (2) the marketing chain from producer to final purchaser is short and simple, providing few opportunities for economies from specialization.

Middlemen are generally accused of being exploitative, and most governments in the region are antagonistic to them, often attempting to supplant the middleman with producers' or marketing cooperatives, or with state enterprises. This attitude may be in part an expression of the universal peasant animus against commercial activity in general reinforced by an anti-capitalist ideology of either the "right" or "left." In any case it is not clear how the presence or degree of exploitation would be determined. There is no evidence that the fisherman's share of the retail price under a middleman system is lower than under alternative arrangements such as marketing cooperatives or state marketing boards. Retail prices seem typically to be in the order of 1½ to 3 times landed prices in a variety of situations; the fisherman's share of the final value in the Indian Ocean region is, if anything, greater than it is in the high income countries like the United States. A variety of other marketing systems exists in the Indian Ocean countries, but there is no aggregate information on the volume of fish products handled by each.

In the export oriented fisheries, port sales are typically made directly to processors or cold storage operators. The principal institutions involved in international trade, even with third countries, are Japanese trading companies.

## OPPORTUNITIES AND ECONOMIC STRATEGIES FOR FISHERY DEVELOPMENT

### Levels of Economic Development

For the purposes of considering economic development strategies, I have classified the Indian Ocean countries according to an unconventional scheme in which India is a "developed" country. Among the countries with extremely low levels of average product or income, there is a vast range of levels of economic development as indicated by such measures as urbanization, interregional and international trade, monetization of economic activities, and the availability of social overhead facilities, including transport and other utilities, banking, education and research, and public administration. In respect to these features, some of the poorest countries in terms of average productivity are rather highly developed. Among the less-than-$100 GDP per capita group, India, Sri Lanka, and Pakistan stand out as already having *national economies,* in which a very substantial proportion of economic activity is directed toward organized markets that are nationwide or international.

All populated portions of each of these countries are connected with one another and with the rest of the world by modern transportation and communication systems; organized capital markets include a nationwide system of banks, financial intermediaries, and trade in equities and credit instruments. Although these markets may not penetrate deeply into the population, they extend to every section of the country and every sector of the economy. Similar

generalizations can be made about the number of literate persons and the number and quality of modern skills which are available both in the economy as a whole and in public service. The presence or absence of these features of economic development will be critical in a country's choice of development strategies for its economy and for its fisheries in particular. From this standpoint, the countries of the Indian Ocean, or participating in its fisheries, can usefully be divided into three groups:

*High-Income Developed Countries*

These countries have a completed modern infrastructure serving every region and every sector, and in addition, the bulk of the labor force is employed in modern economic organizations (capitalistic or state enterprises) at high levels of productivity. The lower boundary of this group in terms of GDP per capita is in the $500 to $1000 range. In the Indian Ocean region, only Israel, Kuwait, and Australia clearly fall in this group; South Africa and Singapore are marginal cases. Among the high-income developed nations outside the region which play a major role in the fisheries of the Indian Ocean, Japan is the outstanding instance.

*Low-Income Developed Countries*

These countries have a completed modern infrastructure in the sense previously described but a large part of their populations and potential labor force live outside the modern economy, and are employed (if at all) in low-productivity occupations of a traditional nature, mostly in peasant agriculture. A critical economic characteristic of these countries is their reservoir of low-wage labor available to industry. In terms of per capita GDP, the low-income developed countries occupy a range from levels so low that their quantification is barely meaningful (less than $75) to at least $500 and perhaps more. In the Indian Ocean region, instances are Iran, Pakistan, India, Sri Lanka, Thailand, and Malaysia. Taiwan and South Korea outside the region, which are nevertheless participating prominently in the Indian Ocean longline tuna fisheries, are clearly members of the group.

*Undeveloped Countries*

These countries have only a fragmentary infrastructure and lack integrated national economies; most economic activity is directed at subsistence or at trade or barter within a circumscribed locality. The labor force is predominantly engaged in peasant or subsistence agriculture, livestock husbandry, hunting, fishing, and gathering. Most countries in this group have a Gross Domestic Product per capita of less than $100, but in a few instances an enclave of export-oriented production (e.g., petroleum in Trucial Oman) gives an otherwise undeveloped country a relatively high average-income figure. Most of the Indian Ocean countries, other than those mentioned in connection with the other two categories, are probably in the undeveloped group; the most populous of them is Indonesia.

## Structure of the Fisheries Industries

There is a tendency to focus upon "fishing," i.e., the capture and landing of aquatic organisms, as the central element of fisheries industries; but in a developed market economy these activities normally account for no more than 10 to 25 percent of the value of the final fisheries product.[11] The fisheries industries or fisheries economy must be seen to include the system of processing and distribution; the production of boats, gear, fuel, and supplies, utilities; repair, port, and business services; and the government agencies responsible for regulation, management, and development of all other sections of the complex.

The contribution of an existing or new fishery to the economy of a nation is not a simple function of the value of the fish at some one point in the production process, but is related more closely to the *value added* by the fishery, most broadly defined. Hence, it is possible for a port to record substantial fish landings and substantial exports of raw or processed fish, which, however, make only a small contribution to the local economy: if boats, gear, equipment, fuel, and supplies, financial, insurance, and marketing services; and the more skilled categories of labor, are supplied from the outside. There are numerous historical and present examples of this kind of operation, and they may differ little in their local impact from the operation of foreign-based distant-water fleets.

[11] The definition of a "final fisheries product" is of course arbitrary. The reference here is to the last sale in which the fish product is recognizable as such and is separately priced: this would include fresh or processed fish sold at retail or to hotels and restaurants, and fish meal or manure sold to farmers or to manufacturers but not the seafood dinner, or the livestock, crops, or paint produced with the aid of a fisheries product.

*Comparative Advantage in Fisheries*

One of the most critical parameters of a country's economic prospects in the fisheries is its access to resource stocks. Access encompasses both the proximity of the stocks to potential landing places, and the effective political control over exploitation of the resource. Proximity is an advantage in economizing on fuel, on vessel and crew time, and on ice and refrigeration or processing facilities on board. In the absence of ports, shore facilities, and infrastructure support, it is, however, of little advantage to any but the smallest-scale fisheries.

Control over resource use, either recognized in international law or *de facto* and unilateral, permits a country to reserve the resource for exploitation by its own nationals, or by those licensed by it in exchange for some kind of tribute or rent. It may also permit the country to limit fishing effort to a biologically or economically defined optimum, and thereby to insure the fishery's profitability.

Proximity to and/or control over a resource stock is often the only source of advantage which an "undeveloped" country has with which to benefit from exploitation of that stock. The degree to which such a country can profit from easy or exclusive access, even to abundant stocks of internationally marketable species is, however, limited by the difficulty of recruiting managerial talent and a committed labor force, by the lack of infrastructure support and the scarcity of capital. There will be few genuine opportunities for the undeveloped countries to develop their "own" export or domestic market-oriented offshore fisheries, with or without external technical aid and capital grants or subsidies; I have not seen a convincing instance in the Indian Ocean region where such a project has a promise of long-term profitability. The development strategies for the least-developed countries, based upon exploitation of new stocks, seem to be concentrated into two categories:

(a) Enhancement of productivity in subsistence or small-scale commercial fisheries. Measures of this type include motorization of canoes or other small traditional craft, popularization of previously unused species, and introduction of new net materials or designs into traditional fisheries. These measures may be highly cost-effective from the standpoint of increasing the material welfare of the fishermen and of consumers in their immediate vicinity, but they are unlikely to stimulate or be part of sustained economic development, unless they are tied to a larger regional economy by transportation and marketing arrangements.

(b) Development of enclaves of modern commercial fishing, using foreign capital, technology, and markets. Whether these enclaves are established as joint ventures between national and foreign interests, or as pure concessions to foreign firms, the undeveloped country may have little to contribute to the enterprise other than a piece of land for a base, and/or the use of its territorial waters. The benefit it obtains will be roughly proportional to its contribution. The benefit may take the form of rents or taxes, the employment and training of some local people, or the construction of dock and other facilities which may have other uses. Again, however, the contribution of such enterprises to the country's sustained development depends upon their linkages to the rest of its economy.

*Low-Income Developed Countries*

In a ranking of industries according to their demands on the sophistication of the surrounding economy, the fisheries in general do not stand very high. Though fishing alone accounts for only a minor fraction of the value added in fisheries products, fishing, together with boatbuilding and fish-processing, tends to account for 45 to 75 percent of the total. Each of these activities in turn tends to have a high labor content (50 to 80 percent of value added), a substantial portion of which may be unskilled or semi-skilled.

The biggest long-run component of comparative advantage in the fisheries is low labor cost, provided that the economy is organized to utilize its cheap labor. The proviso is important; low wage rates are not necessarily the same thing as low labor costs. "Cheap" labor is often unskilled, undisciplined, and careless, and there are levels of commitment and acculturation below which it is not an economic advantage. The ability to use such labor profitably implies also a minimum number of entrepreneurs, technicians, and/or civil servants who are aware what needed capital goods, supplies, technology, and scientific knowledge are available elsewhere and who are able to adapt and use these imports to local circumstances.

The significant implication of the foregoing is that in the long run, given equal access to resources and markets, a significant advantage in fisheries development rests with low-income developed countries as defined in this paper. This advantage shows up

clearly in the distant-water fisheries, and helps account for Japan's spectacular expansion there until the mid-1950's, and for the present surge of countries like Taiwan, South Korea, and Thailand into this field.

Principal handicaps of low-income developed countries in fisheries development relative to their high-income counterparts are in (1) planning and general business management; (2) repair and maintenance; (3) physical waste, spoilage, and quality control; and (4) export marketing. Each of these shortcomings reflects the generally low standards of skill, efficiency, and reliability of the surrounding economy. These shortcomings cannot be overcome with services imported for a limited term and then dispensed with (like the services of a research biologist in a resource survey, or of a naval architect engaged to design a new vessel); they are matters of day-to-day management of the enterprise. Moreover, unlike some local handicaps, the lack of these personnel qualities cannot be compensated for simply by taking on more cheap, unskilled labor. In short, despite the advantages of the low-income developed countries in cheap labor and a developed infrastructure, their fisheries still require critical inputs from higher income countries; these needs are most compelling in the export-oriented fisheries, where cost competition, quality control, and international marketing channels are particularly important.

The low-income developed country has a wider range of options in institutional arrangements and development strategies than does the undeveloped country. It is also more likely to benefit from any one of these arrangements than the latter country, because of the more extensive linkages of the fishery enterprise with the rest of the domestic economy. Low-income developed countries may choose to encourage direct foreign investment or international joint ventures, or to establish fishing and processing facilities on a wholly domestically owned basis by local private enterprise, by cooperatives, or by government. Higher skills, including management, can be obtained on a contract basis or as international assistance; marketing abroad may be done on commission or through foreign trading companies; and foreign capital may be brought in as credit rather than as equity.

Many of the governments in the Indian Ocean region would *prefer* to promote entirely national enterprise, either out of a desire for economic autonomy or as part of a socialist philosophy. Even in the more developed of the low-income countries, however, the international joint venture is usually the most promising mechanism for developing a new fishery. This is particularly the case with an export fishery. Total independence from overseas capital and management can be obtained only at a high price: technical personnel on short contracts are usually more expensive and less committed than those with a career connection with, for instance, the Japanese partner in a joint venture. Marketing on commission implies a substantial earnings loss, and the integration of processing and overseas marketing is a great stimulus to quality improvement. Finally, the foreign source of equity capital may expect a higher rate of return than commercial lenders would ask on hard loans, but this rate will often be lower than the domestic opportunity cost of capital. Above all, venture capital is available for riskier enterprises than is foreign credit, and shares in the risks associated with the fisheries; and equity capital will be more abundant and cheaper where its owners have a substantial voice in management.

Joint ventures in fisheries oriented to local markets, however, are not generally as appealing to international companies as are those oriented toward exports to high-income countries. In former cases, markets are unfamiliar to the overseas company and are in many cases totally undeveloped. Profit possibilities are surrounded by greater uncertainties on every side, not least in the sphere of politics and policy: for instance, the monetary and trade authorities are less likely to give prompt authorization to critical foreign exchange. Yet, management, repair, and maintenance together with quality control remain matters of great handicap in locally oriented commercial fisheries of the low-income countries as well as in their international trade.

A universally conspicuous shortcoming in the fisheries development efforts of the Indian Ocean countries is in the fields of economic analysis, planning, and business management. There, shortcomings are general, from the national planning level to the level of enterprise operation. In many cases the responsible officials and managers have a disturbing lack of awareness of even the notions of productive efficiency, cost effectiveness, or opportunity cost, particularly with respect to capital. Almost all institutions and (government) enterprises in fisheries development are under the direction either of scientists or of civil service generalists; I was generally impressed by the ability in their specialities and by

the dedication of those I met, but training, background, or inclination for business management do not seem to be common.

In several of the Indian Ocean countries, the overvaluation of the national currency, associated with a chronic foreign-payments disequilibrium, and with centralization of control over foreign transactions, constitutes a massive set of obstacles to development. Another commonplace difficulty is the multifunctional government Fisheries Corporation, directed by managers with the job security of civil servants, without explicit standards of performance, and with accounts from its various functions hopelessly intermingled so that the profit or loss of various activities cannot be distinguished. It is not surprising that few of these corporations show even an operating surplus, much less the amortization of, or a return to, the capital entrusted to them.

Development planning should, but seldom does, take into account the mutual impact of investment in fisheries and economic processes in the rest of the community. For instance, it is only by ignoring the value of the surrounding land, the costs of congestion to the community as a whole, the additional loads that will be imposed upon utility systems, etc., that expansion of Sassoon Dock in Bombay or of the Karachi Fish Harbor could be contemplated. On the other hand, planners should have anticipated the positive development spillovers from the growth of fishery activity in Cochin Harbor. These external benefits, if captured in land values or taxes by a development authority, might have financed both the harbor itself and construction of shore facilities that could have alleviated congestion before it occurred.

The strategies of several countries toward marketing and credit for the small-scale commercial fisheries reflect policies and implicit theories of market structure—specifically of the roles of middlemen, cooperatives, and state marketing organizations—that are unsupported by serious economic analysis. On the surface at least, they are unsupported by experience. It is difficult to find any instance in the region where cooperatives or state marketing organizations have improved on the economic performance of existing middlemen from the point of view of fishermen or consumers; yet they have usually required injections of scarce outside capital and administrative talent.

There is a likelihood that the vast majority of government-sponsored cooperatives and government fisheries enterprises, including the majority of those assisted by international organizations and bilateral aid agencies, are unsuccessful by any standard. It would be useful to survey the more successful instances and to learn what it is which distinguishes them from the unsuccessful. I know of no government or granting agency which has any plan for systematically making such evaluations.

In the various government training programs, either for government officials or for operatives, I encountered only one instance where any business or economic training is part of the curriculum; this is the Indian Government's Central Institute of Fisheries Education at Bombay. In contrast, at the same government's Central Institute of Fisheries Operatives, which trains skippers, engineers, and radiomen for certification under India's licensing laws, training requires about five years, and is roughly equivalent to a university degree. Yet students in this program receive no instruction at all in accounting, finance, business law, production management, or marketing.

At the operating level, it is common to see expensive processing or freezing equipment operated at a fraction of capacity despite unfulfilled demand for its services and despite an operating deficit in the enterprise, because it is operated only one shift per day. Labor-consuming methods of materials-handling are used according to local custom even where they are also wasteful of capital; for example the doors on plate freezers are typically open for 20 to 30 minutes on each load for the lack of an inexpensive trolley or modular loading device. Fishboxes, handtrucks, and winches, however cheap, are unseen at most fish harbors, including those where congestion clearly results in spoilage and other increased costs. At one overloaded metropolitan fish dock, effective capacity could be increased 50 to 100 percent simply by establishing one-way traffic lanes and keeping those who are not actually working out of the loading area.

## NATIONAL AND INTERNATIONAL RESOURCE MANAGEMENT

### The Problem of Free Access: Single-Jurisdiction Management

In recent years, as economists have become concerned with problems of the fisheries, it has become a truism that freedom of access to a fish stock leads to excessive inputs of labor and capital devoted to

exploiting that stock. In extreme cases of large, long-lived species (e.g., whales) or of stocks that become exceptionally concentrated during some phase of their life cycle (e.g., diadromous species), excessive entry may lead to an impairment of the long-run productive capacity of the stock or even to its extirpation. These situations have long been recognized, and it is in response to them that early programs of conservation management developed.

More frequently, it is believed, there is no serious long-run danger to resource productive power, but fishing effort tends to exceed the level at which the average catch over time (measured either in physical or in value terms) is maximized. These instances too have frequently led to management mechanisms, domestic and international, to control fishing effort, usually toward some physically defined performance goal.

At the other extreme it may not be technically feasible to attain, let alone exceed, the "maximum sustainable yield"; yet (as in each of the previous cases) a large part of the fishing effort will cost more than the value of its contribution to the catch. In almost every "mature" fishery (i.e., one in which labor and capital commitment has become stabilized through market forces, or in which they have been stabilized by regulation), it is possible to show that nearly the same landings (if not greater landings) could be sustained at a substantially lower cost.

It should be pointed out that economic (if not biological) "overfishing" is now seen as an inevitable, not merely an incidental, consequence of an open-entry regime. This may not be regarded as a serious problem in low-income countries with regard to their small-scale coastal fisheries, because these operations may be technically capable of making only a small impact on the potential productivity of the resource. Moreover, the capital requirements of these fisheries are low and the labor committed to them may not have significant alternatives, particularly where fishing is a seasonal side-occupation. Therefore, the dissipation of potential profits may not be a significant issue.

In cases where the conditions described here prevail (e.g., in Indonesia, where the number of coastal fishermen has increased far more rapidly than the increase in landings), there is at least one real policy question associated with the issue of overcommitment: it is crucial to know whether the present limit upon the catch level is imposed by the vessels and gear utilized, or by the potential productivity of the stocks. More specifically, will motorization result in sufficiently increased aggregate landings to justify its costs, through extension of fishing grounds or through ability to operate in bad weather, or will it result mainly in the consumption of capital and fuel in an intensified rivalry over substantially the same catch potential? In the latter instance, knowledge of resource stock and its dynamics is important in avoiding useless outlays; they may indicate that the best immediate policy toward these fisheries is to leave them alone and, if possible, to discourage vessel and gear improvement.

Where the policy objective is the development of a profitable commercial fishery, either for export or for domestic markets, the problem of determining and implementing the optimum level of investment and fishing effort is extremely important and extremely thorny. Economic optimization may be an elusive notion even in principle because decision makers may not know, or may disagree upon, what is to be optimized.

In countries with an overvalued exchange rate there is likely to be a high priority placed upon earning foreign exchange, and an attempt to interpret the notion of profitability or to bias management decisions (by means of export subsidies, etc.) to reflect this priority. The interrelations of fishing, processing, and other industries, among fish stocks as biological entities and among fisheries, lead to further ambiguities. In very few instances can the "rent maximization" implied as a policy goal in equilibrium economic models be made directly into an operational standard of performance.

Another intractable difficulty is the uncertainty attached to estimates of potential productivity coupled with the great fluctuations in catches and in effort-yield relationships induced by natural factors over time. For some kinds of stocks, even where they are subject to relatively constant fishing pressure, it takes five or ten years to establish with statistical confidence a central tendency in catches, or even the existence of a trend. This is an exceedingly long time in the context of economic decisions made under conditions of great uncertainty. Where trends are swamped in the short run by annual fluctuations, and where each fluctuation can be explained by natural factors, it is little wonder that, even in the mature fisheries, fishing and processing enterprises with time horizons of maybe three or four years resist sophisticated management schemes. Nor is it surprising that fishery interests resist gear-reduction schemes that are presently painful and promise a payoff only after several years.

I fear that there will be very few important cases in marine fisheries where the economically optimum level of investment and sustained effort can be de-

termined except by fishing and, moreover, few instances where the optimum can be ascertained without having been exceeded for several years. This may be of little moment where gear and crews are adaptable and mobile, and where new stocks of substantially similar productivity remain to be discovered and exploited. Here license limitation may be feasible after the data have demonstrated overfishing, and the excess capacity may be pushed out into new fields. Something like the foregoing has marked the history of some fisheries in Japan and the USSR. But (1) very few of the fishing operations contemplated by the low-income countries will be sufficiently adaptable to be part of such a strategy; men and gear may be as difficult to dislodge from specific fisheries as in the high-income countries; the persistence of labor surplus conditions will probably make exit all the more sticky; (2) shore facilities, which usually employ at least as much labor, involve as much investment, and contribute as much income to the local economy as fishing itself, are even less mobile and, under conditions of free entry and imperfect port markets, are subject to the same tendency to overinvestment as are boats and fishermen and (3) a strategy of "deplete and move on" cannot be pursued successfully by several countries at the same time on increasingly crowded seas.

One possible response to the likelihood of overinvestment is to proceed slowly in fisheries development. After some "safe" baseline had been established by the management agency, the capital committed to any particular fishery and to its processing would be allowed to increase at no more than (say) five percent per year. In this case, even if ten years were required to establish definitively that the optimum capacity had been exceeded, it would have been exceeded only by 63 percent, in contrast to a level many times the optimum which is not unknown in the mature fisheries. In years of peak resource abundance, vessels and buyers normally outside this fishery could be licensed to participate. There is no need to review here the alternative mechanisms for limiting effort in a particular fishery; several references[12] (Scott, 1962; Crutchfield, 1966; Gulland, 1971) adequately list the alternatives. It should be re-emphasized that aggregate catch quotas and limitations on the time, place or manner of fishing may be effective in preserving an endangered stock or in maintaining long-term average physical yields, *but they cannot by themselves prevent wasteful overcommitment of capital and labor* in the fisheries. Indeed, the creation of excess real costs[13] is the central principle by which each of these management devices limits the catch. Of the various management techniques only taxation, direct limitation of effort by licensing of the optimum capacity, enterprise catch quotas (allowing each enterprise to take its share in the manner it wishes), or single enterprise control (ownership or concession), can prevent waste of capital, labor, and materials in the fisheries.

There are wholly national fisheries in the Indian Ocean region in which the economically or physically optimum level of fishing activity or of processing capacity may already have been exceeded. Yet, to my knowledge, none of the countries of the region now has the machinery to determine and enforce a limit on the amount of effort committed to specific fisheries. Moreover, there is at least one important international fishery in which fishing effort has clearly exceeded the optimum. No international management machinery of any kind has yet been established within the region, but special committees to consider the longline tuna fisheries have been established by the Indian Ocean Fisheries Commission and by the Indo-Pacific Fisheries Council.

Management policies for fisheries entirely within one nation are inseparable from the broader questions of national fisheries administration and development. The appropriate management techniques will vary according to the kind of resources and the structure of the industry in question, but proper implementation of any of them requires a knowledge of the fishery stock and its dynamics, and the regular collection of information on landings and on economic conditions. International organizations and bilateral aid programs on a country basis may assist in building up the institutions of fisheries administration, statistical services, and resource analysis, but establishment of the scope and manner of regulation is a national problem reflecting national assessments of development priorities. (For instance, the effective

[12] See Scott, Anthony D., "The Economics of Regulating Fisheries," *Economic Effects of Fishery Regulation*, FAO Fisheries Reports No. 5, 1962; Crutchfield, James A., "A Note on Economic Aspects of Fishery Management," FAO Fisheries Circular No. 27 (restricted), Rome, 1966; and Gulland, J. A., Management, Indian Ocean Programme, IOFC/DEV/71/4, FAO IIOFSDP (q.v.), Rome, 1971.

[13] Real costs here are those that consume real resources—capital and labor—as opposed to pecuniary costs, which may be real or may be only money transfers. A tax which raises the cost of fishing by a given amount will be as effective in discouraging excessive effort as will a quota or seasonal restriction which requires a similar increase in the amount of capital and/or labor necessary for the same catch. Only the latter, however, imposes a real resource cost upon the national economy.

fishing pressure on a particular stock might be limited to a specified level either by the sale of a concession to a single, highly capitalized enterprise, or by restriction of fishing rights to boats of a very small maximum size. The first alternative would probably be more profitable and might yield the government substantial revenue; the second might create more employment). However, requests for grants or credits for specific fisheries operations should include—*and granting or lending agencies ought to demand*—an assessment of the dangers of excessive effort in the particular fishery, and specification of the measures to be taken to meet this danger. In some instances, grants or loans should not be made without a commitment on the part of the recipient nation to limit further entry into the fishery in order to protect the profitability of the investment in question.

Two investment principles should be especially emphasized: one regarding commercial profitability, the other in respect to economic development policy:

(1) Where access to a fishery is unlimited, the economic life of capital committed to it—the period over which the investment must be amortized—is greatly shortened. In some cases it will be in order for granting or lending agencies to calculate depreciation over a period as short as three to five years in evaluating project profit expectations.

(2) Some fisheries ventures will have good commercial profit expectations, considered by themselves, but will waste capital and contribute nothing to economic development because they are additions of capacity devoted to an already fully exploited resource. Generally speaking, grants or loans whose objective is economic development should be confined to projects that will not result in, or contribute to, excess capacity.

### International Fisheries Management

The foregoing treatment has mainly concerned fisheries under a single jurisdiction; international fisheries present further management complications. The critical distinction is not between fisheries in territorial waters and those on the high seas. One stock may extend to, or in its migrations run a gauntlet of, the territorial waters of two or more countries. On the other hand, many resource stocks may technically extend to, or be confined to, international waters, but may be exploitable economically only from bases in the coastal nation. Distant-water operations are *ceteris paribus* more costly than shore-based operations, and only a substantial advantage in labor or other costs will make them competitive. Moreover, even where a distant-water fleet pioneers the exploitation of a stock, the entry of the coastal nation into the fishery may depress yield/effort ratios sufficiently to make the operation unprofitable for the distant-water fleet.

Another aspect of this distinction is that what is relevant to a country's ability to manage a fishery is not the status of its territorial limits in international law, but its ability to enforce its claims, a very different matter. For instance, the disputed territorial or jurisdictional claims of Peru, the Republic of Korea and Iceland, have been backed with sufficient enforcement power to require rivals at least to negotiate over the claims. On the other hand, the unrecognized territorial claims of Indonesia, and even the wholly undisputed territorial waters of Burma or the Khmer Republic, are *de facto* international waters because of these nations' lack of surveillance capacity. As with regulation of its domestic fishery, each nation must decide whether the incremental return to investment in patrol boats, aircraft, and surveillance personnel justifies their costs. In practice, of course, this decision is likely to be made partly on grounds of military, customs, and immigration policy and of national prestige, as well as those of benefit to the fisheries.[14]

The exploitation of fish stocks in international waters is subject to the same tendency toward excessive fishing effort as are open-access fisheries under a single jurisdiction. Management of international stocks, however, is far more difficult because it presupposes agreement among sovereign states that have different objectives, different price and cost situations, and different institutions in their own fisheries. Agreement on international management measures in a particular fishery requires an implicit agreement on the allocation of benefits from that fishery among its participants. Even where it is conceded on all sides that additional fishing effort will not result in a substantial increase in landings, or may indeed decrease them, it will often be difficult to persuade a party whose share of the fishery is increasing rapidly that it will gain more by limitation of effort than by the existing uncontrolled regime.

Two important fisheries of the Indian Ocean region have been identified by the Indian Ocean Fisheries Commission as presenting immediate management problems, and evidence presented to the Commission has established a strong case that total

[14] These considerations may have other profound effects on fisheries policy. In at least one Indian Ocean country, it is widely believed that the government is reluctant to grant foreign-exchange authorizations for marine engines, radios, or even compasses, in the anticipation (not unreasonable in the light of that country's extremely restrictive trade and exchange policy) that fishing boats so equipped would commonly be used for smuggling.

fishing effort in each of these cases is already excessive.

The most serious international management problems are the tuna longline operations on the open sea, and the instances where the nearby-based fisheries of two or more countries interact. There are reasons to believe that the first problem is not susceptible in the immediate future to any stable international management regime. The open-sea tuna stocks of the Indian Ocean are now exploited primarily by Japan and increasingly by Taiwan and the Republic of Korea. Increasing fishing effort by the latter two countries, and the beginnings of entry by several others, have probably pushed catches somewhere near the long-term average maximum level, and yield/effort ratios have fallen radically. Japan, with very rapidly increasing labor costs, is being priced out of this fishery despite rising world tuna prices, and urgently desires limitation of effort to maintain any profitability for herself. Taiwan and South Korea, however, with substantially lower labor costs than Japan, may still gain in the short run (which is the ruling time frame) largely at the expense of Japan, by increasing their own effort; they are unlikely to accept any limitation which freezes effort or catches along national lines on present or historical ratios.

In the longer run, if countries in the Indian Ocean which have potential competitive advantages both in labor costs and in proximity enter the fishery, it will be in the interest of countries like Taiwan and Korea to limit catches or (preferably) catch capacity. For both of these countries, as for Japan today, almost any allocation scheme will be better than none. Potential entrants, however, will see themselves as better off now with *no* regulation at all than with any allocation of catch or effort based upon the *status quo*. At present and for the foreseeable future, the low-income countries of the region have no reason to participate in any management agreement for these stocks. And no agreement will be stable so long as any potential entrant stands outside it. Ironically, an effective management regime which included the low-income countries of the region and which preserved a highly profitable fishery for its participants would be especially unstable: the limitation of effort would guarantee yield/effort ratios high enough to attract even higher-cost fleets than now participate in the fishery.[15] The willingness of some low-income countries to subsidize this fishery for foreign exchange, and of some rich countries to subsidize it for "social" reasons, will aggravate the situation.

There is a host of management systems that might be set up, including innovative ones like transferable quotas, to reduce instability and improve resource allocation, if a universally acceptable initial allocation were possible. But for all the foregoing reasons, the probability is that the high-seas tuna stocks of the Indian Ocean will continue to be overfished, with even suboptional benefits being captured only by the most recent, lower-than-average cost, entrants.

With respect to other international resources likely to be exploited (and consequently overfished) by more than one nation, a number of potential situations exists in which there are economic grounds for international cooperation in management. Where the cost levels and structures of two or more national fisheries are similar, as has been the case with the United States and Canada, and may be the case in India and Pakistan; India Bangladesh, India and Sri Lanka, Thailand, Malaysia, and Singapore; Kenya and Tanzania; and (perhaps) Iran, Iraq, Kuwait and Saudi Arabia; there are several options for international management regimes.

The initial allocation of quotas or exclusive management zones may require hard bargaining, but in each of these cases, in contrast to that of tuna longline fisheries, it is in the interest of each of the parties to come to some agreement. In the extreme case of two neighboring countries with similar costs and institutions and with good mutual relations, their fisheries might be managed as a single entity, as are the Pacific halibut fisheries of the United States and Canada. In some cases, the economic and diplomatic relations among neighboring countries are bad enough so that direct bilateral negotiations are unlikely to be productive.

In these situations, the Indian Ocean Fisheries Commission, or new subregional bodies might be a useful vehicle in which to bargain over management arrangements and with which to implement them. It should be pointed out, however, that there now seems to be no urgent concern with these regional management problems, except regarding the shrimp of the Persian Gulf.

The shrimp fisheries of the Persian Gulf present a lesser order of difficulties than do the deep-sea tunas. There is evidence that stocks are already overexploited and that a further increase in total capacity is not warranted. But these stocks exist within an almost wholly enclosed body of water; the probable participants in the fishery are known with a reasonable degree of confidence, and are confined to

[15] Any management system that is not universal, or that leaves an undistributed portion of an overall quota for new entrants, invites the use of fisheries operating under "flags of convenience." or the granting of concessions by non-member or non-quota countries.

the countries bordering the Gulf; and most of the shrimp stocks occur within territorial waters. The countries involved have moreover made considerable progress in dividing the potential mineral resources of the Gulf. The prospects for agreement on a management regime for these fisheries seem reasonably good, and the time may be ripe for a conference of the Gulf countries with the objective of arriving at a draft management Convention on shrimp, and perhaps on other marine resources of the Gulf.

Further development of the fisheries of the Indian Ocean will almost certainly bring new issues of international rivalry and over-commitment of fishing effort. Potential problem areas are both demersal and pelagic stocks of the Straits of Mozambique and the Coast of Oman; the upper Arabian Sea; the South India-Sri Lanka area; the Gulf of Aden; the Bay of Bengal; and the sea south of Indonesia. Proposals for further resource assessment or for development projects in these areas should take into account these management issues; funding of such operations might be conditioned upon the contending nations' taking steps toward resolving these issues.

One kind of development that would reduce conflict of interest, and conflicts in action, between the low-income Indian Ocean countries, and high-income countries "invading" the region's fisheries is commercial cooperation through joint ventures. As was pointed out earlier, enterprise that combines high-level skills, technology, and marketing channels from the high-income countries, with locational advantages, labor and shore services from the Indian Ocean countries, will in the long run tend to have significant competitive advantages over enterprises drawing their productive inputs entirely from either kind of nation.

## Discussion

**Wednesday morning, June 28**

*MacKENZIE:* Bill MacKenzie, from the International Atlantic Salmon Foundation of Canada. I would like to address two questions to Mr. Sullivan.

First, prior to the June ICNAF meeting, the United States had been pressing for the management of anadromous fish by the state in whose waters they spawn. I wonder whether the recent ICNAF agreement, specifically that portion referring to Atlantic salmon, should be taken as an indication that the United States has lost some of its interest in continuing to press for special anadromous fish management principles at the 1973 conference.

My second question is, since we are discussing the needs of developing countries, would you explain how the recent ICNAF regulations provide any benefits at all to new entrants such as developing countries, particularly in view of the fact that only ten percent is allocated to new entrants.

It seems to me that the only benefit that such regulations provide to developing countries is an example of one regional organization having successfully preserved the vested interests of its present members.

*SULLIVAN:* The United States position on anadromous fisheries is not changed at all. One of the national quota regulations that I referred to was on Atlantic salmon, and it did permit a high seas fishery by two nations. The United States voted for it.

But the United States voted for it not because it has changed its position of opposition to high seas fisheries for anadromous fisheries, but because it was the only way in which that goal could be reached in the long term. For those two countries did agree that after a four-year period in which quotas are allocated they would cease their high-seas fishery for the Atlantic salmon.

I think that the ICNAF experience with quota allocations does give some promise for the developing countries. They do not have to, in other circumstances, follow the exact ICNAF formula. In fact, ICNAF does not follow it precisely. Professor Kasahara and I indicated that it followed the 40-40/10-10 formula as the basis for the allocations in each case except the salmon one, which was a special case. But they did not follow it precisely. If you take the quotas listed in the pile of documents that came out of the ICNAF meeting and take the numbers listed and work them back, they do not come to precisely 40-40/10-10 in each case. For each case is a little different, and ICNAF found that you must work

from your formula and then adjust it when necessary to take into account special factors that do not fit the formula precisely.

So in some cases the new entrant factor, for example, was more than ten percent; in the South Atlantic you might work your formula so that the new entrant factor is 20 percent, or even 50 percent, to start with.

I think that it is possible to use the experience of INCAF, but adapting it to the peculiarities of other areas of the world and the needs of the countries in other areas of the world, where the needs quite clearly would be different from the needs of the 15 nations who participated in the ICNAF meeting.

*ROYCE:* William Royce of the National Marine Fisheries Service of the United States.

I would like to comment on a matter which was referred to in passing by Dr. Tussing, but which in my view has not had the examination that it deserves.

This is the matter of the rather widespread subsidization of distant-water fishing fleets.

Now, most of the fishermen, or a large proportion of the fishermen of the world have some kind of subsidy, and I think no one really quarrels with the social need for subsidizing the artisanal fishermen who, along the coasts of many countries, are among the world's poorest people.

But I believe quite different issues are raised by the extensive practice of subsidizing distant-water fishing fleets by developed nations, and I would like to call this especially to the attention of the people from the lesser developed countries who are concerned about the fisheries off their coasts.

*McLOUGHLIN:* My name is McLoughlin, Consultant to the Government of Fiji.

I would like to address a question first to Mr. Sullivan as to the extent to which the regenerative capacities of a particular species of fish are taken into account in assessing catch limitations.

I have a second question which I would like to address to Mr. Bayagbona, as to this: have the countries of the Central African region considered entering into joint venture agreements with companies from the distant-fishing states to fish the local fisheries on a similar basis to the one the Fiji Government has used, whereby a local company was formed with Japanese and local capital. It is under Japanese management, using Korean fishing boats, with an annually increasing element of local crew members, and a 100 percent local element in the processing facility.

*SULLIVAN:* Under the terms of the ICNAF Convention, the basic factor in formulating a regulatory measure is the scientific information on the particular stock in question.

For the first 20-21 years of ICNAF that was the only criterion in formulating a regulatory measure. The amendment to the Convention that I mentioned which allows national quota allocation also brought in economic and technical factors which can be taken into account in formulating these regulatory proposals. Such factors were taken into account in establishing the quotas and dividing them among the various countries.

Before the quotas were allocated nationally, an overall quota for a particular stock was reached. That was based upon the recommendations from the Scientific Advisory Committee to the Commission on the maximum sustained yield that that stock could produce.

Some of these stocks that were brought under national quota controls were producing the maximum sustained yield, some of these stocks were slightly overfished, and some of them had not yet reached the stage of maximum sustainable yield. The Commission felt, for various reasons, that all of these stocks should be brought under control. With regard to some of the ones that were not yet at the maximum sustainable yield point, for example, there was some fear that diversion of effort from other stocks being brought under regulation might push them over the edge, unless some limits were put on them at the maximum sustainable yield basis. Thus while the overall quotas were based on scientific evidence, other factors came into play in deciding on regulating a stock and in arriving at the national allocations.

*BAYAGBONA:* The question was about joint ventures, whether the West African countries were considering using joint ventures to develop their fisheries.

The answer is yes. Given the state of technical know-how in the area, with a lack of sufficiently trained manpower, given the scarcity of capital—vessels are very expensive, so also with fishing terminals, et cetera—it is clearly recognized that joint ventures with countries that are already developed in these fields are one of the easiest ways of developing the fisheries of this area.

In fact, in my country any enterprise with an annual turnover of more than a million dollars is open to expatriate participation, and within this law we have been encouraging joint ventures very actively.

*KOERS:* Albert Koers, Woodrow Wilson Center.

I also have a question for Mr. Sullivan. Could you comment on the question of why, more or less all of a sudden, the distant-water fishing nations have become much more cooperative in ICNAF? Is this caused merely by the threat of an extension of coastal state jurisdiction, or are other factors involved?

*SULLIVAN:* Most of the members of ICNAF are distant-water fishing nations. Even if you go to the extent of counting Denmark as a coastal nation in ICNAF because of Greenland, and France as a coastal nation in ICNAF because of its two small islands off the Canadian coast, you still only have four coastal nations out of 15.

Therefore they have an interest, a great deal of interest in ICNAF, in making international cooperation work, in making sure that jurisdiction is not extended on such a basis that distant-water fisheries would be excluded.

They could see, perhaps, a potential for this happening in the ICNAF situation, where there were a number of stocks up and down the U.S. and Canadian coast which had been heavily over-exploited, and they could see the agitation in the U.S. and Canadian fishing industries growing stronger practically by the day, to bring this situation under control.

The United States and Canada were willing to bring it under control by international cooperation in ICNAF if meaningful agreements could be worked out, but I think they had given indications that if that could not work they would have to do something else. This was the inducement to the members of ICNAF to sit down and work out a solution so that everyone could live with it, even though the particular regulations may not have made each one of them very happy. They must have come to the ICNAF meeting prepared to take some kind of appropriate action to demonstrate that ICNAF could work.

*MBOTE:* My name is Mbote and I am from Kenya. I direct my question to Mr. Tussing.

You stated correctly, I think, that most of the catch, particularly of tuna, from the Indian Ocean goes to distant-water fishing countries.

I think—and you may correct me in this—most of these countries operate through mother ships and floating factories. I would also submit that it is more expensive to operate these mother ships and floating factories than it would be to put shore installations for processing fish or handling fish in the countries that border that particular fishery.

What do you think makes these distant-water fishing countries reluctant to invest in the developing countries around these fisheries? There are very few investments from these countries, particularly in the developing countries around the Indian Ocean.

*TUSSING:* I agree completely with your first point that, all other things being equal, it is more economical to operate from a base in the adjacent country. The situation may be different in the tuna longline fishery, where mobility is a great advantage; but with the other fisheries there should be a high economic attraction in using bases and labor from the coastal nations, and processing on-shore rather than with mother ships.

There are political and organizational obstacles to these arrangements, however. Firms in the distant-water fisheries often want to maintain complete control; they do not want the troubles that go with international joint ventures and prefer to avoid taxation and regulation by the coastal country. Many of the joint ventures that have been attempted have been unsuccessful because of misunderstandings and administrative complications.

The experiences of different forms of joint ventures in the fisheries, and why some have been successful and others unsuccessful, would probably be a valuable topic to investigate systematically. Japanese fishing enterprise participates in almost every type of joint venture imaginable at some place or other. Japanese enterprise also operates pure concessions—by which I mean an agreement whereby a foreign fleet contracts to use a coastal base for its own fisheries, either in the host country's waters or on international waters. In some instances, concession agreements convertible into joint ventures may be the most promising way for an underdeveloped coastal nation initially to get into modern fishing. The way in which petroleum concessions are now giving way to "participation" and to national oil companies may be suggestive.

*BELLO:* Emmanuel Bello, of Nigeria.

The theme of our first two discussions the first two days of our conference was centered on finding an interim measure. There was a major division on this between the technologically developed nations, some of them, and many of the less technologically developed countries, but it seems to me that there is an area where this—what may be regarded as the "forbidden apple"—could be effectively and profitably used for the benefit of many of the developing countries, particularly in Africa, the coastal states of course.

That is, how do we find an interim measure that will cope with the present situation to allay the fears

of many of the countries, as one could deduce from the speech of the Director of Nigerian Fisheries?

My other question is whether there is any possibility of improving the so-called primitive methods of fishing which is a great drawback in the production of many of these countries.

Is there any method of improving these scientifically, to improve the production generally?

I would like to have some concrete suggestions, either from the panelists or from the floor.

*BAYAGBONA:* As far as I understand, the question is how to upgrade primitive methods of fishing to more modern ones. Technically this is not very difficult; all the techniques are known. This is therefore not really the problem, because all the inputs necessary to effect the transformation are known. The problem is simply a matter of economics and getting to the fishermen who need to be upgraded.

For example, if you went to a village where they were already using canoes, and you tried to give them a trawler, you may find that there are no supporting facilities for maintaining this trawler in that particular village; and you cannot carry the village on to a main center, because the villager has no roots in a "main town." So the sort of development needed is really an evolutionary process, that of gradually building up the economy on a broad front so that any input you want to introduce to upgrade the fisheries will find supporting structures already in existence.

You need roads, for example, to move the products around, and so on.

One of our own problems is getting into distant-water fishing, fishing in areas which are perhaps richer than areas immediately off our coastline; and here the problem is capital and know-how.

So the problem of transforming primitive to modern fishing is purely that of capitalization, educating people in the new techniques of modern fishing. For example, to take a boat from Lagos to go and fish off Abidjan, you need a man who can navigate a boat through the high seas, and he therefore has to be well-trained. This means he has to go to a formal training school and all that.

*NWEIHED:* My name is Kaldone Nweihed, from the University Simon Bolivar, in Venezuela.

I should like to congratulate the gentleman from Nigeria on his excellent exposition, and I should like to pose the following question.

I think I understood from this exposition that the countries of the Central West Coast of Africa have two kinds of problems, one of them international and the other regional.

By the first, I mean the problem of fishing boats which come from distant countries to take up the catch from their coasts; and the regional problem, the uneven distribution of the fishing potential of the zones, inasmuch as some countries do have an excess of yield, which they do not consume and others who would wish to have it can not have access to the product.

Now, as far as the first question is concerned, I understand there were three solutions offered, three methods, three measures to be taken. Whatever the measures to be taken might be, have the states of that region considered the measures to be taken subsequently as to arrive at a more even distribution of the nutritive value of the fish, once the first international problem has been solved?

That is, taking into consideration the particular fact in that area that there are land-locked nations like Mali and Niger, who do have an excess of product from their sweet-water fishing rivers. In other words, the land-locked nations in this particular area cease to be a "burden" and become a help.

*BAYAGBONA:* On the uneven distribution of fish in the region, we had a meeting in Lagos some time ago called by the Organization of African Unity to harmonize our views on the question of the Law of the Sea in general, and one of the problems we discussed was this, that all of us did not have equal resources off our coasts.

If we are going to present a unified front at a forum like the Law of the Sea Conference, then there must be some equal sharing of whatever benefits we can get out of these negotiations; as rogues first agree among themselves on how to share the booty, you see.

So there was a gentlemen's agreement that if we are able to secure more control over these resources, then preference shall be given to some other African country if it were to apply for license to fish off a country's rich area.

Now, I say "gentlemen's agreement" because this is not written into a formal convention as yet. Whether it will in fact eventually be written, I do not know, because frankly speaking, the relationships between some members of our countries of the West African Coast with non-coastal countries are sometimes stronger (more friendly) than relations between two African countries on the same coastline.

So we hope that this gentlemen's agreement will emerge and be transformed into something more concrete.

Perhaps, as I said before in my address, this will be taken care of in the regional economic agreement

which is, I suppose, in the offing. Our politicians talk often, whenever they meet, that it is a good thing for a regional arrangement to be made which will be quite all-embracing, so that the economy of the region as a whole would be pulled together toward the overall aim of Pan-Africanism.

As you know, the aim of the OAU is to integrate Africa, and one way of doing this is to have regional groups, so perhaps we will be able to form regional agreements first which will include this type of common exploitation of fishery resources as a start, and then move further and integrate different regional groups later on.

In fact, there are already bilateral agreements along this coastline for joint exploitation of fisheries resources, and recently we made an attempt to negotiate with some other neighbors on joint exploitation of national waters for fishing.

*HOLMSEN:* Andreas Holmsen from the University of Rhode Island.

I understood from Mr. Sullivan's statement that, looking at the performance of ICNAF over the past decade, and current actions by the Industry Advisors in this country, that certain drastic changes were needed within the organization.

I also was led to believe by his statement that he felt tremendous changes had taken place by allocation of country quotas.

The only resource I know of in the Northwest Atlantic where they have allocated country quotas are on herring. Now, on the George's Banks stocks, the U.S. got four percent of the quota, the foreign fleets got 96 percent of the quota. Now may I ask these two loaded questions?

Point 1, do you feel that the coastal state has been given due consideration?

Point 2, do you feel these kinds of allocations will make international agreements more agreeable, more palatable, to the fishing industry in coastal states?

*SULLIVAN:* I suspect that in every national allocation situation no one will ever be quite satisfied. I suspect that the United States and Canada, as the two principal coastal nations involved in these allocations I was talking about would have liked more to be allocated to the coastal nations, but I think generally the coastal nations were satisfied with the allocations.

Remember that each one of these quota situations is different, and where the coastal nation does not get much in terms of one stock, it may get quite a bit in terms of another stock, taking into account both the historic factor and the special allocation to the coastal state. For those stocks where the coastal state has had a long interest, obviously its historic factor is quite high, to which you add its coastal-state preference, and you come out quite well.

Where the coastal state has not had a particularly large interest in a fishery, even though it may have one now, its historic share may be very low, but its special allocation as a coastal state allows it to enter the fishery and to start growing. For example, in the 14 allocations of local stocks along the coast of the United States and Canada, in three of them the United States received no specific allocation at all. This was up in the Grand Banks-Newfoundland area, where we don't have much of a fishery. Also in that general area, for the American plaice and yellowtail flounder stocks where the overall quota was respectively 60,000 and 50,000 metric tons, the United States share was only 100 tons each.

But you take the yellowtail flounder stocks off southern New England, where the two quotas were 16,000 and 10,000, and the United States share was 15,000 out of 16,000 and 9,000 out of 10,000. Or the silver hake stock in the Gulf of Maine, where the United States share was 9,500 metric tons out of 10,000. I think the United States was generally satisfied with these latter allocations; we received virtually the entire quota of these stocks, which are of particular concern to the American fisherman, right off our own coast, very close to our ports, where we have developed specialized vessels and specialized fisheries that would be hard-pressed to go over into some other fishery if these were not available to them.

*ALLEN:* Richard Allen, from the Atlantic Offshore Fish and Lobster Association.

I would like to continue with the point that Koers raised, in that if ICNAF did make a change for the better, but this was under the threat of withdrawal and possible extended jurisdictions, if a future regime is settled in favor of international commissions, this threat will be removed, and can we expect the same cooperation under that situation?

*SULLIVAN:* The possibility of U.S. withdrawal was only one part of it. The countries that were participating in ICNAF have a vested interest in making this kind of thing work, completely independent of the possible U.S. withdrawal, which was a factor during this meeting. How much of a factor is difficult to judge.

Possible Canadian withdrawal might also have been a factor, since the Canadian fishermen were

equally dissatisfied with the performance of ICNAF up to this point.

The Soviet Union, Japan, Poland, Spain, the United Kingdom, the other countries that participate in ICNAF, have interests in other parts of the world where the United States does not participate in the fishery, and where Canada does not participate in the fishery. They need to make this kind of system work. It has to work all over the place, not just in the Northwest Atlantic.

So that a threat, if you call it that, by one country in one area cannot be the entire incentive to them to make it work. They have many interests that dictate that they try very hard to make such systems work.

# PROPOSED INTERNATIONAL FISHERY REGIMES AND THE ACCOMMODATION OF MAJOR INTERESTS

## International Fishery Regimes and the Interests of Coastal States

*Gunnar G. Schram, Acting Permanent Representative of Iceland to the United Nations*

**Wednesday afternoon, June 28**

We are all familiar with the various fishery regimes that have been proposed at one time or another for the utilization of the world's fishery resources. Opinions differ widely on the most sensible approaches in this respect; be it an internationalization of the resources under UN management, extensive jurisdiction by the coastal state or a continuation of the *status quo*. The purpose of our session here today, as I see it, is precisely to analyze the various approach and options available and try to bring out their advantages and pinpoint the shortcomings.

### The Present Problem

It has been estimated that the global demand for living aquatic resources by the year 2000 will be approximately 400 million metric tons, or about seven times the present harvest from the world's oceans.[1] In order to sustain this growth it will obviously be necessary to maximize the harvest from the sea much more effectively and rapidly than has hitherto been the case. We will, in other words, be faced with an explosive demand for fishery products throughout the world during the next three decades, spurred by the rapid increases in population and demand for relatively cheap high-protein diet, available to the broad mass of people, not least in the developing countries.

Given these premises the immediate question is: Will we be able to achieve these aims through present systems of marine resources utilization? If not, which are the most desirable alternatives?

It is submitted that the contemporary framework of international fisheries exploitation is already outdated, and that the concept of freedom of fishing, once valuable, has now become totally unfit as a basis of resource exploitation. Freedom of fishing has now, unfortunately, become the equivalent of a license to kill off entire fishstocks on the high seas—a luxury contemporary society can no longer afford. The supposition that the present system will not do in this respect can be supported by many and quite weighty arguments. During the past half a century solution of fisheries problems, arising outside national jurisdiction, has been sought through bilateral or multilateral negotiations and agreements. This is still the rule and it cannot be denied that in some instances the remedy of the Fisheries Commissions and Conventions has proved useful and succeeded in solving the problems. That there have also been some glaring failures is nonetheless true.

It is by reason of these failures, where an entire valuable fishstock has been practically exterminated through indiscriminate fishing, in spite of the existence of regional fisheries commissions, that grave doubts are raised whether the present system can cope with an increasingly precarious resource problem.

[1] Chapman, W. M., "Planning and Development in the Oceans," *Pacem im Maribus*, 1970. p. 15.

I will mention only a few instances which graphically illustrate this and show how ineffective the old legal concepts of resource exploitation are in the world of the electronic fisherman. It is incidents like these which have greatly undermined the faith we formerly had in regional and international fishery arrangements as basis for marine exploitation.

The first is the virtual extinction of the blue whale and the humpback whale in spite of the existence and well-meant efforts of the International Whaling Commission. Secondly, the Atlanto-Scandian herring stock of the Norwegian Sea, which a few years ago yielded an annual catch of one million metric tons, has now practically vanished because of overfishing,[2] and the same may be said of the haddock stock of the Georges Bank off New England.[3] In both cases international conventions covered the areas in question. One might also mention here the partial destruction of the Atlantic salmon stocks by indiscriminate fishing on the spawning grounds, which has been taking place during the last few years. There exists furthermore general agreement that the cod catch in the Barents Sea could be doubled if the fishing effort would be cut in half.[4] Such a cut has not, however, been implemented by the fisheries commission concerned. Lastly, a group of experts working under the North East Atlantic Fisheries Commission announced their findings a couple of months ago that all the major food fishstocks of the North East Atlantic were now being utilized to the limit.

In addition to this, the recent practice of "pulse" fishing with the most sophisticated fishing gear, leaving only a dead sea behind, causes legitimate concern among coastal states, who see their coastal resources jeopardized by this novel method and the fishery commissions apparently powerless in dealing with such actions.

These developments have led to the conclusion among a considerable number of coastal states that the present system of marine resources exploitation is inadequate and must be supplanted by a new system which guarantees two tenets. They are the maximum sustainable yield of marine resources and the preferential or exclusive rights of the coastal state to their utilization.

The regional, or international, convention approach is deemed to have failed in the past in such cases where it was, perhaps, most needed, and it is submitted that these failures are of such a serious nature as to merit the introduction of a new system in high seas fisheries: the economic jurisdiction of the coastal state.

## The Economic Zone

The growing impetus behind the concept of the economic jurisdiction of the coastal state is derived from two sources already referred to: the growing need of coastal states, especially developing countries, for utilization of coastal fisheries in the interest of their own economic progress, and the growing conviction that only by granting the coastal state first right to these resources, and the responsibility for their productivity, can indiscriminate exploitation, such as overfishing, be realistically checked.

Not only has this view been gaining adherence among developing coastal states[5] but has also met with understanding among experts from more conservative sea law groups. Thus Professor Wolfgang Friedmann says that "even those who are deeply concerned at the erosion of the freedom of the seas, must acknowledge that, quite apart from an understandable desire to counter the expanding claims of other coastal states to continental margin resources, the fishery practices of nations that fish the world over with modern equipment lend considerable justification to the protective measures of the Santiago States and the growing number of others that are following their example."[6] Another authority, W. M. Chapman,[7] states that one can anticipate with some degree of confidence that the new international fisheries bodies in the tropical and subtropical world are not going to be able to detect, measure and frame measures to prevent overfishing problems as rapidly as they develop over the next 30 years. In Mr. Chapman's view the consequences will inevitably be exacerbated fishery jurisdiction problems, not only between long range fishing nations and coastal nations, but between neighboring nations in the developing world whose fishermen harvest the same migratory resources.

I fully agree with Mr. Chapman in this analysis.

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[2] Lucas, C. E., *International Fishery Bodies of the North Atlantic*. Law of the Sea Institute, University of Rhode Island, Occasional Paper No. 5, April 1970. Pp. 8-9.

[3] McKernan, D., "International Fisheries Arrangements Beyond the Twelve Mile Limit." *Proceedings* of the Third Annual Conference of the Law of the Sea Institute, University of Rhode Island. June 1968, p. 255.

Brigham, R., "Crisis at Sea: The Threat of No More Fish." *Life*, December 3, 1971.

[4] Chapman, W. M., *op. cit.* p. 37.

[5] Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor Beyond the Limits of National Jurisdiction. Doc. A/AC.138/66, para. 6, March 1972.

[6] Friedmann, W., "Selden Redivivus—Towards a Partition of the Seas?" *American Journal of International Law*, Vol. 65, No. 5, October 1971, p. 763.

[7] Chapman, W. M., *op. cit.* p. 43.

And it is precisely because of the arguments that he marshals here that one comes to the conclusion that coastal state jurisdiction is to be preferred to the defective present system, as an approach to fishery problems of the future.[8]

## The Basis of Coastal State Powers

At present only a minority of coastal states has opted for jurisdictional claims over coastal resources beyond the 12 mile territorial sea. The strong trend in this direction is, however, clear. This can be seen from declarations of a number of states at the last meeting of the UN Seabed Committee, and statements in Committee I of the 26th Session of the General Assembly. The majority of the developing countries who participated in the debate declared support for a fishery regime based on extensive coastal state jurisdiction, with one of the major powers, China, lending her support. The most recent step in this direction are the conclusions of the communique adopted by the Foreign Ministers meeting of the Caribbean countries, held in Santo Domingo, June 5-9 last, where economic sovereignty of the coastal state over a 200 mile zone is advocated. However, fisheries jurisdiction beyond the 12 mile limit continues to be challenged by a number of states on the grounds that such a jurisdiction is in contravention of international law.

That the law on this point is undergoing radical changes and needs clarification is evidenced by the decision of the United Nations to convene a new Law of the Sea Conference in 1973 or 1974, where coastal state powers will be one of the major topics of discussion.

The following points may be made in favor of the view that international recognition of the legality of coastal state jurisdiction in its adjacent waters is forthcoming.

### *The 1958 Geneva Conference*

By the Convention on Fishing and Conservation the coastal state is granted power to take unilateral conservation measures, and exclude other nations from fishing in its coastal sea under certain circumstances. Its special interest in the resources of the coastal area is given express recognition in the Convention.

### *The Anglo-Norwegian Fisheries Case*

In its judgment in 1951 the Hague Court said *inter alia* that in the delimitation of sea areas there is one consideration not to be overlooked, the scope of which extends beyond purely geographical factors: that of certain economic interests peculiar to a region, the reality and importance of which are clearly evidenced by a long usage. It is precisely because of their economic interests in the resources of the coastal sea that coastal states are now claiming jurisdiction over them.

### *The Continental Shelf Analogy*

By the 1958 Convention on the Continental Shelf "the coastal state exercises over the Continental Shelf sovereign rights for the purpose of exploring it and exploiting its natural resources." Many coastal states find it manifestly unjust that rights to oil, gas and mining, plus sedentary fisheries, are thus granted, but rights to the living resources above the shelf withheld.

Discussions in the UN Seabed Committee have shown that an increasing number of states are drawing an analogy in this respect and advancing the idea of entity: an economic zone covering both the shelf and the resources of the superjacent waters.

### *Practice of States*

The fact that more than 20 states claim a wider fisheries jurisdiction than 12 miles indicates the lack of a uniform rule in state practice on the subject. Some of these claims were already made over 20 years ago and have since been sustained in practice. Among the claimants are some of the world's most important fishing countries. Other states have indicated their plans to extend their jurisdiction in the near future (e.g. Iceland, Mexico). In addition to this, states which have protested these claims as illegal are now beginning to negotiate fisheries agreements with the culprits, vide: The Fisheries Agreement between Senegal and Spain, signed June 1, 1972, and the Agreement between Brazil and the USA concerning Shrimp, signed May 9, 1972. Both these agreements constitute tacit recognition by the cosignatories of a 100 mile and 200 mile fisheries zone respectively.

This indicates that it becomes more and more difficult as time passes to characterize this state-practice as a breach of international law.

### *Need for Better Management*

The present system of open access to marine resources brings with it not only dangers of depletion, but is also tremendously wasteful, as it permits the employment of excessive amounts of vessels and

[8] However, Mr. Chapman does not share this view, it should be noted.

fishermen. (FAO estimates that it is possible to halve the present cost of landing cod from the North Atlantic, thereby saving approximately 175 million dollars per year.)[9] Control and better management of the resources for increased profit are therefore urgently called for. A quota system does not solve this problem, except to a limited degree, being based upon unanimity of all the fishing nations and discriminating against newcomers. The coastal state will, on the other hand, be able to provide the control and management needed for maximizing the sustainable yield.

*The Development Issue*

A consensus has been reached on the need for increased efforts in the sphere of development aid, both within and outside the United Nations. The most valuable aid that can be granted the developing countries is not handout of cash but giving them jurisdiction over natural resources which are adjacent to their coasts. Nowhere is the need for protein-rich food as urgent as in the developing countries, and statistics show that their fishery production has grown much more rapidly during the last decade than that of the developed countries.[10] It is therefore no coincidence that all the nations in the group that has claimed extended jurisdiction are from the Third World, except one, Iceland. From the viewpoint of development—of closing the widening gap between the rich and the poor nations—extended coastal jurisdiction will be of cardinal importance.

## Exclusive or Preferential Rights

The essence of coastal state jurisdiction may be either exclusive economic jurisdiction or only claims to preferential rights in the area. The fear will immediately be voiced that if exclusive rights are granted, the danger of under-utilization of the resources will materialize. That can of course happen, but is unlikely, as sale of fishing licenses would be a source of revenue for the coastal state which was not fully utilizing the resources. This aspect could be especially important for developing countries which still have to build a modern fishing fleet. The preferential rights system would on the other hand not pose this threat, but there the difficulties arise in fixing the coastal state share *vis-à-vis* non-coastal states. Attempts have been made to solve this difficulty in the United States. Draft Articles on the Breadth of the Territorial Sea, Straits and Fisheries have been submitted to the UN Seabed Committee[11] but so far without success. The former system is obviously easier in operation and more in the interest of the coastal state. It is therefore likely that it will prevail at a future conference, rather than the more complicated system of preferential rights.

In any system of coastal state jurisdiction it will be necessary to build in an international review of fishery methods and rate of exploitation, in order to safeguard the interest of the international community and make unused resources available to other fishing nations. A system of international arbitration in cases of disputes seems also called for. Only in exceptional cases where the coastal state's survival is dependent on the riparian marine resources, like those of Greenland, Iceland and the Faroe Islands, might these requirements be waived, and full sovereignty recognized.

## The Extent of Coastal State Jurisdiction

At present, claims beyond the 12 mile limit vary from 15 miles (Congo, Brazaville) to 200 miles. At the March session of the UN Seabed Committee, 38 states indicated that they favored a very extensive economic jurisdiction, many of them out to 200 miles. It would be premature to try to predict where the limits of the economic zone will be placed at a future Law of the Sea Conference. It seems probable that a maximum limit will be agreed upon and it then left to individual states to conclude agreements within the area, in conformity with their marine interests. The size of the zone will obviously also be influenced by geographical factors relevant to the area, different criteria being used, e.g. in the North Sea and in the Pacific.

Judging from trends at present in evidence, both within and outside the United Nations, it seems probable that the limits of coastal state economic zone jurisdiction and the national seabed area will be identical.

A growing number of states and international authorities are advocating that the limits both of the seabed area and economic zone be fixed at 200 miles,[12] while restricting the territorial sea proper to 12 miles, thus securing free transit. In view of developments during the last two decades in the law of the sea, this seems a realistic proposition.

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[9] Christy, F. T. Jr., "Legal Foundations of the Ocean Regime." *Pacem im Maribus* 1970, p. 99.

[10] FAO, "The State of Food and Agriculture," 1970, p. 6.

[11] Art. 3, Report of the Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor Beyond the Limits of National Jurisdiction. G. A. Official Records: 26th Session, Supplement No. 21 (A/8421) pp. 241-245.

[12] Malta: Draft Ocean Space treaty, (A/AC.138/53) Art. 36, *ibid.*, p. 131.

# International Fishery Regimes and the Interests of Developing States

*Chao Hick Tin, State Counsel, Attorney-General's Chambers, Singapore*

**Wednesday afternoon, June 28**

Among the many major problems facing the international community of nations today, the question relating to the law of the sea is certainly one of the most important and pressing. It has provoked much national emotion and has divided the community of nations into differing factions, each interested in safeguarding its own national interests, and yet all ever so anxious to project its national interests as representative of those of the international community. Frictions and conflicts between the differing interests of nations are inevitable unless an equitable solution can be found that can accommodate satisfactorily all these divergent national interests.

The urgent need for a law of the sea was brought into prominence with the advancement of technology and a sudden realization by nation states after the Second World War of the immense wealth of the sea, both mineral and living. The Truman Declaration of 1945 marked the beginning of a scramble for the riches of the oceans, followed by unilateral claims by three Latin American States to a belt of 200 miles of territorial sea. While the two Geneva Law of the Sea Conferences of 1958 and 1960 found solutions to many of the problems relating to the sea, a number of vital problems were, however, left unresolved. Three of such unresolved questions were the breadth of the territorial sea, fishery zones for coastal states and a clear and definite demarcation of the continental shelf that may be considered to fall within the national jurisdiction of coastal states.

As the present discussion is restricted to questions of fisheries, I shall confine my remarks mainly to that subject, dealing with the various kinds of interests of developing countries in fisheries. The views expressed here are my own and do not necessarily reflect the views of the Government of Singapore.

## THE PRESENT LAW WITH REGARD TO FISHERIES

Some writers have doubted whether there is in fact a law on fisheries. In so far as that view suggests that under the present law, both customary and conventional, no exclusive fishery zone or general preferential right is accorded to coastal states, I am in agreement. However, there are in fact some customary and conventional rules on the law of the sea having a direct bearing on the question of fisheries.

The Geneva Convention on the High Seas, in article 2, declares that "the high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty." The principle of the "freedom of the high seas" comprises, inter alia, both for coastal and non-coastal states, freedom of fishing. The only qualification to this "freedom" is that it should be exercised with reasonable regard to the interests of other states. It should be noted that this Convention, as stated in the preamble, is declaratory of established principles of international law, and as such the provisions therein contained enjoy validity independently of the Convention.

The rights of all states, whether coastal or landlocked, to fish on the high seas is again recognized in the Geneva Convention on Fishing and Conservation of the Living Resources of the High Seas wherein article 1 provides that all states have the right for their nationals to engage in fishing on the high seas. However, the special interests of the coastal states are also recognized, for in paragraph 1 article 6 it is provided that a coastal state has a special interest in the maintenance of the productivity of the living resources in any area of the high seas adjacent to its territorial sea. Towards this end, paragraph 3 of the same article obligates a state whose nationals are engaged in fishing in any area of the high seas adjacent to the territorial sea of a state to enter into negotiation, when so requested, with the coastal state with a view to prescribing by agreement the measures necessary for the conservation of the living resources of the high seas in that area.

The prerequisite therefore for determining where the "freedom of fishing" begins is to examine what is the maximum permissible limits which a coastal state may claim for its territorial sea. Various arguments have been advanced to the effect that since the 1958 and 1960 Geneva Conferences failed to agree on a universally agreed maximum limit, each state is free to fix its own limit in accordance with its own needs. Such an argument must necessarily fail, for it undermines at the very root the very

existence of high seas. It also fails to take into account customary and conventional rules with regard to the matter.

The International Law Commission, in its consideration of the question of the breadth of territorial sea, while recognizing that international practice is not uniform as regards the delimitation of the territorial sea, considered that international law does not permit an extension of the territorial sea beyond twelve miles. This customary rule of international law recognized by the International Law Commission was approved by the Geneva Conference in 1958 where, in paragraph 2 of article 24 of the Geneva Convention on Territorial Sea and the Contiguous Zone, it is provided that "the contiguous zone may not extend beyond twelve miles from the baseline from which the breadth of the territorial sea is measured." As the "contiguous zone" is a zone adjacent and seaward of the territorial sea, it must necessarily follow that the breadth of the territorial sea of any state may not legally extend beyond 12 miles.

## A NEW LAW OF THE SEA

This is the present law. Of course legal rules are not immutable. They should be subject to changes to meet contemporary needs and requirements. While unjust laws should not be allowed to remain on the book, it is also the duty of the lawmakers to ensure that a new set of rules to replace those obsolete ones should equally reflect equity and justice to all that they seek to govern. The law of the sea is one of the most dynamic branches of international law. Matters of vital national interests are involved in the consideration of these questions and they have quite justifiably engaged the minds of Government leaders and publicists of all countries.

The international community is now at the threshold of establishing a new law of the sea. The time is indeed opportune to consider reforms. Such a new law, to be tenable, must adequately reflect the legitimate interests of all states, whether coastal or landlocked. While no state should secure more than its fair share of the natural resources of the sea, it is equally important that no state should be deprived of its rights to a fair share of those natural resources. It is only when nation states are prepared to share the marine resources of the ocean equitably would a solid foundation be found upon which the new law of the sea could be built. Nation states should be on guard against the abolition of one kind of inequity only to substitute it with another.

## NEEDS AND INTERESTS OF DEVELOPING COUNTRIES

The expression "needs and interests of developing countries" seems to suggest that developing countries have certain common interests and needs. Insofar as fishery is concerned, the need of developing countries for the living resources of the sea to provide the much required protein for their people is common to all developing countries. Similarly, all developing countries would like to secure a fair share of the marine resources for their people and to protect against unfair depletion of those resources by other foreign states. To that extent all developing countries share common interests. Divergences between developing states arise when the mechanics to safeguard those resources are considered. I might add, these divergences are also found between developed states.

It is perhaps an accident of geography and of historical development that the geographical situations of developing states differ so widely. Some states have very vast and long coastlines, while some others have very narrow coastlines. Similarly, some coastal states are endowed with rich marine resources near to the coast, while others are not. Further, some coastal states, because of their close proximity to their neighboring states, have little territorial sea or fishing zone to claim. To this last group of states, fishing on the high seas, as presently defined, is the only means of acquiring the much needed protein for their people. Among the developing coastal countries, Iraq, Jordan, Zaire and Singapore belong to the underprivileged group in that sense. They have been referred to as the "shelf-locked states." There may also be other developing coastal states who are in this category.

Another substantial category of developing states, whose interests in the marine resources should not be ignored or overlooked, are the landlocked states. On no other continent does one find more landlocked states than in Africa, where, I believe, there are 14. In Asia there are five developing landlocked countries and there are two in Latin America. Under the present international law, these states have the right to exploit the marine resources of the high seas outside the legitimate limits of the territorial sea of the coastal states. The fact that these landlocked states have not to date exercised that right is no reason to deprive them of that right. It may be true that exploiting the marine resources is probably not a matter of high priority in the development planning of a developing landlocked state. Various reasons may have caused this state of affairs. Their situation of being landlocked is already a handicap

of considerable magnitude. Then there is the added problem of negotiating a transit agreement with its coastal neighbor for the purpose of conveying personnel and fishing equipment to the coast and of transporting the marine catch from the coast to the landlocked state itself.

It is pertinent to note that of the 25 states decided by the recent Third UNCTAD Conference at Santiago, Chile to be the least developed, no less than 15 of these are landlocked states. This represents 71% of the total number of landlocked states of the third world. These figures clearly show that the extreme underdevelopment of many landlocked developing states is directly related to their condition of being landlocked. Imported goods to these states are higher in price due to extra costs for transportation, and goods exported from a landlocked state are that much less competitive in the open market for the same reason. And, of course, the living resources of the sea are out of reach of the landlocked states due to practical difficulties as I have pointed out earlier. Given the necessary facilities, I am sure many developing landlocked states will find their way to exploiting the living resources of the sea, to provide the much needed protein for their hungry masses.

Let me now turn to those developing coastal states that have advocated a change to the law to allow a coastal state greater rights and control over the living resources of the sea adjacent to their coast. Quite a number of delegations of such developing coastal states to the United Nations Seabed Committee have suggested that a coastal state should be accorded an exclusive economic zone of 200 miles, measured from the baselines. The following are some of the criticisms levelled against the present regime on fisheries:

1. The concept of the freedoms of fishing on the high seas is a concept imposed upon the majority of nation states by a minority of maritime powers, especially the distant-water fishing states, to further their own interests, at the expense of the coastal states.

2. There are no effective regulatory and conservation measures which should be observed by all states. The present situation of freedom to fish is not balanced by a corresponding responsibility to conserve.

3. Technological advancement in the last two decades have demonstrated the capacity of man to harvest the living resources of the sea in such a manner that can cause their depletion. There has been in the past number of years an increasing tendency towards over-exploitation and over-capitalization of fisheries.

4. The existing fishery bodies are not effective enough, owing largely to the difficulty of obtaining the necessary consensus to give effect to regulatory and conservation measures.

The following are some of the arguments advanced to justify the claim to an exclusive fishery zone.

1. There is an interrelationship of the land, its people and the adjacent ocean space. The right of the coastal state to administer the resources of the sea adjacent to its territory does not derive from concessions by other nations, but from the natural relationship existing between the sea, the land and the man who dwells on it.

2. Protective measures have been undertaken by coastal states, sometimes at considerable expense, to keep the ocean environment adjacent to the coast in a condition conducive to the survival and generation of fish. It has been shown scientifically that it is the coastal environment that sustains many of the fisheries of the world and accounts for the wealth of living resources which are found nearer the coast.

3. Living resources of the sea are closely related to the marine ecosystem of a particular country and must be recognized as part of its natural resources.

4. The concept of the "freedoms of the seas" does not respond to the interests of the international community because it assists the ambition for supremacy of the powerful states, the distant-water fishing states, as well as the abusive practices that have produced so much harm to the sea itself, to its living resources and to health and other human values. The interests of the international community lie in promoting the economic and social development of less developed countries and in reducing the existing imbalance between the rich and the poor nations.

For all the above and perhaps some other considerations, a number of delegations of developing states have at the Seabed Committee proposed that international law should accord an exclusive economic zone (or fishery zone as some may want to call it) upon the coastal states of up to 200 miles.

## Effect of 200-mile Exclusive Economic Zone

Let's turn now to examine the effect a proposal of a 200-mile exclusive economic zone, or such a fairly extensive zone, would have on the interests of developing landlocked and shelf-locked states. This

exclusive zone would benefit those developing coastal states that have a vast expanse of sea adjacent to their coasts. They would certainly gain substantially from such a new law.

But the developing landlocked and shelf-locked states, who are the most handicapped with regard to law of the sea questions, have everything to lose in such a new deal. In fact it is no deal at all in so far as they are concerned. Whereas under the existing international law, fishermen from developing landlocked and shelf-locked states can fish upon the high seas adjacent to the coast of any state, they would not be able to do so under such a new law, which accords an extensive exclusive economic zone upon the coastal state. These fishermen would have to go far out into the open sea to fish. With their present state of underdevelopment in fishing technique and fishing gear, this would merely add further difficulties in their effort to fish and to provide the needed protein from the sea for their people. Besides, as is well known, the living resources are concentrated mainly in the sea superjacent to the continental shelf, and consequently the catch is much better nearer the coast than far out into the open sea.

At this juncture, I would like to stress that the fact that developing landlocked states are not at the moment engaged in fishery, for various reasons I have mentioned earlier, is immaterial. The fact is that they would be deprived of valuable fishing grounds, if and when they do decide to engage in fishing. It is not without significance that the two landlocked states of Latin America have refused to associate themselves with the recent Montevideo and Lima Declarations. Both these Declarations proclaim the right of coastal states to explore, conserve and exploit the natural resources of the sea adjacent to their coasts, in order to promote the maximum development of their economies and to raise the level of living of their peoples. The Declarations also proclaim the right of these states to establish the limits of their maritime sovereignty or jurisdiction in accordance with reasonable criteria, having regard to the respective needs of these countries.

Let me illustrate these problems by specific reference to Singapore, which is, in the general sense, a coastal state. In view of its close proximity to its neighboring states, any general proposal to accord to coastal states an extensive economic zone would not benefit it in any way. On the contrary such a proposal will mean hardship for its fishermen, for they will be deprived of those fishing grounds where they have to date been legitimately conducting their fishing activities. Within the territorial and internal waters of Singapore there is very little fishing ground, considering the fact that the small amount of sea that Singapore has constitutes a strait used for international navigation. At present Singapore claims a three-mile territorial sea. Even if it wishes to claim more, it may extend its territorial sea by probably one more mile before the equidistance principle will apply. The main fishing grounds for the Singapore fishermen are in the southern region of the South China Sea. Most of the trawlers operate close to the outer limits of the territorial sea of neighboring states in that area. Some of the bigger fishing vessels operate as far as 1,000 miles from Singapore in the South China Sea as well as the Indian Ocean.

In 1971, the Singapore fishermen landed a total of about 15,300 metric tons of fish. Of these, only about 2,600 metric tons were caught within its territorial and internal waters. This means that about 83% of the fish caught by Singapore fishermen in 1971 were caught outside its territorial sea on the high seas. Even so the total catch by the Singapore fishermen is far from being sufficient for national consumption. In 1971, Singapore imported about 48,000 metric tons of fish and of these only a small proportion was re-exported. In terms of national consumption the imported fish represents about 70% of our total national fish consumption.

With regard to the fishing gear use by Singapore fishermen, most of them operate trawl nets or bottom long-lines and other even less sophisticated equipment. In short, the fishing industry in Singapore is still very much at the infant stage. It is only natural that Singapore should hope and endeavor to achieve self-sufficiency in the provision of adequate protein from the sea for its people. Towards this end, a few larger fishing companies have recently acquired mother-vessels which can store and partially process their catches and those of their catcher-vessels while at sea. At present there are only four such vessels having this capability and they are used mainly for the exploitation of shrimp.

Therefore, for Singapore, any proposal that would have the effect of restricting its fishermen to fish on the high seas outside the territorial sea of neighboring coastal states would, in my view, be against its national interests. Such would be the effect if the new law of the sea should accord to coastal states an exclusive economic zone of 200 miles or some lesser but nevertheless extensive area. In such an event a great number of the Singapore fishermen would be deprived of their traditional fishing grounds and Singapore could never hope to be able to produce fish sufficient for the consumption of its people.

### Lack of Understanding between Developing States

I have had the privilege of being a member of the Singapore delegation to every one of the meetings of the Seabed Committee since it was entrusted by the General Assembly of the UN to be the preparatory body for the Law of the Sea Conference in 1973. There has been some unfortunate misunderstanding by the delegations of developing coastal states of the problems of developing shelf-locked and landlocked states.

Admittedly, all developing countries are following a similar path towards the consolidation of their political independence, economic and social development and raising the standards of living of their populations. With regard to the law of the sea, each nation will, as a matter of course, endeavor to advance its national self-interests. To the extent that their interests meet, developing states will speak with one voice. But where their interests diverge, then each should articulate its view so that on the day of reckoning, a formulation can be found to accommodate the various shades of interests.

There have been suggestions that the interests of developing landlocked and shelf-locked states could and should best be accommodated on the regional level. Regional cooperation between developing states is highly desirable. But it would be naive to imagine that there could be worked out a satisfactory regional arrangement unless the broad rights and obligations of each state are clearly defined in a general law. The rights of developing landlocked and shelf-locked states to fish on the adjacent high seas off their coastal neighbors should not be left to the grace and goodwill of their coastal neighbors. Such a system, if adopted, would in my view negate the very object of a law of the sea which is the avoidance, as far as possible, of disputes arising from conflict of interests. I think reference to past negotiations between landlocked states and their coastal neighbors with regard to transit rights more than adequately indicates the problems. Lasting international peace and cooperation can only be established when the rights and obligations of states are equitably and clearly defined. I do not see how any government of a developing landlocked and shelf-locked state can reasonably leave such a matter of vital national interests to the grace and goodwill of its coastal neighbors, no matter how friendly.

### Suggested Fishery Schemes

How then may the fishing interests of developing landlocked and shelf-locked states be safeguarded in a general law of the sea? I do not think this group of states will object in principle to exclusive zones being accorded to coastal states provided their interests are adequately taken care of. If it is the general opinion of the coastal states that every coastal state should be accorded a fairly extensive exclusive economic zone, then I would suggest the following scheme to safeguard the interests of the developing landlocked and shelf-locked states:

1. Such a zone will not be closed to fishermen of landlocked and shelf-locked states of the same region. These fishermen should be free to fish in the zone, subject to such management and conservation measures as may be introduced by the coastal state;
2. As between these states, the coastal state would act as the custodian in accordance with the proposal by the Canadian delegation at the Seabed Committee. The coastal state would have the authority to manage the zone based on internationally agreed principles of management and conservation.

Such a scheme in my view serves the interests of *all* developing states. First, it would exclude the possibility of depletion of the living resources of a developing coastal state by distant-water fishing fleets. This is really the main concern of all developing coastal states. Second, the scheme has the advantage of accommodating at the same time the interests of the developing landlocked and shelf-locked states of the region. Third, the interests of both the coastal and the landlocked and shelf-locked states would be further enhanced by according to the coastal state the authority of management and conservation. For these reasons, I believe that such a scheme should prove acceptable to the developing coastal states.

Of course, there may be other fishery regimes, not involving the granting of extensive exclusive economic zone to coastal states, which may also adequately accommodate the interests of developing landlocked and shelf-locked states. Perhaps only preferential rights need be granted to coastal states in a fishery zone in respect to those special categories of stocks which have particular economic significance to the coastal states. In any event in such a preferential zone, the coastal states should also exercise the authority of management and conservation based on generally accepted principles. I need hardly repeat that an effective management system for the living resources of the sea is in the interests of *all* developing countries.

## CONCLUSION

Let me conclude this statement with a few brief

remarks. I do not think the developing landlocked and shelf-locked states are seeking for special treatment in the new law of the sea. What they seek to ensure is that their rights to an equitable share of the natural resources of the ocean as a member of the international community should be fairly safeguarded in any new law. The Declaration of Principles adopted by the UN that the seabed and ocean floor beyond the limits of national jurisdiction and the resources are the common heritage of mankind is equally applicable to the living resources of the sea. The present trend of some coastal states to unilaterally extend their fishery zone to cover wide expanse of the ocean is as regrettable as the activities of the enterprises of some advanced nations in conducting exploration and exploitation in the deep ocean floor for mineral resources. Such actions are prejudicial to the present efforts of the community of nations to try to arrive at an equitable solution and they render genuine negotiations that much more difficult if not impossible. Speaking as a national of a developing shelf-locked state, I do not think my government should accept unilateral claims over wide expanses of the sea. Speaking as a lawyer, I do not think such unilateral claims are necessarily valid. In this regard I need hardly do more than to quote the judgment of the International Court of Justice in the Anglo-Norwegian Fisheries case where the Court said the following:

> The delimitation of sea areas has always an international aspect; it cannot be dependent merely upon the will of the coastal State as expressed in its municipal law. Although it is true that the act of delimitation is necessarily a unilateral act, because only the coastal State is competent to undertake it, the vaillidity of the delimitation with regard to other States depends upon international law.

In this statement I have refrained from offering any suggestion as to whether the interests of the distant-water fishing states should be accommodated within a general scheme, and how they should be accommodated. Their point of view, I am sure, will be very ably presented by Mr. Iguchi, who will address you later.

## Interests of Developing Distant-water Fisheries

*Jae-Seung Woo, Chungang University, Seoul, Korea*

**Wednesday afternoon, June 28**

I am greatly honored to speak before such a distinguished gathering. The subject that I have before me is on the "Interests of Developing Distant-Water Fisheries." As I look at the topic, I immediately question myself:

What are the different interests and how are they interacting? What do we mean by a common heritage of mankind and what do we mean to do with it? In connection with these questions, some of the well known words are flickering in my mind. They are the following four different but very tricky concepts: equitable distribution, maximum utilization, maximum sustainable yield, and conservation.

These are the concepts which are the sources of greater complications. Initially, I was going to analyze these concepts in the light of national behavior patterns more fully, but the time allowed to me this afternoon does not permit me to take my free excursion. Therefore, I am going to deal immediately with the problems that the developing distant-water fishing states have to face through the process of building up the fishing fleets. Whatever I say here this afternoon does not represent in any way the views of the Government of Korea.

To begin, I would like to make it clear that Korea has shown a very keen interest in developing her distant-water fisheries during the last few years. Total catch of fish in 1971 has just passed the one-million ton level, even though the total catch of distant-water fisheries is only 150 thousand tons. But it will grow quite rapidly. The total number of vessels engaged in distant-water fishing is 350 and they have 15 over-

seas fishing bases. Distant-water fishing employs about 8,800 fishermen. Our Korean Ministry of Fishery considers the available fish resource to be still abundant; that is, in 1969 the total catch was only 63 million tons out of the total available resource of 169 million. It is an example of under-utilization of resource when that catch does not affect the maximum sustained yield. At the same time, the price of fish in the world market is rising. For tuna, for example, the average price per ton is 450 U.S. dollars in 1965 but has gone up to 1,244 U.S. dollars in 1971; that is the rise of 276 percent in just over five years. The Ministry has established, as an integral part of the Third National Five Year Economic Plan of 1972 to 1976, the target of bringing up the number of distant-water fishing vessels to the level which would enable her to achieve a greatly increased total catch.

But the recent trends, which originated to my mind with the famous Truman Declaration, to unilateral claims of coastal states over the extended exclusive fishery zones make us extremely concerned about the future of our distant-water fisheries. Therefore, we are strongly in favor of creating or establishing some kinds of international fishery regimes or of international systems of cooperation and management in fishery zones at an early date. We are certainly well aware of the fact that the various interests of different groups of states have to be accommodated and harmonized if the new arrangements are to be effective and stable.

The most important question is, of course, exactly what is the fishing ground beyond the limit of coastal states jurisdiction. How far is the territorial limit and how far can a coastal state expand the limit unilaterally? As we all know, as far as fishing right is concerned, the coastal state has the sovereign right within the limit of territorial waters, be it three miles or 12 miles. Therefore, the only problem is simply to decide how far the territorial sea should be, and it will be negotiated upon at the next United Nations Law of the Sea Conference hopefully in 1973. As I see it, international practices are centered around the 12-mile limit, and this might be agreed upon at the conference. But the real problem exists in how to decide a vast area of ocean for the purpose of fishing or of allocating other living resources which will be acceptable to all state parties concerned.

In order to see and analyze the overlapping fishing interests on the seas beyond national jurisdiction, we can divide the state parties concerned into four different categories according to their fishing interests and also to their level of economic and technological development. The first one is the developing coastal states, the second the developed coastal states, the third the developing distant-water fishing states, and the fourth the developed distant-water fishing states. Within a single country, like the United States or Canada, the interests of both coastal and distant-water fishing can be manifested at a different time.

But it seems to me that there is an international trend being recognized in some kind of expanded zone of fishery. Our Latin American friends named it "patrimonial seas" and claim exclusive rights of all the sea resources. On the other hand, the United States proposal is to adopt the "species approach" of stock-by-stock management rather than the zonal approach of the Latin American type. The stock-by-stock approach might require a certain limited zonal space, and the expanded fishery belt might not be necessary for a certain stock of fish, depending on the living patterns of a given fish. Therefore, I am inclined to propose that a combination of two approaches might be acceptable to all who would like to protect their interests. The fishing zone for a specific stock of fish not extending beyond the negotiable fishing belt can be established so as to give a coastal state the primary responsibility to manage the zone and a preferential right of allocation of the catch therefrom, but not an exclusive right. The zone must be managed in accordance with the international standards which are agreed upon within the framework of international fishery organization, which I will touch upon later.

The second important problem that the developing distant-water fishing states have to face through the process of building up the fishing fleets is that when these fleets wish to enter into some of the old, established fisheries, they are confronted with considerable opposition. Most of the international fisheries agreements do not usually provide for the entry of new parties, just as is the case with the system of national quotas.

The United States Draft proposal for stock-by-stock agreements does not expect to accommodate the interests of the new parties, but apparently excludes such entry. Besides, the United States is insisting that existing or future bilateral and multilateral fisheries agreements should expressly be recognized as valid between the parties.

However, if we are to have a genuine non-discriminatory international arrangement, it is imperative that the existing international fisheries agreements must open their doors to any states who are willing to participate. It is only fair to open the door; that is, to give a chance of participating in fishing activities under the rules and terms agreed or to be agreed upon between the state parties concerned. Otherwise, the notion of the freedom of the sea is a

dead notion and it only recognizes for some of the traditional fishing states the exercise of monopolistic and exclusive fishing rights over a specific stock of fish, or over a specific area on the high seas which is beyond the national jurisdiction. I do not argue about the fact that fishery zones can be extended more in an expanded manner, and that area can be regulated through the initiative of the coastal states, provided that these zones provide a room for the fishing states, existing or new, under the terms negotiated and agreed upon by the state parties concerned.

I am not suggesting here that we completely do away with the existing international bilateral or multilateral fishery agreements. What I am suggesting is that existing or future international arrangements should make provision that any new fishing states who are willing to invest in distant-water fisheries should be allowed to participate. In this sense, I would argue that there is not so-called absolute historical title or vested interests on the high seas beyond the limit of national jurisdiction. The idea that there is nothing sacred about the notion of historical title has become evident throughout the recent development of international arrangements even within the exclusive fishery zones of coastal states. The title is being phased out within a certain agreed time limit. If this is the case, I would venture to say that there is no absolute title to fishing which could exclude the new participants.

The problem occurs in case of anadromous stocks. Reconciliation of coastal and distant-water fishing interests should be achieved through negotiation between all the countries concerned, whether they are new, or traditional, or coastal. In addition, the coastal state in whose streams particular stocks of these species spawn should be allowed to regulate up to the extent that the substantial part of the migratory range of such stocks might be safeguarded so as to bring the equitable returns of actual investment. However, the above-mentioned reconciliation and the regulatory authority of the coastal states should be made on a standard formula to be agreed within the framework of general international fishery organization. And the arrangements thus formulated must be subject to review at such intervals as may be necessary and agreed upon among the members of the general international fishery organization.

Now, as I said earlier, the extended fishery zones of coastal states and their preferential rights to manage beyond the territorial limit can only be recognized if they do not exclude the distant-water fishing interests completely. In cases when the fishery resource is not fully utilized—that means when the coastal states do not have maximum capacity to catch —those coastal states would like to provide other means of catching them. They can either let the other fishing states participate in fishing within the area by requiring the payment of license fee or taxes, or can invite the developed states to make a joint venture in fishing industry. But I am afraid the results would be to place exclusive fishing rights not in the hands of the developing coastal states, but in the hands of the few developed fishing countries who could offer a joint investment, without obtaining fair return.

What I would suggest, therefore, is that the license fee be collected in order to defray the management cost on the basis of agreement within the framework of international or regional fishery organization. In cases when a joint investment operation takes place within the fishing zone of a coastal state, this should not exclude the possibility of other new distant-water fishing states participating, taking into account the needs and the interests of the developing states, whether coastal or distant-water fishing.

However, the concept of "capacity to catch" will be extremely difficult to apply without costly consequences. If, as in the United States proposal, the agreement can be reached in sharing in the benefits of fisheries in accordance with increased capacity of fishing fleet of the coastal or fishing state, the consequences would be an intensive competition and economically detrimental. This kind of arrangement would only lead the coastal states and, in turn, the distant-water fishing states to invest more rapidly in fishing vessels, so that they could increase their capacity to catch and, thereby, their share of the annual yield. The concept will only encourage the coastal states to seek the joint venture with a few highly developed countries, thus in fact recognizing the greater share for the developed countries. Another possibility is that fishing vessels of the developed countries would seek protection under the flag of convenience. Both mechanisms will only create a higher degree of dependence of the coastal state upon the investing developed states. At the same time, if the coastal states policy to increase capacity comes into direct or indirect conflict with the interests of developed countries, resistance will occur in terms of refusal to cooperate in technical assistance and the transfer of technology.

These resistances and pressures from the developed fishing countries take place in a wide range of varieties. They can refuse to cooperate in whatever manner that would help the developing distant-water fishing states to grow. Loans and aid for the development of fishing industry can immediately be reduced or even stopped completely. Fishing gears can be restricted for export to a certain specific fishing state.

They will not allow fishing bases or the right to call at the nearest port of a fishing zone if those ports are within their own jurisdiction. And even if the fishing bases or the calling rights are granted, they would impose all sorts of taxes and fees upon the fishing fleets of developing countries, creating an extra burden to bear.

We also observe the recent trends of the developed countries to establish regulations against pollution, either in terms of requiring fishing vessels to attach a necessary apparatus to stop pollution, or payment of insurance premium, or some combination of both. This is also an additional difficulty for the developing countries to bear individually. What I would suggest, therefore, is that an international fishery organization can work out a standard formula which could reduce the burden of developing fishing fleets, taking into consideration that pollution can hardly be the making of developing shipping fleets, but is rather the consequence of industrial development.

Thus far I have been pointing out problems that the developing distant-water fishing states have to face and ways to harmonize them as I see it as a student of international law from a developing country. It has been clear, I hope by now, what the major difficulties to overcome are if a state is to build new fishing fleets. In a few instances, I have pointed out that I put my hope of international fishing regimes and their management to a new standing international or regional fishery organization. In view of the fact that the fishery resources are enormous assets to mankind, I think this deserves the attention of the "World Fishery's Congress." The creation of such an organization would insure that disputes over fishing among the member states can be peacefully settled through the mechanism of arbitration and control which is agreed upon. The purpose of the organization is not only for the establishment of more equitable regimes and reviewing annual allocation of international fishing activities, but also for the efficient management of the wealth of mankind. In order to achieve these goals, the organization should, inter alia, coordinate the activities of different international organizations concerned with the maritime environment, and conduct the necessary scientific researches regarding fisheries and other living resources of the high seas. The study of the population of fishes should include research on the abundance, biometry and ecology of the fishes, oceanography of their environment, and the effects of natural and human factors upon their abundance.

Now I certainly hope that the International Fishery Organization can grasp the real needs and interests of the developing countries when they speak about the principle of non-discrimination, equality, or equitable distribution. In specific cases, we know very well that it does not mean the same thing to everyone.

I would agree that this is highly subjective and is a problem of social value and of philosophy. Highly individualistic and capitalistic social value would tend to have the concept of non-discrimination very narrowly interpreted. They would maintain that the principle of non-discrimination means equal opportunity to pursue national well-being irrespective of the given conditions, socio-cultural environment, and the rules of the game at a particular time. If these givens are not equal, historically or otherwise, this notion of non-discrimination becomes a political ideology, which only rationalizes and therefore protects a certain particular interest.

To my mind, equality means not only equal opportunity to realize national goals, but also equality for the postnatal capacity and capability to achieve them, and ultimately it means bringing up the different nations to a much higher and equal level of national fulfillment.

If we are to be faithful to this definition of the notion of non-discrimination, it is quite natural for us to take into consideration the special and preferential interests and needs of the developing countries in fishing, whether coastal or distant-water fishing states, and to take into account the contribution of fishing industry to the national economic development of the developing countries.

# A View of a Distant-water Fishing State—Japan

*Takeo Iguchi, First Secretary, Permanent Mission of Japan to the United Nations*

**Wednesday afternoon, June 28**

Fisheries have been traditionally one of the most important industries for Japan. As it is a small country with limited agricultural potential, fish have for centuries been an indispensable source of food for its large population; and presently fish and fish products provide well over half of the total animal protein supplies available, including the consumption of whales which amounts to nine percent of animal protein supplied. In 1970, the total catch of fish by Japan exceeded a little over nine million tons. The high rate of human consumption of fish and also the high percentage of protein intake accounted for by fish is inevitable because of deficiencies in the supply of alternative sources of protein from domestic animal and dairy products. The long-standing dependence on fish as an important source of food is indeed so firmly established in our dietary habits that it cannot easily be changed, and therefore the importance of fisheries to my country will not diminish, despite our overall economic development. Statistics show that the increase in living standard is accompanied by an increase in demand for fish, particularly for high quality fish. Therefore, it is our hope that the world would continue to produce and reproduce increasing amounts of fish and marine products for our nutrition, and we believe that Japan's experience and technology could play an important role in this respect.

We agree that an era of unrestricted right to fish on the high seas is over. Such freedom was possible when the sea was a symbol of infinity and the marine resources were regarded as inexhaustible in relation to man's capacity to fish. The problems which the international community now faces in regard to the regulation of fisheries on the high seas have been debated from various angles by many officials and experts, but they often reflected the national positions and interests of their own countries. However, we must also strive to attain an equitable accommodation and compromise of the interests of all states, both coastal and distant-water fishing states, developing and developed states.

What I wish to point out is that the fear of depletion of fish stocks may be exaggerated without sufficient scientific evidence, and that psychology was clearly demonstrated in the case of the recent moratorium resolution for a ten-year ban on commercial whaling which we opposed. It is notable that in recent years the world total catch of fish has been increasing at a rate unknown in the past. Thus, it has increased from 33.2 million tons in 1958 to 69.3 million tons in 1970; that is to say the world's total catch more than doubled over a decade. There are reasons to believe that this trend of increase will continue in the future. Of course, the overall increase in the world's total catch has been made possible, to a great extent, by the discovery of unexploited fishing grounds and the development of new and more efficient fishing techniques. Japan would very much like to contribute in this field. The discovery of unexploited fishing grounds should be further encouraged.

But we also acknowledge that the large increase in catch has been achieved, not as a result of unregulated competition among participants, but in large measure, if not in all cases, it has been accompanied by the necessary restraints and cooperation on the part of individual participants for the purpose of conservation and prudent utilization of fishery resources. It has been one of the important fishery policy aims in my country to lay emphasis on the protection of marine living resources not only in the coastal waters but in other parts of the high seas as well. When a stock of fish is in danger of depletion, no state should disregard the general obligation to cooperate with the other states concerned to restrain their fishing activities at an appropriate level. To achieve this objective, fishing activities conducted by Japanese nationals on the high seas are regulated in accordance with the relevant domestic legislation. Thus, even in the absence of an international convention for conservation, our nationals engaged in fishing in the high seas are under domestic law subject to governmental supervision for rational utilization and effective conservation of the living resources of the high seas. But uncoordinated efforts by individual countries are clearly not sufficient.

On the other hand, we also do not share the view that the question of conservation could be dealt with by the simple method of extending the jurisdiction of coastal states dozen of miles, or even hundreds of miles, off their coast. The biological characteristics of fishery resources are such that they make inter-

national cooperation essential to achieve the objective of conservation. No conservation program could be effective if it were applied unilaterally, in isolation, to limited areas off the coast of a single state.

It is our considered view that existing international or regional fishery commissions have played a vital role in the conservation and management of fishery resources harmonizing the interests of distant-water fisheries and non-distant-water fisheries and taking into account the biological and other characteristics of the individual circumstances. There are at present 22 fishery commissions responsible for the conservation and management of fisheries. These fishery commissions have come to cover practically all important waters of the world and practically all fish stocks which are caught by different nationals and therefore call for international regulation.

Of the 22 existing fishery commissions, Japan is at present a member of 12, the U.S. 11, Canada and the USSR eight respectively. These are the principal examples. It has been the consistent position of the Japanese Government to support international activities for the rational utilization and effective conservation of the living resources of the sea; and, in accordance with that position, Japan has pursued a policy of international cooperation through international fishery commissions as well as through the FAO and its subsidiary bodies.

Fishery commissions have played an important role and provided forums in which fishing activities of countries concerned can be coordinated in a practical manner. On the other hand, as was pointed out by some governments, the existing fishery commissions do suffer from certain weaknesses in ensuring effective conservation measures. For example, not all countries participating in fishery are necessarily members of the commission. But this problem can be overcome, in the view of my delegation, by requiring all countries participating in the fishery to become members of the commission, or at least to take the necessary steps in conformity with the conservation measures adopted by the commission.

We must admit that, in the future, the fishery commissions have to take into account the potential need and capacity of developing countries' fisheries. We should take note of the requests of developing distant-water fishing states, such as the Republic of Korea.

Further, it has been said that regulations have often been too little and too late because acceptance of scientific evaluations is difficult to obtain. This problem is derived partly from the desire to agree on measures based on complete scientific data. We believe that the ineffectiveness in the work of the commissions in this regard can be improved upon by incorporating in the general principles of conservation a principle to the effect that conservation measures must be adopted on the basis of the best evidence available, and that no state may be exempted from the obligation to take conservation measures on the ground that sufficient scientific findings are lacking.

Recently, for example, in the Seabed Committee of the United Nations, the interests of certain coastal states seem to be regarded as sacrosanct, whether they intend to utilize the marine living resources for their full benefit or not. We wish to point out that if the coastal state has special interests and responsibility with respect to coastal species, Japan considers that, equally, distant-water fishing states also have interests and responsibility with respect to them. If coastal species have a close relationship with the adjacent land, it must also be said that they have a relationship not only with the land but also with the entire ecosystem of the seas of which they form a part. If the coastal state is dependent economically on fishing coastal species, we must point out that, equally, distant-water fishing states also have necessary economic dependence upon them. I have emphasized earlier Japan's own special dependence on fish and fish products caught in the coastal as well as in distant waters as an important source of food. I believe that other countries also have their special concerns, each different from the other. Disagreements or dissatisfaction are bound to arise, only naturally, among participants over allocations or shares of resources when there are two or more participants which are engaged in fishing for common but limited resources. But, despite these problems, fishery commissions again have provided appropriate forums in which, so far, all participating members have somehow managed to arrive at reasonable solutions in the end, guided in most cases by rationality, wisdom and the spirit of compromise.

We have said so far that international and regional fishery commissions provide, in principle, appropriate forums for conservation of resources and their rational utilization. We have also said that to make more satisfactory the functions and operations of the commissions, there is a need to strengthen and supplement certain aspects of their work. To this end, we consider that certain rules and principles can usefully be established. Moreover, such rules and principles can serve as basic guidelines in fishery negotiations among states in the event that there is no such commission. In this connection I have already referred to some aspects of the problem re-

lated to conservation. I should now like to turn my attention to another aspect of the problem.

While expressing our readiness to support the international agreement on the maximum permissible breadth of the territorial sea at 12 miles, in the Seabed Committee of the United Nations, Japan suggested at the meeting last summer the line of approach that might properly and reasonably be taken to tackle the very complex and difficult problem of fisheries in the areas of the high seas adjacent to the limit of 12 miles, in order to bring about an equitable accommodation of diverse interests. My delegation stated that the concept of "protection" has no place in the present legal regime concerning fisheries. And yet, we must recognize that the infant coastal fisheries, particularly of developing countries, are seldom in a position to compete on equal terms with the distant-water fisheries of developed countries. We therefore consider that it is amply justifiable to recognize, as a general principle, that developing coastal states will be entitled, in the waters adjacent to the 12 mile limit from the coast, to preferential fishing rights which will ensure them an allocation of resources in terms of the maximum annual catch that is attainable on the basis of their individual fishing capacity. We share the view of our Korean representative who expressly favored the preferential rights of coastal states as against the exclusive economic zone.

Now as regards coastal states which are developed countries, these countries usually possess the necessary financial and technological means of making internal adjustments, including the modernization of their fishing fleets. In such cases, special protection might even encourage overinvestment in inefficient fishing industries with the result of having to impose unjustifiable sacrifices on the legitimate interests of distant-water fishing states. My government in general shares this view. However, it must be recognized that coastal fisheries conducted on a small scale, mostly by small fishing vessels, are of such nature and characteristics that they are not amenable to adjustment and are vulnerable to competition from outside, and therefore need protection. Under these circumstances, my authorities consider that preferential fishing rights should be recognized for developed coastal states in terms of the minimum annual catch required for the continued operation on the existing scale of clearly and precisely defined small-scale coastal fisheries.

In conclusion, I wish to stress that the international community cannot, and should not, afford to provide itself with any simplified solution to the complex problem of fisheries, simplified in the sense that a limited number of states with long coastlines and a further limited number of states having the privilege of being adjacent to rich fishing grounds benefit from exclusive and monopolistic enjoyment of marine living resources in the vast areas of the high seas. The interests of other states, especially those which heavily depend upon fisheries, or which have little or no coastline at all, or which fare unfavorably with regard to access to rich fishing grounds or which have the potentiality of distant-water fisheries as a part of their economic development program, must also be respected and duly taken into account.

Many countries in the developing world, especially in Asia and Africa, are dependent on fish for food. It seems that those people whose staple is rice consume high amounts of fish. These countries are in fact making efforts to expand their fisheries and some of them already have successfully developed them for fishing in distant waters. Japan is one of the leading nations in offering technical assistance for developing fisheries. We receive trainees from Peru, India, Ceylon, Nigeria and many other developing fishing states and have established Southeast Asia Fishery Centers in Thailand and Singapore for distant-water fishing. The distinguished representative of the Republic of Korea has already explained the development of the Korean fishing industry. It is surely not consistent with the interests of these developing distant-water states that they should be made subject to the will of the coastal state for their continuation of fishing as their fishing capacity grows. Underutilization of resources should not be a popular measure when the world population is growing fast and the demand for fish is rising.

The fishery resources of the world are distributed in a highly uneven manner as I have pointed out and, as a result, large and lucrative fishing grounds are to be found only in waters off the coasts of a rather limited number of countries. I would not accept the contention of the privileged developing countries who claim that they fully represent the interest of the whole developing countries, which is not true. In view of such characteristics of fishery resources, the protection of coastal fisheries by means of exclusive fishery zones would in fact result in granting a few countries the right to monopolize the major fishing grounds and depriving the rest of the world, including most of the developing countries, of opportunities to fish except in areas off their own coast when they are planning to build up their fishing fleet for off-shore and distant-water fishing. The rules we are going to formulate should not attempt, as it were, to create artificial boundaries of national jurisdiction which fish will ignore in any case and which will

only serve the interests of a few privileged states. The new regime must provide the small-scale fisheries of developing coastal states with adequate protection, but they should at the same time be of such a character as to accommodate in an equitable manner the interests of all nations that are entitled to the right to utilize the living resources of the high seas—the right to be enjoyed by all members of the international community. The freedom of fishing must be modified in order to protect and promote the interests of those who have been unable to share in an equitable manner the benefit of the rich resources the sea offers to mankind. Joint venture between developed and developing countries could be further promoted to the mutual benefit. Coastal states should bear in mind that with the increase in catch the increase in exports of fish should follow and Japan is a huge market for fish and fish products. With the spirit of compromise and cooperation, I hope that we will be able to formulate new rules, the absence of which has been a source of bitterness and confusion felt by so many nations with respect to the existing legal order of the sea. We should not undermine the profitable opportunity for economic cooperation between the developed distant-water fishing states and the developing coastal states by undue emphasis on rigid jurisdictional approach which ignores economic reality.

The world must endeavor to accommodate in an equitable manner diverse interests of states—developing and developed, coastal and distant-water states—on the basis of international cooperation and in principle within the framework of international fishery commissions.

## Discussion

**Wednesday afternoon, June 28**

*HERRINGTON:* There has been talk of a voting bloc of landlocked and shelf-locked states at the coming conference. There was similar talk in 1958 and 1960, yet such states generally voted with their neighbors in showdown votes. Do you think there will be such a bloc in the next conference, or will the 1958 and 1960 experience be repeated?

*CHAO:* I am afraid that is a difficult question to answer; it involves a certain degree of speculation, but this much I can say. As I have stated, there are a total of 21 landlocked states in the developing world, and there probably might be another half a dozen or more shelf-locked states.

I think the condition now, and the condition in 1958 and 1960, is probably different. The developing landlocked and shelf-locked states are now better aware of their interests on the questions of law of the sea, and of their stakes in these questions. I should imagine that their voting in the forthcoming conference would be determined by their national interests.

Now, in this regard it might be of relevance if I mention the fact that in the Seabed Committee we have an informal landlocked and shelf-locked group. This group at the present moment has a flexible membership of about 18 members. However, these 18 members are not all developing, as a number of them are developed countries like Belgium and the Netherlands. Nevertheless, we work together as a group to find certain common solutions to common problems.

With regard to regional arrangements, I believe, for the reasons which I set out in my paper, that regional arrangements are workable only if the broad rights and obligations of states are clearly defined. This is because I do not think states should bargain from a position of weakness, but at least they should bargain from a position of equality.

In this regard, I must mention that in the Seabed Committee itself, the representation of landlocked states is unfortunately very ill-proportioned. The membership of the Seabed Committee is 91, which means that approximately three out of every four UN members are members of the Seabed Committee. But of the developing landlocked states, I can only re-

call five members who are members of the Seabed Committee. Those are Nepal, Afghanistan, Bolivia, Mali, and Zambia.

Nevertheless, this is not without significance. At least this shows a start that they are slowly realizing their interests and needs in the law of the sea.

*DE SOTO:* I found very interesting Mr. Chao's earlier remarks about the alliance between landlocked and shelf-locked states without distinction of whether they are developed or developing countries, and I found specifically interesting what he said about the Latin American developing landlocked states' apparent refusal to back the Montevideo and Lima Declarations.

They could not very well back them. They could not very well back the Montevideo Declaration because they were not at Montevideo. It was a meeting of countries with jurisdictions of 200 miles.

The Lima Declaration, on the other hand, referred to coastal states' rights; it did not attempt to tackle the problems of landlocked states. These are the reasons why supporting those Declarations was irrelevant.

Now, regarding the general philosophy behind this alliance, I have always found it somewhat baffling. Mr. Chao has managed to speak on behalf of both landlocked and shelf-locked states. I am not sure exactly where the affinities are.

There was someone a few days ago who said that he found the whole concept of shelf-locked states was an abomination. I don't agree with that at all; I think he is wrong. I think there is such a thing. I am not sure what it is, but in good faith I do believe it does exist, and that they do have special problems of their own. Now, what I do not manage to realize is exactly where the affinities lie between shelf-locked and landlocked states. And, at any rate, I do not see where the foundation for a political alliance lies.

I believe we were talking about fisheries today. But I thought that the main foundation for such an affinity was because neither the shelf-locked nor the landlocked states had any possibility of direct access to the seabed beyond the continental shelf. I believe that was the original foundation. Now if we look at it strictly in that light, I believe that there is far more affinity between a shelfless state, a state with a very short shelf, such as Peru or Chile or Ecuador, or most of the states bordering on the Pacific, and a landlocked state such as Bolivia. We have in common the fact that we do not have shelves, or we virtually do not have shelves to speak of.

In comparison with shelf-locked states, I find that these seem to be in a gilded cage. "Shelf-locked": locked by shelves. That is a gilded cage; we do not have the wealth that is contained in shelves.

Now, I believe that Bolivia realizes this, and I think she realized it at the hour of truth in 1958 and 1960, as was pointed out by Mr. Herrington. And I am sure that my friend Mr. Chao does not believe that he will manage to drive a wedge in the very good relationship and rapport that we have with Bolivia, with whom we have transit agreements, and I think that Bolivia realizes this also. Peru is Bolivia's backyard, and when Bolivia wants to speak of "access to the sea" she is thinking of the Pacific. She is not thinking of the North Sea, nor is she thinking of passage through the Strait of Malacca. I think you will agree with me.

What I wanted to say, in sum, is that though I find it is possible to identify distinctly certain specific problems that states have, you could probably make a list of problems as long as the list of states who are members of the United Nations or of the international community. But I think that it is not exactly leading us toward the light to identify somewhat artificial blocs. I do not think that alliances such as these will have a durable effect.

*CHAO:* Let me assure Mr. deSoto, with whom I have been associated for the past two years, that it is not my intention to drive a wedge between the Latin American countries. The intention of my statement is to focus differences of interest of the various developing countries, different because of their geographical situations.

Mr. deSoto asked me what is the affinity between the shelf-locked state and a landlocked state. Since I am from Singapore, a shelf-locked state, let me draw the parallel affinity between Singapore and, for example, Bolivia. Now you may scoff at the idea; where is there any affinity at all, because Singapore is such a bustling port, with all the ships coming to and fro, while there are no ships coming into Bolivia? Admittedly that is so. That is the main difference between Singapore and Bolivia. We have a channel to the outer sea.

Our common interest with Bolivia, essentially, lies in the mineral resources and the living resources of the sea. Let us first take the case of mineral resources. As I have demonstrated in my paper, we have only four miles of water to claim, even if we wanted to extend the territorial sea. Within that four miles, almost a major part of it has been taken up as sea lanes, and as far as we know there are no minerals within our seabed. If there are any, we don't know about them. The fact therefore is that Singapore would not be able to benefit in any way

under any general law which accords to the coastal states extensive jurisdiction over the seabed area and its mineral resources. Now, in that sense we share a common interest with Bolivia, to ensure that the widest possible area of the seabed of the oceans comes under the common heritage of mankind.

Turning to the point regarding marine resources, the same argument applies. As I have said, we have no fishing grounds—or rather, we have extremely limited fishing grounds in Singapore. I have already given you the figures; something like over 80 percent of Singapore's fish catches are caught outside our territorial waters. Any scheme to extend exclusive economic zones of coastal states beyond the territorial sea limit of 12 miles would certainly cause considerable hardship to the fishermen of Singapore. Very much the same position would apply if we look at Bolivia. Of course, as I have stated earlier, Bolivia is not probably at present engaged in fishing, but that is not the point. I mean, their right is there, under the present law, and if we want to change the law, we have to make sure that their rights under existing law are preserved. Whether they fish or they do not fish is an option which should be left open to them.

Inasmuch as many developing coastal countries today would like to have exclusive economic zones for one reason—to keep their options open, especially in regard to those coastal states which are not at the moment engaged fully in fisheries—in the same way the developing landlocked countries would also like to have their rights preserved to keep their options open, in case their national development should move in a direction which would require that they involve themselves in fishing.

*REBAGLIATI:* I would like to make a brief comment on the very good speech that was given by Dr. Schram. At the end of his speech he referred to a possible compromise; namely one that would consist of setting a maximum limit up to 200 miles that would be applicable both to the continental shelf or the seabed, and to the water column of the superjacent waters. I would like to point out that this compromise, with all due respect, would not be able to meet all interests involved in this question.

According to existing international law, both conventional and customary international law, states have sovereign rights over the continental shelf following the 200-meter depth criterion, and according to the Geneva Convention, to the extent of their exploitability. That means to the distance to which the exploitation of the continental shelf or the seabed is feasible.

The International Court of Justice, in the North Sea Continental Shelf Case, has recognized that the Articles 1, 2 and 3 of the Continental Shelf Convention of Geneva, 1958, are not only conventional provisions, but also have the virtue of customary law, and the International Court of Justice, besides, also said that states have sovereign rights over the Continental Shelf because it is the natural prolongation of their territories and follows the same kind of sovereignty that territories have.

Now, the problem is that according to a principle very well recognized recently, there is an international area of the seabed beyond national jurisdiction that is the common heritage of mankind. How we could compromise this principle with the principle that states have sovereignty up to the extent of the feasibility of exploitation; that is the requirement.

There are some other states—and this is the second problem for a geographical definition of the continental shelf rights—as Mr. Alvaro deSoto recently pointed out, that really don't have, geographically or geomorphologically speaking, continental shelves, because their shelves fall into the depths at a very few miles out to sea.

So if we adopt a geomorphological criteria, under that criteria those states will not have an important continental shelf recognized by the law.

The compromise, according to some views which were expressed both within the regional American Declarations and also within the forum of the United Nations, not only by the Latin American peoples, but by other states such as Australia and New Zealand, Canada, et cetera, would be to adopt a combination of criteria. That is to say, the 200-mile criterion would be complemented by some other criterion recognized in those states which have continental shelves broader than 200 miles, by which they will keep that sovereignty to the extent of the outer limit of their continental margin.

By this compromise, states which do not have a geographical continental shelf will still have the 200-mile legal continental shelf, and states which do have more than 200 miles of continental shelf and for which existing law recognizes their sovereignty over that area, will still hold that area. This is mainly because it is rather difficult and unsatisfactory to meet the very difficult problem, which is to link two geographical areas which are rather different. One area is the ocean space which consists of the water column and the superjacent waters; and the other ocean space is the continental shelf. It is rather difficult to try to compromise by linking both and trying to give to both problems the same solution.

So the compromise according to this view that I

am trying to reflect now is to adopt an alternative criterion which could meet both needs, those of shelf-less states and broad continental shelf states. That does not imply any consequence on the superjacent waters and in the water column. This view supports the idea that the regime for those superjacent waters and water column should be according to the different features of that ocean space, and the solution for that ocean space is going to be rather different, perhaps, than the solution for the continental shelf.

*SCHRAM:* I would like to point out that the 200 miles I referred to at the end of my paper were not necessarily my personal preference. I was simply stating what has been put forth by a number of countries in the UN Seabed Committee, and in other places.

I realize the particular circumstances which the last speaker referred to; the proposal he discussed would take care of those geographical and morphological considerations. I am not really prepared at this moment to comment especially upon that.

*FERRERO:* The subjects that are being discussed here are very broad, and several remarks can be made about them.

I am sure that the people present here will make many important comments. That is why I only want to express two of them.

The first one is related to the validity that has been attempted to be given to the Geneva Conventions as a basic source of the international law of the sea. With great respect to my colleague from Singapore, I can not accept that position. I do not wish to begin a large dissertation about what we understand by "sources" of international law.

However, very briefly I must say that the two main sources, as we all know, are treaties and custom. Regarding treaties it is generally agreed that treaties have binding force only among those states that are parties to the treaty. With reference to the Geneva Conventions, they are only binding on one-third or less of the countries of the world, because only one-third of those countries are parties to those Conventions. And among the two-thirds that are not parties are the two most populated countries in the world, Mainland China and India.

Thus, among 141 states that today constitute international society, up to June 1971 only 41 states are parties to the Convention on the Territorial Sea and the Contiguous Zone, 48 states are parties to the Convention on the high seas, 32 states are parties to the Convention on Fishing and Conservation of the living resources of the high seas and 47 states are parties to the Convention on the Continental Shelf.

Also, I would like to say that among the 86 states that participated in the Geneva Conference of 1958, only around one-half of them or even less are parties today to the Geneva Conventions. Therefore, even at the moment of the Geneva Conference, there was no general agreement between states on many aspects of the law of the sea.

Therefore, when we speak of treaties as a source of international law, we can not say so easily that the present regime is based on the Geneva Conventions on the Law of the Sea.

Also, it is very difficult to accept that the limits of the territorial sea as three or 12 miles are based on the concept of international custom. As we all know, there are many definitions about international custom; I will just mention the one that is given in Article 38 of the Statute of the International Court of Justice, which is recognized as a valid and very important definition. This article speaks of international custom as "evidence of a general practice accepted as law" by the states.

Furthermore, there are two elements in custom: (a) The material element or general practice that must be observed by the majority of the states in the world, in the same way and during a certain period of time, and (b) The subjective element known as the *opinio juris sive necessitatis*, which means that the states that observe a certain practice must act in such a way that they are accepting such practice as law.

It is important to stress that this is the traditional concept of international custom established throughout history by the European powers and the western civilization. However, for some socialist countries and several newly independent states, custom is a form of tacit agreement which is binding only on those states which have accepted it by its explicit consent.

I really think, and even more I am convinced, that under the traditional and European concept of general international custom, the limit of the territorial sea fixed either on three or 12 miles does not constitute international custom. Indeed, in this case the material and subjective elements of custom already mentioned are not present.

Without making reference to many examples and to the national legislation of several countries, I would like to mention that at the Codification Conference held at La Hague in 1930, the states participants were not able to reach an agreement on the limit of the territorial sea. The same happened at the Geneva Conferences of 1958 and 1960. Thus,

we cannot speak of evidence of a general practice accepted as law by the states.

Here we have a clear proof that there was no general rule of international custom on this matter. I don't want to go into more details; I think that it is a legal discussion and I might be directing the attention of this panel to other aspects which may not be of present importance.

Furthermore, I would like to recall that international custom is a concept that changes according to different realities and to the different practices of states, and according to the differing conditions of a world which is in transition and in a process of change.

So we must not make the mistake of basing our thinking on international custom so easily.

What I would like to suggest to my colleague from Singapore is that there are no rules of general international law in many aspects of the law of the sea. And this position is even in favor of his own interests.

My second comment, also without going into many other details, is that I think that the audience here maybe is going to misinterpret what is happening in the world, not only in the developing countries. Many comments have been made on the differences among developing countries. Of course there are some different interests and some different positions between the developing countries, as there are different interests and different positions between the developed countries.

However, also there are many very important necessities and interests in common between the developing countries; there are possibilities of accommodation between them; there are possibilities of making regional agreements according to the regions, trying to fit the necessities and interests of the landlocked countries; as my colleague from Singapore has said. But the main concern, the main problem is developing countries' needs and interests against the needs and interests of the developed countries. That is the main problem in today's real world, and I am sure that our colleagues from the developing countries will agree with that.

So let us not permit that somebody may think that the main idea is the confrontation between developing countries. On the contrary, let us not forget that our main concern, which becomes more and more clear each day, is the problems between developing and developed countries; and our main concern among the words we have heard in this panel may be for example this very nice offer of serving the world through Japanese fisheries made by our colleague from Japan.

*WOO:* As I was listening to the question which was raised by our colleague from Peru, I have a feeling that I would like to agree with him except that there are certain points where the difference of opinion and difference of attitudes and interests might exist among the developing countries. Even though I do agree that a great confrontation is between the North and the South, that does not necessarily mean that the Third World is united.

*IGUCHI:* I think the distinguished Professor from Lima did not elaborate, and I can not understand his argument. But if I may so, I think each country really has its own position, and even among the developing coastal states which are adjacent to each other, they have different interests which they might have to adjust.

Certainly, between the coastal states on one side and the landlocked and shelf-locked countries on the other, they have different interests. Also, there are some developing countries who are developing their distant-water fishing capacities, whereas some of the so-called developed countries do not have such distant-water fishing capacities.

I think that also, between the developed and developing, there are certain gray areas. I would fully understand the argument based on their national interests, but when that would be expanded in a logical way to say that they are speaking on behalf of all developing countries in developing versus developed, this is an essential point; I think this is too abstract to be convincing.

*ROYCE:* William Royce, from the National Marine Fisheries Service of the United States.

As we look at the broad general mandate of this session, the accommodation of major interests, I think we have tended to lose sight a bit of the major conflict in our fisheries between coastal and distant-water fishing. This is a very ancient conflict, going back several thousand years, and it is becoming more and more acute as we develop the ability to fish farther from port.

It is my view, and I would invite the comments of some of the panel members on this, that some of the restraints on distant-water fishing probably make some of our legal arguments and opportunities moot, or at least in part moot.

I would like to emphasize again the very different social, financial and political arrangements in the coastal fisheries as opposed to the distant-water fisheries, and make especially clear the point that those countries which now lack a seafaring tradition and people accustomed to going far from home on board

small fishing vessels are probably going to have an impossible task to participate in distant-water fishing.

I would note further that very few people are employed on distant-water fishing vessels; on the catcher vessels, it is probably a maximum of about 30 per vessel, on the combined catching and processing vessels it is probably a maximum of about 125 or so. These are especially capital-intensive ventures, requiring an investment on the order of $20,000-$40,000 per man in a distant-water fishing vessel.

The operation requires some highly sophisticated managerial capability, and seafaring capability, and any country beginning a venture in this area must expect an expensive learning period. Let us note again that some countries have found this to be a permanent expense, if we observe the continuing subsidies that some distant-water fishing vessels receive from their governments.

I think that these considerations alone mean that the opportunities for landlocked countries and coastal countries lacking a seafaring tradition to participate in distant-water fishing are probably very small indeed.

*KASAHARA:* Compared with problems of seabed mineral resource exploitation, fishery problems have a number of unique characteristics. One of these is the question of coastal versus maritime or distant-water nations. I think we are very often confusing the question of coastal fisheries versus distant-water fisheries with the question of coastal fishing states and distant-water fishing states.

Some of the distant-water fishing states, the most remarkable example of which being Japan, have a wide variety of inshore, coastal and nearby-water fisheries, and the governments provide, under their domestic regulations, a tremendous amount of protection to these fisheries against offshore fishing by vessels of the same country. In some other nations, too, there are different segments of the fishing industry; some of them are very coastal, like most of the salmon fisheries in the United States, and some of them are very distant-water types, like the tuna fisheries of the same country.

So I don't think we should confuse the question of coastal fishing states versus distant-water fishing states with the question of coastal fisheries versus distant-water fisheries. These are two different questions, and even within the same country which is classified as a distant-water fishing nation, there are plenty of measures taken for the protection of their own coastal fisheries.

*WALLACE:* I suppose I should start, if I may make a quick comment, by saying how much I agreed with so much of what Dr. Schram said. It does seem to me that the argument that accidental geological advantages in fisheries should be the common heritage of mankind when they are close to a state, relatively speaking, whereas accidental geological advantages in terms of oil, for instance, are the property of the coastal state, is a position which is rather utopian to hold.

It seems to me that except on the most global utopian grounds, we are being highly unrealistic in expecting coastal states to yield what is for them an advantage as real as discovering oil in your territory or coal, copper or anything else. That is by nature of a comment.

A quick further comment which I hope will make a question, particularly to Mr. Iguchi; it does seem to me that it is impossible, or highly unlikely, that we will be able to accommodate these major interests at the global level.

If I were to hazard a guess as to what the most likely developments therefore are going to be, certainly in the North Atlantic and in the North Sea, and judging from some of the Nigerian speaker's comments this morning about the possibilities in Africa, we are going to see a development at the regional level.

Within certainly an enlarged European community, if Norway and Denmark join, we have the possibilities for inspection, enforcement and, because the European community has substantial funds of its own, compensation for loss of revenues from fisheries when conservation measures are taken.

It seems therefore very likely within the next five to ten years that the North Sea and possibly a larger area will adopt some sort of regional regime which will have within it the possibility of compensating to a degree the shelf-locked and landlocked states, and will also have the not-inconsiderable advantage, from the Europeans' point of view, of excluding more distant-water fisheries.

I would therefore have thought it more realistic from a British point of view to say that distant-water fisheries beyond a regional level are probably, in the long run, on the losing side, and I would like to hear Mr. Iguchi's comments on that.

*IGUCHI:* Well, we support the regional fisheries commissions, and we are also members of a number of regional fisheries commissions and regional agreements.

But when the speaker says that it should always exclude the distant-water fisheries, I do not know

on what basis he is saying that, because even the European Economic Community—though it was to consolidate their unity and economic integration—on a number of occasions has said that they would reduce the general incidence of various barriers, and their integration would also benefit the global economic development.

Also, I think, in the case of Norway (although in the name of regional cooperation, Norway wants special protection), again, if one looks into certain schemes of regional cooperation, I don't know whether he is right in saying that these should exclude distant-water fisheries and that regional cooperation without other regions coming in is always beneficial to the members of that region.

Again, I do not know what he means by his idea of the distant areas which would be covered by these regional agreements.

Furthermore, fish are highly migratory, and they go from one region to another. In fact, I would have thought—and I think I am right—that the European Economic Community is not intending to be exclusive; it tries to incorporate integration within, but also to promote cooperation with other areas.

*DEBERGH:* I have two remarks to make, and the first concerns what was said here before me by the gentleman from Peru concerning the validity of the Conventions of 1958.

It is true that the Conventions of 1958 are only binding between the parties, but on the other hand, for a large part, these Conventions seem to me to be of a declarative character. In this sense, if you take for instance the Convention on the High Seas, that Convention only codified pre-existing law. The same is true for the Convention on the Territorial Sea, with the exception of course of the question concerning breadth on which there are diverging opinions. Certain countries keep to a maximum of 12 miles, others take 200 miles. In our opinion, when you take 200 miles territorial sea, that runs counter to the very idea of the territorial sea itself.

As far as the Convention on the Continental Shelf is concerned, the International Court of Justice observed very rightly that the main provisions of that Convention are customary law. So really, I don't understand the remark of the gentleman from Peru that the Conventions of 1958 are not binding in international law for the moment; they are certainly not binding between all countries as such, but they are certainly binding as far as they confirm international customary law.

Another remark concerns the problem of the shelf-locked and landlocked countries. They have certain common interests, and as my colleague from Singapore has remarked, their main common interest concerns the mineral resources of the deep seabed. They don't ask special compensation for the fact that they do not have a continental shelf. The only thing they ask is a guarantee that they will not be excluded from the common heritage of mankind, and the same applies to the question of fisheries. What these countries ask is to have guarantees that they won't be excluded from the fisheries of the world.

These are the two remarks that I had to make, but then I had a particular question to Dr. Schram.

Dr. Schram said something about the over-fishing of certain stocks in the world, and I agree with him that in certain regions of the world, certain stocks of fish may be over-fished. But I am not so sure for one particular stock he mentioned, the Norwegian herring. It has been observed in history, for two or three hundred years, that the abundance and the scarcity of that particular kind of fish appear in a cyclic pattern. For a few years there is an abundance; it is followed by long spans of years of scarcity.

This is a scientific observation, and it is valid for other kinds of fish; for example the shrimp of the North Sea. We have just the same phenomenon there; for a long period of years we did not have shrimp, in the 1960's for instance, but now they seem to be making a comeback.

So my question is this: for that particular stock of fish, the Norwegian herring, is there really scientific evidence that it is over-fished? Is it not due, rather, to the fact that Norwegian herring is subject to biological laws that make it for a few years abundant and for others years scarce?

I ask that question for the simple reason that I fear that for certain species, one might too quickly proclaim that there is over-fishing, and that one might too easily forget that there can be scientific evidence that the cause of the scarcity might be something completely different.

*FERRERO:* Excuse me for insisting on my point. I will try to be very brief.

My colleague who has just spoken said that the Geneva Conventions express rules of customary law, as it is indicated in the Case of the North Sea Continental Shelf decided in 1969 by the International Court of Justice.

However, I must remind him that this case was about article 6 of the Convention, and the International Court of Justice decided that West Germany was not obliged by the terms of such article, because that provision was not customary international law.

Nevertheless, in a dictum made by the Court in the same Judgment, the Court said very clearly that the first three articles of the Convention on the Continental shelf were rules of customary law; but it said that they were Rules of international customary law not only because they were in the Convention or because those three articles were not subject to reservations, but also because they reflect the general practice of states on the matter; that is, because they reflect the practice of states that signed the Convention and the practice of many other states which were not parties to the Convention.

I agree with my colleagues that the rules established in the first three articles of the Convention may reflect principles about the continental shelf which are based on customary international law. For example, it is a principle recognized under customary international law that a coastal state has soverign rights over the resources on its continental shelves. Indeed, this is a principle accepted by the states which are parties to the Convention and also by many other states of the world; for instance by the Latin American states.

Therefore, those are rules of customary law not because they are in the Convention, but because they reflect general practices accepted as law by states.

Nevertheless, there are other rules established in the Geneva Conventions which have not been accepted or which have been rejected by many countries of the world. This is the case, for example, in the limit of the contiguous zone which cannot be more than 12 miles including the territorial sea. Therefore, we cannot conclude that all the rules established in those Conventions are rules of customary law just because they are in the Convention and because only some of those rules have been accepted by the majority of the states throughout their practice. To know whether a certain rule established in the Geneva Conventions is a rule of general international custom, we must study that specific rule, its evidence and the attitudes of the states towards such a rule, to see if it is a general practice accepted as law. By this way of reasoning, the limit of the territorial sea is not a universal rule of international law, considering all the reasons already mentioned.

Also we should note—and here we find a contradiction—that some of the countries that signed and ratified the Convention on the Continental shelf are the countries that now want to change the definition of continental shelf given in that Convention. Thus, they are proposing a limit of 200 meters for the shelf, when the Convention speaks of the continental shelf as being out to where it is possible to exploit its resources.

*SCHRAM:* I will very briefly first address myself to Monsieur Debergh's question about the Norwegian herring, as he called it.

I was referring to the herring in the Norwegian Sea, the Atlanto-Scandia stock, which has been caught in former years in the area between Norway, Iceland and Scotland. It is quite true that we have had this phenomena of cycles in herring, but I presume Mr. Debergh was mainly thinking of the Baltic herring stocks, which are very typical of this in former centuries.

I am not a scientist, but to my knowledge, the main factor in the virtual disappearance of this very strong and extremely valuable Atlanto-Scandia stock was mainly due to over-fishing by certain of the nations bordering on the northeast Atlantic. There may have been some environmental forces as well contributing to this very rapid decline, but it is believed that it was mainly due to over-fishing of immature young herring.

It was interesting to hear the views of my two colleagues here who agreed more or less that future fisheries arrangements would include preferential fishing rights for the coastal states, even if they did not go as far as I did in my remarks in talking about exclusive fishing rights of the coastal states.

I agree with them, both of them, that in any future regime we would need to build in regulations with respect to landlocked countries and those countries that are building distant-water fishing fleets. I certainly could to a large extent agree with the proposals put forward by them in this respect.

It seems to me that we have perhaps tended to forget that we have gathered here today chiefly to talk about the questions regarding the developing countries and fishery regimes.

I think the crux of the matter is really this: the developing countries feel that of course the first and foremost issue is economic development. Their most valuable assets are the natural resources found in their countries, and also in the continental shelves off their countries and I would add, in the epicontinental sea.

I think we must really look at this situation realistically. We cannot expect the developing countries —which are more than two-thirds of the family of nations—to agree any longer to a situation where foreign nations come to their shores with modern sophisticated equipment and plunder these resources just outside their coastlines, benefitting themselves but not the developing coastal states. I think we have

come to the end of that road, and we will see developments in the next one or two years which will emphasize the coastal states' interests in these respects, albeit to the detriment of distant-water fishing interests.

We have heard here that tales of depletion of fish stocks have been exaggerated, but I don't think so. I think it was particularly unfortunate to take the whale stocks as an example of exaggeration in this respect. The virtual extermination of the world's whale stocks is a prime example of how commercial fisheries can really destroy a valuable natural resource.

What I think we will see in the near future is a system which emphasizes the coastal interests through exclusive coastal fisheries jurisdiction, though with international guarantees such that if a certain fish stock is not used by the coastal state it must be given to other fishing nations. Such international guarantees can be built into any future law of the sea treaties.

I do not think that the United States' article 3 in their proposal before the Seabed Committee goes far enough, but it goes certainly quite far in the right direction, as do the new proposals we heard elaborated today by Mr. Iguchi. These certainly have their merits, but they do not go far enough.

To sum up, I really do think that a change in the law of the sea is going to be a tremendously important step for the benefit of the developing countries. I think these changes will certainly be along the lines I have tried to outline in my paper; they will certainly be to the detriment of the vested interests, as they are called, and have been called here today. True, they will be to the detriment of distant-water fishing industries, but be that as it may, I think the developments that I have outlined are inevitable.

*IGUCHI:* Instead of taking up the questions, I would rather like to make a general comment. I think that is rather along the line that you wanted.

First of all, I would like to point out that there has been discovery of new fishing grounds, and also by development of new technologies. New fishing species have been found, even two years ago, in the North Pacific, and we think by human effort there is still a possibility of increasing production without injuring in any way the maximum sustainable yield.

Also, in Japan, as Dr. Kasahara said, we are also a coastal fisheries state, because I think about half of our fish consumed, or a little more than half, are caught in the coastal waters just offshore or the adjacent sea areas of Japan. In fact, we even try to increase the productivity of these marine resources. There is a large-scale planned artificial increase of reproduction of marine products, like shrimp, oysters, and seaweed, with which we have been quite successful. I think through this artificial increase in reproduction, we have increased that kind of yield more than half a million tons.

This kind of experience and technology would certainly help other coastal states, particularly developing countries, and we are willing to cooperate in that manner.

Secondly, there was some mention of the conflict between not only coastal and distant-water, but regional versus global. Again, we should strike at the harmony and balance of interest between regional and global interests. For instance, if Europeans would say Africa (because Africa has a special relationship with the European countries) would conclude a regional agreement with Europe to exclude the Japanese fisheries, I would like to point out that this is a matter about which the economic community should consult with the African countries. If Africans want the Japanese capital and technology, we would be only too glad to supply it. The day of colonialism is over and we would like to cooperate with countries which are most remote from us.

Thirdly, about the evidence of the depletion of stocks, if there is definite depletion of stock, it is in the interests of the Japanese fishing industry and the consumers who depend so much on fish to cooperate for their conservation and preservation, because if there is depletion of fish stocks in the near future, it would be the Japanese fishing industry and the consumers which would be hit.

It is in their interest to cooperate to combat against the depletion of marine resources. These things are easily understood from rational economic arguments. As regards whales, as you know, there was a ten-year ban in Stockholm, and I was there, and I don't think there has been sufficient scientific argument for the total ban. There was an acknowledgement that certain species were endangered, and perhaps they should be subjected to quotas or reduction of catches for that endangered whale stock, which we were prepared to do.

But then, there was a certain—I would say—emotional judgment; there were even hippies going around Stockholm with this demonstration of "Maybe Dick"—not "Moby Dick," but "Maybe Dick," demonstrating in front of our delegation twice, saying that the whales should be protected. There was not any scientific argument to endorse the total ban. This is something which we would certainly regard as a very unsatisfactory resolution.

*WOO:* It is very interesting to observe my two colleagues debating each other on the statements they have made on the available stocks of fish in the world. I am not very good at the statistics, but I have to rely somewhat on the statistics of FAO on occasion.

This is rather old—1969—but let us see what it says. The available fish, shall I say in the Indian Ocean—the total stock of fish itself, is 10.2 million, and in the year 1969, the total catch of fish was 2.7 million. That means that there is still available 7.5 million tons, so then we have really substantial amounts left to be caught.

So if somebody brings up the argument on keeping the stock, maintaining the maximum sustainable yield, I am not sure where the real point is.

That reminds me of my own words; as I said in my earlier presentation, these are the tricky words: "equitable distribution, maximum utilization, maximum sustainable yield." These are supposed to be scientific words based upon scientific findings. As I was talking with a friend of mine yesterday over the clambake, it was clearly pointed out that those are the pseudoscience, and pseudoscience is the tricky one that confuses us non-scientists. We are very suspicious of these sciences, and we cannot really rely upon something which is not really helping us.

*CHAO:* Just a few brief words to answer my good friend, Professor Ferrero from Peru, with whom I have the privilege of being acquainted during the last two days.

I am glad that we differ in our views regarding the legal position on this question. In fact, if there had been total agreement between international lawyers on the subject, then there would not have been so many books and so many reviews being written on the subject.

I am a lawyer, and I think I would abide by the rule of law; and on the question of whether the provisions of the Convention on the High Seas are still valid or not, I am inclined to say they are still valid. In the preamble of that Convention it is expressly stated that that Convention codifies existing customary international law.

Now, on the question of the breadth of the territorial seas, for example, the International Law Commission, in its commentary, considered that international law does not permit an extension of the territorial sea beyond 12 miles.

I agree with Professor Ferrero that peaceful change is necessary. At present, we are in the process of effecting a peaceful change, but until the change is effected, in my respectful submission as a lawyer, the existing law still prevails.

Let me say one final word; the object of my paper is intended to be provocative. I know many people do not agree with me, and I think that is how law develops. The primary object of my paper is to highlight the separate and distinct interests of the developing landlocked and shelf-locked states with regard to the questions of the law of the sea. And I hope when the moment of reckoning comes, that these interests will be duly taken into account.

# MAJOR POSITIONS, PROBLEMS AND VIEWPOINTS REGARDING THE NEEDS AND INTERESTS OF DEVELOPING STATES

## The U.S. Position

*Bernard H. Oxman, Assistant Legal Adviser, U.S. Department of State*

**Thursday morning, June 29**

Mr. Stevenson has asked me to express his regret at being unable to attend this week's meeting. Unfortunately, his absence from the country was required, and he conveys his best wishes to his friends and colleagues here today.

The topic for this year's meeting is most timely and important. An understanding of the needs and interests of developing countries is essential to the achievement of a durable settlement of various law of the sea issues. It goes without saying that if the community of nations is to be expected to observe the law of the sea as it emerges from the new Conference, then the law must be responsive to the needs and interests of the community.

One critical way to ensure this result is procedural.

Most international law originally developed from the custom and practice of states. Acquiescence—if not consent—is a key test for the existence of a rule of customary law. Clearly, this method of developing law may tend in certain respects to favor the strong against the weak, the rich against the poor, the adventurous against the restrained. On the other hand —as proponents of unilateral action point out—in the absence of reasonable alternatives, this may be the only way to maintain a dynamic and responsive legal order.

There is a reasonable alternative, although time is running short. Whatever its other strengths and weaknesses, the United Nations system provides us with the means for writing new multilateral treaties, in this case in the Seabeds Committee and at the 1973 Law of the Sea Conference.

The substantial numerical strength of developing countries in such a forum is, in and of itself, an important safeguard of their needs and interests. The nature of the multilateral negotiating process encourages all states to frame their proposals and positions in a way that takes account of the interests of others. Thus, inevitably, the developed states actively participate in the process of identifying and providing for the interests and needs of developing countries. Conversely, not infrequently—and not at all inappropriately—the developed states themselves must examine alternative proposals for protecting their own interests.

Without arguing that procedure is a substitute for sound substantive analysis, I believe we can conclude that the multilateral procedure, in and of itself, brings to the fore important answers to the basic question: What are the interests and needs of developing countries? In the final analysis, these countries must decide that question themselves. With that caveat in mind, I will step into the contentious realm of substance.

*What are the interests and needs of developing countries?*

Feeling free to be contentious, I propose the following as the first answer to the question:

*All states, regardless of their respective stage of development, have many of the same important interests in a timely and successful outcome of the Law of the Sea Conference.*

"Order and stability" are familiar bromides. But the need for order and stability in the oceans is real for all states. Whatever the political justifications for instability from time to time, we must face the fact that instability and economic development tend to be inversely proportional to each other.

The security and commerce of the world are based upon the free movement of vessels and aircraft on the high seas and through international straits. We take this for granted today because there has been no real experience with the alternative of conflict and chaos in recent times. What nation feels secure enough in its bilateral relations around the world to subject its everyday communications and trade with other nations to the vicissitudes of international politics? One of the most important functions of international law is to remove matters from the political sphere, and substitute clear legal rights and obligations that reflect the relevant interests. Where rights of navigation and overflight are concerned, there can be no compromise in this regard.

The recent Stockholm Conference on the Human Environment emphasized that protecting the human environment is a global challenge, and indicated the need for international action to resolve the problem. No state acting alone is capable of protecting its shores and coastal resources from pollution. There will be little point in developing beaches for tourists, or a fishing industry, if necessary international action to regulate marine pollution is not taken.

Looked at in a broader perspective, our concern for the environment cannot be limited to prevention of pollution. It must include rational management of the increasingly important living and non-living resources of the oceans. Because the oceans have been regarded as international for centuries, we have an excellent opportunity to establish new systems of international and regional cooperation to ensure rational management.

In sum, the interests of all states, first and foremost, are based on these universal considerations: order and stability, free navigation and overflight, prevention of pollution and rational management of resources.

Only widespread agreement can provide adequate assurance of order and stability. In the context of the modern law of the sea, this would include agreement on the breadth of the territorial sea (including the question of international straits), agreement on coastal state jurisdiction over seabed resources and fisheries beyond the territorial sea, and agreement on an international regime for the deep seabeds. Above all, order and stability require an effective system of compulsory settlement of disputes. Without this, it may well prove impossible to build a meaningful system of standards, rights, and duties upon which an ultimate settlement can be based.

The protection of free navigation and overflight requires agreement on the narrowest possible territorial sea. If this figure is deemed to be as much as 12 miles, agreement must necessarily include provision for free transit through and over straits used for international navigation. Moreover, coastal state resource rights beyond the territorial sea must be designed to minimize the danger of interference with freedom of navigation and overflight. Accordingly, such rights must be clearly defined, and subject to effective internationally agreed limitations.

Protection against pollution necessarily means that both coastal and flag states must observe certain internationally agreed standards, and that there should be effective means for assuring adherence to such standards. The jurisdiction of a coastal state over seabed resources should not relieve it of the duty to apply international anti-pollution standards to those entities it authorizes to explore and exploit such resources. Likewise, freedom of navigation on the high seas and free transit through international straits do not relieve vessels from the duty of complying with agreed international standards designed to protect against pollution and prevent accidents that can result in pollution, in straits and on the high seas.

Sound resource management requires, in the first instance, a resource manager. In many cases, from a resource management point of view, it does not matter much within certain limits whether a coastal state, or an international or regional organization, does the management. Thus, the division of management authority over seabed resources largely turns on other important problems, including the problem of distribution of wealth.

However, where fisheries are concerned, the migratory habits of the resource must be taken into account if there is to be sound resource management. As a rule, it is desirable that the same system of resource management apply to a stock of fish throughout its life-cycle. Thus, with respect to coastal species of fish—over 85 percent of the total—a coastal state can manage the resource itself or in concert with neighboring coastal states, as these species generally reside in coastal waters in the vicinity of the continental shelf. Similarly, although salmon

migrate far out to sea, the fact that they return to their rivers of origin permits the coastal state of origin to regulate them effectively. Tuna, however, are an example of an oceanic species that migrates over huge distances. No coastal state can effectively regulate them itself, and a substantial fishery for tuna must follow the fish over great distances. An international or regional resource manager is necessary for tuna.

We must constantly bear in mind that rights and duties go hand in hand; they cannot be rationally separated. If the coastal state is to acquire substantial resource management jurisdiction, the question arises as to what corresponding duties should be placed on the coastal state. It is clear that protection of freedom of navigation and overflight and prevention of marine pollution in and of themselves require the imposition of some very important duties. But are there any duties that flow from the need for sound resource management itself? The answer is clearly affirmative.

Because fish are a renewable resource, and because they are a critical source of animal protein, it is important that the coastal state be responsible to other members of the international community for assuring conservation of fish stocks and for permitting their maximum utilization consistent with sound conservation practices.

An analogous problem regarding seabed resources concerns the difficulties that can result from disruptions in the flow of such resources to world markets. Because of the economic significance of some of these resources, this issue is related not only to the question of resource management but to the basic problem of providing a reasonable measure of order and stability.

While I clearly have not disposed of all the universal interests involved in the Law of the Sea negotiations, I would venture at this point to a second answer to the substantive question:

*Many important differences in interests between states regarding the outcome of the Law of the Sea Conference depend on factors other than their respective stage of development.*

Having stated this premise, I feel I should run for cover. However, I need look no further for an effective shield than the proposed "56-power list" of subjects and issues for the Law of the Sea negotiations. Among others, one will find in the list reference to the special problems of landlocked states, shelf-locked states, states with short coastlines, archipelagos, states with narrow shelves, states with broad shelves, states bordering enclosed or semi-enclosed seas, etc. I was recently asked what the "list" did for New York City, and after some study I finally came up with an item for them, item 18—"islands under . . . foreign domination or control."

Geography, then, is a major factor causing divergences in interests or, at the least, specialized problems that are not generally shared. It does little good to pretend that a coastal state with a long coastline facing a broad continental margin would not enjoy having it all to itself, all other things being equal (which they are not). The records of earlier annual sessions of this Institute are replete with such suggestions. It also does little good to deny that if all the coastal states take all (or 200-miles worth) of the continental margins, and hence virtually all of the oil, for themselves: (1) The landlocked states will wind up with little if any share in the benefits from seabed petroleum and gas, and (2) A few coastal states, developed and developing, will wind up a lot "more equal" than the vast majority in terms of valuable resources.

I mentioned earlier that the division of resource management jurisdiction over seabed resources raised basic questions of distribution of wealth. This is true if the resource manager is allowed to keep all of the benefits. But this need not be the case. The coastal state can be given effective resource management jurisdiction over mineral resources, subject to a duty to turn over a portion of the revenues it derives to the international community. I might add that this is a comparatively small price for coastal states to pay for secure internationally agreed rights over the resources, their exploitation, and their disposition, particularly since developing coastal states would share in the international benefits that accrue.

Coastal state resource management jurisdiction over continental margin resources beyond 200 meters depth, coupled with benefit sharing, appears to be the only practicable way to harmonize the interests of states with long coastlines or broad shelves, on the one hand, with the interests of landlocked and shelf-locked states, states bordering enclosed or semi-enclosed seas, states with short coastlines, and I might add states with narrow shelves, on the other hand. States in the latter categories either cannot acquire jurisdiction seaward of 200 meters depth, or cannot be expected to acquire benefits of comparable value for such seaward extension of jurisdiction.

Geography may also affect other interests. Archipelago states have raised specialized problems that have a direct bearing on the general interest in free navigation and overflight. Landlocked states have given renewed emphasis to the problem of access to the sea. States bordering enclosed and semi-en-

closed seas share in an immediate and vital way the general interest in free transit through and over straits used for international navigation. States with small coastlines cannot expect to build a substantial fishing industry based solely on fishing off their own coast.

There are, however, other specialized interests in this category that do not depend on geography as such. While most fishing states fish mainly off their own coast, some engage in extensive fishing off the coasts of other states. Both groups—coastal and distant water—include developed and developing countries. Indeed, a careful examination of the fishing interests of most states reveals that very few states have an interest in fisheries only off their own coast.

Much has been said about the special interests of the maritime powers. Their interests are well known, and it should be noted that some of the largest merchant fleets in the world fly the flags of developing countries. Their interests are in fact merely a more immediate manifestation of the general interest in freedom of navigation and overflight, and free transit through and over international straits.

A specialized interest that is a relative newcomer to the law of the sea is the interest of states that produce minerals on land that may also be derived from the seabed. This issue mainly concerns hard minerals, and in particular manganese nodules. The producing states concerned include both developed and developing countries. (Nickel, the principal nodule metal of interest at this time, is in fact produced in major quantities by a very few developed states.)

The majority of developing and developed countries are consumers of the principal metals found in manganese nodules (or their end products): manganese, nickel, cobalt, and copper. These consumer countries obviously have an interest in secure supply at a reasonable price. The problem of balancing producer and consumer interests is not new to international economics, but a solution necessarily requires an examination of the relevant interests and factors involved. A situation where one state provides an overwhelming proportion of the world supply may call for special attention: this could conceivably be the case with Zaire, which is the world's major supplier of cobalt.

While this does not exhaust the category of specialized situations, I feel I can now safely turn to a few concluding remarks on the subject of the meeting, namely the interests and needs of developing countries. I offer my third, and final answer, to the question:

*Certain important differences in interests between states regarding the outcome of the Law of the Sea Conference depend on their respective stage of development, and can only be resolved by addressing the technological and economic questions involved in an international framework.*

There are no juridical answers to the economic and technological problems of developing countries as they bear on the law of the sea. Developed states have continental shelves, but they also have the indigenous capital, technology, and labor to exploit those shelves, and trained government supervision and a stable investment climate that can produce a maximum rate of return to the public treasury.

Coastal state jurisdiction alone is essentially a source of economic rent, and even the rent for similar resources will vary depending on conditions in the coastal state. To the extent that rent is an objective, it would appear to be particularly important for developing countries to seek a regime that includes maximum international revenue sharing, so that they can share in the benefits from exploitation off the coasts of the developed states, and even out to some extent the divergences in wealth distribution caused by geographic factors. Secure investment conditions would also increase the rent. Rent can of course be used for development purposes.

Beyond this factor, however, is the question of the capacity to use the oceans. Inherent in this question is the problem of participation in technology.

Let us take scientific research as an example. Many of us would certainly adhere to the view that maximum freedom of scientific research is of benefit to all mankind. However, some developing countries argue that the kind of research conducted largely reflects the priorities of developed states with oceanic research capabilities, and that the interpretation of results and the understanding of their economic significance frequently require a high degree of expertise that is in short supply in developing countries.

Jurisdiction over scientific research will not solve the problem. What is needed are means to ensure real participation in research and its benefits. Above all, this calls for the creation of indigenous scientific capability in developing countries where possible, coupled with the availability of impartial international assistance of both a scientific and a technical nature.

A frequently overlooked, but in my opinion quite important, provision in the U.S. draft seabeds treaty is article 40(m), which authorizes the Seabed Authority to:

> Establish or support such international or regional centers, through or in cooperation with other international and regional organizations, as may be appropriate to promote study and research of the natural resources of the seabed and to train nationals of any Contracting Party in related science and the technology of seabed exploration and exploitation, taking into account the special needs of developing States Parties to this Convention. . . .

This provision goes beyond scientific research, and deals with training in the technology of seabed exploration and exploitation as well. This is relevant to areas both within and beyond national jurisdiction. Indeed, training in the management of areas managed by the coastal state can be a very critical factor affecting the benefits derived by the coastal state from exploitation of these areas. If the international community has an effective interest in the sound management of these coastal areas—which would be the case if there are international standards and review, including an obligation to share revenues —then the community will also have an effective interest in assisting the coastal state to improve its capability to derive maximum benefits from the area. Thus, article 41 of the U.S. draft provides that, at the request of any Party, the Seabeds Authority may assist that party to augment its capability to derive maximum benefit from the efficient administration of the trusteeship or intermediate zone.

The same idea can be applied to coastal state management of fisheries. Once again, if the international community, by virtue of the international standards applicable to coastal state management, has an effective interest in such management, it also has an interest in assisting the coastal state to achieve effective management. Thus, in his March 29 statement before Subcommittee II of the Seabeds Committee, Ambassador McKernan made the following suggestion:

> A number of countries have stressed the need for expert assistance in designing and carrying out fishery management programs. Accordingly, we suggest that the Subcommittee consider the establishment of an international register of fisheries experts to assist countries at their request. This arrangement could be financed in a number of ways, including, for example, the allocation of a percentage of the management fee collected by coastal states. These measures could provide developing coastal states with the expertise whereby they themselves might effectively exercise their responsibilities for managing coastal and anadromous species under the arrangements that we have just outlined.

Finally, the question of participation in the benefits of deep seabed exploitation arises. It is clear that benefits can be derived from revenue sharing and from the technical assistance measures I have described. Perhaps more can be done. However, it must be remembered that in the deep seabeds as well as coastal areas, training and technical assistance are essential to active participation: a legal right to participate, like legal jurisdiction for a coastal state, in and of itself is essentially only a right to economic rent in accordance with market and other conditions.

This is perhaps the most appropriate point to return to my opening remarks. It is nowhere more apparent than with respect to the deep seabeds that the protection of all relevant interests can only be assured by timely international agreement. It is now possible by agreement to achieve a settlement that provides reasonable and secure investment conditions for the companies interested in exploitation and at the same time provides for equitable participation by developing countries in the benefits of seabed exploitation.

In sum, new institutional arrangements are the most effective way to deal with the real problems of developing countries, and such arrangements can only be created by timely agreement in the context of a law of the sea settlement that respects the interests of all. This is the new opportunity. This is the dimension that can set the next Law of the Sea Conference apart from its predecessors. We will soon know if we have the vision and the capacity to do more than carve up territory and resources, and to recognize that there can be no rights without corresponding duties. For my part, I certainly hope so.

# The Patrimonial Sea

*Andres Aguilar, Ambassador of Venezuela to the United States*

**Thursday morning, June 29**

I think it is only appropriate to begin by defining the concept of "patrimonial sea," as it is a new one, at least as regards the meaning and scope of the term as used in recent studies, proposals and declarations.

The most authoritative definition is the one appearing in the Declaration of Santo Domingo, adopted by the Specialized Conference of the Caribbean Countries on Problems of the Sea, which met at the Foreign Minister level in the capital of the Dominican Republic from June 5-9, 1972. This Declaration was adopted by the affirmative vote of ten of the 15 countries represented at the Conference (Colombia, Costa Rica, Dominican Republic, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Trinidad and Tobago and Venezuela), with no votes against and five abstentions (Barbados, El Salvador, Guyana, Jamaica and Panama).

In conformity with this Declaration, coastal states would have sovereign rights over the renewable and nonrenewable natural resources which are found in the waters, in the seabed and in the subsoil of an area adjacent to the territorial sea called the patrimonial sea.

In this zone, according to the Declaration, ships and aircraft of all states, whether coastal or not, would have the right of freedom of navigation and overflight, with no restrictions other than those resulting from the exercise by the coastal state of its rights within the area. Subject only to these limitations, there would also be freedom for the laying of submarine cables and pipelines.

On the matter of scientific research and the protection of the marine environment, the Declaration of Santo Domingo states that "The coastal State has the duty to promote and the right to regulate the conduct of scientific research within the patrimonial sea, as well as the right to adopt the necessary measures to prevent marine pollution and to ensure its sovereignty over the resources of the area."

The Declaration does not lay down any precise and uniform breadth for this zone, but it does set forth the following two principles: (a) The breadth of this zone shall be the subject of an international agreement, preferably of a world-wide scope; (b) The whole of the area of both the territorial sea and the patrimonial sea, taking into account geographic circumstances, should not exceed a maximum of 200 nautical miles. To better appreciate the scope of the latter principle, it must be borne in mind that in the same Declaration of Santo Domingo, it was agreed that "The breadth of the territorial sea and the manner of its delimitation should be the subject of an international agreement, preferably of a world-wide scope" and that "In the meantime, each State has the right to establish the breadth of its territorial sea up to a limit of 12 nautical miles to be measured from the applicable baseline."

In order to define some concepts more precisely, we must return to the fundamental question of the nature and scope of the rights which, according to the Declaration, would be enjoyed by coastal states over their patrimonial sea.

With regard to the nature of those rights, the Declaration speaks of sovereign rights over the natural resources which are found in the zone. It is thus very clear that such sovereign rights refer to the resources and not to the zone itself.

The expression "sovereign rights" was chosen because it was considered the most appropriate to indicate that the coastal state would enjoy over those resources the same full powers it enjoys over the resources in its own territory. Furthermore, this is the same wording as it is used in article 2, paragraph 1, of the 1958 Geneva Convention on the Continental Shelf.

With regard to their scope, it is also clear that these sovereign rights would be exercised over all renewable and non-renewable natural resources which are found in the waters, in the seabed and in the subsoil of the patrimonial sea. The coastal state would thus have exclusive rights over all the resources of the zone with no distinction whatsoever.

The purpose behind the establishment of this zone is therefore a purely economic one rather than a political or strategic one. Hence the coastal states would have sovereign rights over the resources existing in the zone and not over the zone itself.

Clearly, this explains the use of the term "patrimonial sea" proposed to designate this zone. The term

"patrimonial" in this case, is a natural choice for jurists who have been trained in the concepts and terminology of European continental law, based on Roman law. For this school, the term "patrimonial" immediately brings to mind the idea of a plurality of economic rights vested in a single person, whether natural or juridical. Consequently, it fully expresses the nature of the rights which would be enjoyed by coastal states over this zone of the sea. Incidentally, the correct equivalent of the word *heritage* in Spanish and in French is patrimony, so the expression "common heritage of mankind," becomes "common patrimony of mankind."

In view of the purpose of the patrimonial sea, the legal regime of the high seas would continue to be applicable to this new zone to the extent, of course, that this is compatible with the rights over it that would be vested in the coastal states. Thus, as is clearly stated in the Declaration of Santo Domingo, there would be freedom of navigation and overflight and for the laying of submarine cables and pipelines, with no restrictions other than those resulting from the exercise by the coastal state of its rights over the resources of the area. These restrictions would be *mutatis mutandi* the same as are referred to in article 5 of the aforementioned 1958 Geneva Convention on the Continental Shelf. On the other hand, freedom of fishing would obviously disappear.

In the light of the above explanations and still using the Declaration of Santo Domingo as a basis, the patrimonial sea may be defined as that zone contiguous to the territorial sea, in which coastal states would exercise sovereign rights over the renewable and non-renewable natural resources which are found in the waters, in the seabed and in the subsoil.

The basis or *raison d'être* of the sovereign rights which would be vested in coastal states over the resources of the patrimonial sea is the need to ensure that all countries may truly and effectively share the marine resources near their coasts. For the developing countries, this means not only having the additional resources they so badly need to promote and expedite their development, but also participating actively in all phases of the utilization of these resources.

Ideally, it could be argued that the fairest solution would be to agree that all resources of the sea beyond the territorial sea are the common heritage of mankind and to entrust their administration to an international authority. It is obvious, however, that, given the present state of international relations, formidable obstacles stand in the way of such a solution. In the first place, by virtue of existing international law, coastal states have acquired rights over their respective continental shelves and it is very unlikely that they would renounce these rights. In the second place, certain states have established by unilateral measures, supported in some cases by agreements with other countries which have made or plan to make similar or identical claims, zones over which they claim to have rights of different nature and scope. Given the fact that it is already difficult to stop the race to extend national maritime jurisdictions which began, as a matter of fact, with the Truman Proclamation, it will certainly be impossible to reverse the trend. The only way to avoid anarchy is to establish by international agreements, preferably of a world-wide scope, norms that will be acceptable to all or the great majority of states. In drawing up these norms, it will be necessary, of course, to take into account the acquired rights and legitimate aspirations which have given rise to many of these unilateral claims. Furthermore, it is highly unlikely that any agreement can be reached on the organization and powers of an international authority for an area which is so vast and so close to the land mass.

The attribution to the coastal states of sovereign rights over the resources of the patrimonial sea seems, therefore, to be both the simplest and the most realistic solution. It might also be said to be the fairest since all coastal countries, whatever their level of development, would receive the same treatment.

What is clear, in any event, is the fact that this is the solution which best satisfies the aspirations and needs of the developing countries. It is undeniable, for example, that the freedom of fishing on the high seas which is provided for in existing law operates to the advantage of a few highly developed countries with the financial means and scientific and technological knowledge necessary for operating fishing fleets at great distances from their national ports. These Powers can thus exploit, virtually to their own exclusive advantage, the living resources of the sea which theoretically belong to the international community as a whole. The fact is that the developing countries are not in a position to compete on equal terms with the great maritime and fishing Powers, nor will they be in such a position for a long time to come. The same could be said with respect to non-renewable resources, the only difference being that the majority of such resources which are now technically and economically capable of exploitation are situated on the continental shelves of one state or another. One of several merits of establishing the patrimonial sea, which would benefit all coastal states equally, would be that it would ensure a more equitable distribution of resources which in theory belong to all but in practice are used by a few.

Moreover, as the Head of the Mexican delegation, Ambassador Castañeda, very rightly pointed out in the statement he made at the thirtieth meeting of Sub-Committee II of the United Nations Seabed Committee on 29 March 1972, "By restricting the catch to be taken by vessels from distant-fishing countries, this system not only fulfills its own needs, but also contributes to avoid over-fishing and the possible extinction of the resources concerned. Thus, the coastal state would be acting in the interests of the international community, as if it were its organ or agent."

It has been said that states with short coast lines or bordering enclosed or semi-enclosed seas where distances do not permit extension of the patrimonial sea to the maximum limit of 200 miles would be worse off than those with a long seacoast and coasts on open seas with no obstacles to prevent the full enjoyment of their patrimonial sea. These, however, are the facts or, if you prefer, the vagaries of geography. Furthermore, these facts determine differences between various states in so far as any sea space is concerned. The area of each state's territorial sea also depends on the length and configuration of its sea-coast. There are states with practically no continental shelf, shelf-locked states and yet others with a fairly wide shelf. Moreover, if all differences between states are to be eliminated, the land area and resources would have to be redistributed.

It may, indeed, be said that only landlocked countries could reasonably claim that this solution would worsen their present situation. Bearing this fact in mind, in the statement I made at Geneva on behalf of the Government of Venezuela at the plenary meeting of the United Nations Seabed Committee on August 12, 1971, my country said that it might be appropriate to consider some form of compensation for landlocked developing states within a regional framework. As a contribution towards the study of that problem we suggested, in that statement, that it might be agreed, for example, that the yield from part of the resources extracted from the patrimonial sea belonging to the other states of the continent in question should be paid into a fund for the development of the landlocked countries on the same continent, each receiving a percentage in the ratio of the size of its population to that of the continent as a whole, account being taken of its *per capita* income and other development indicators.

Venezuela maintained the same point of view in the working paper it submitted to the Santo Domingo Specialized Conference. Specifically, we proposed the following text: "1. In addition to the rights held by land-locked States under existing international law, developing land-locked States will receive a share of the benefits coastal States derive from exploitation of the patrimonial sea or economic zone. 2. Appropriate regional machinery will be set up for dealing with all matters relating to such sharing." Other countries participating in the Santo Domingo Conference considered, however, that the purpose of the meeting was to adopt a general declaration of principles and that it was neither necessary nor appropriate in a document of that nature to deal with such matters which required more careful study. It was also argued that it was premature to deal with such a complicated question at the current stage of negotiations. Faced with these arguments, and in order that agreement might be reached on a text acceptable to all, or the great majority of, the participants, we did not insist that the substance of our proposal should be discussed.

I shall now deal with some comments which have been made on the subject of the patrimonial sea. One of the most frequent is that establishment of such a zone might result in under-exploitation of living resources and, consequently, the loss of resources so much needed to satisfy, *inter alia*, and principally, the food needs of the growing world population. This comment is based on the correct assumption that some coastal states are not, and for some time will not be, in a position to exploit by themselves the living resources of their patrimonial sea. It is also based on the very hypothetical supposition that, in exercizing their sovereign rights, such states might refuse to grant licenses or make other arrangements permitting such exploitation by other states or natural or juridical persons in private law. To counter this argument it may be said that, while this is theoretically possible, it would rarely, if ever, happen in practice. It is obviously in the best interest of every country to derive the greatest benefit from its natural resources and, logically, if it does not have the means to exploit them by itself and there is a risk that the resources will be lost, it will conclude contracts with other states or with private parties to do so on the best terms it can obtain. Furthermore, as the new law of the sea is to bring the interests of coastal states into line with those of the international community, it is necessary, in our opinion, to lay down not only the rights of such states but also their duties. The duty to exploit resources rationally, and to permit other states or individuals to do so on reasonable terms and conditions if a state is not in a position to do so by itself, could easily be included among such duties. This would, of course, necessitate the establishment of generally accepted pertinent norms, and of adequate means and procedures for settling any

disputes which might arise concerning the meaning and scope of such norms.

Another comment on the idea of the patrimonial sea, as previously defined, relates to the extension, under our proposal, of the rights of coastal states. It is said that, instead of establishing an exclusive fishing zone, the coastal state should be granted only a preferential right determined on the basis of its fishing capacity or its needs, among other criteria. It has also been proposed that a distinction should be made between species, with a view to excluding migratory species, for example, or certain fish such as salmon which constitute special cases. The proposal to limit coastal states' rights on the basis of the fishing capacity criterion is totally unacceptable to the developing countries since it would result in the perpetual, or at least very long-term, maintenance of an unjust state of affairs. So far as the other proposals are concerned, I shall at this stage, merely say that they would all create very complicated problems of practical application and would probably give rise to frequent disputes. How could it be determined whether a fishing vessel was fishing only certain species, and not others, in a state's patrimonial sea? The undoubtedly simpler, if not more logical or more scientific, solution is to establish an exclusive fishing area.

In the opinion of Venezuela and other Latin American countries, setting a maximum limit of 12 miles for the territorial sea and establishing the patrimonial sea make it no longer necessary to maintain the so-called contiguous zone for which provision is made in the relevant 1958 Geneva Convention. The Santo Domingo Specialized Conference adopted the same approach. The Declaration adopted by that Conference on 9 June makes no reference at all to a contiguous zone and the omission is intentional.

On the other hand, establishing the patrimonial sea would not imply the suppression of the rights already enjoyed by coastal states over the continental shelf under international law. However, these rights would be important only in cases where the continental shelf extends beyond the outer limit of the patrimonial sea. The reason is obvious. In that part of the continental shelf covered by the patrimonial sea, the legal regime applied would be that established for the patrimonial sea. This regime, according to the proposals adopted at the Specialized Conference of Santo Domingo, would give the coastal states broader rights than they already have under the regime for the continental shelf. On the other hand, this latter regime would be applied to that part of the continental shelf which extends beyond the patrimonial sea. These ideas are taken up in paragraph 4 of the Declaration of Santo Domingo, in the part relating to the continental shelf, which reads as follows: "In that part of the continental shelf covered by the patrimonial sea, the legal regime provided for this area shall apply. With respect to the part beyond the patrimonial sea, the regime established for the continental shelf by international law shall apply."

As can be seen from the foregoing, the Declaration of Santo Domingo of June 9, 1972, contains a sufficiently precise formulation of the legal regime for the patrimonial sea. It can be said, however, that this concept, which has been gradually taking shape, was foreshadowed in a succession of studies, recommendations and declarations from the end of the Second World War until today.

As early as 1952, the draft convention on the territorial sea and related questions, prepared by the Inter-American Juridical Committee, stated, in article 2, that the signatory states would also recognize the right of each of them to establish an area of protection, control and economic development up to a distance of 200 nautical miles measured from the lowest tideline on their coasts and those of their island possessions within which area they could exercise military, administrative and fiscal surveillance through their respective territorial authorities.

Resolution LXXXIV of the Tenth Inter-American Conference, held at Caracas in 1954, entitled "Conservation of Natural Resources: The Continental Shelf and Marine Waters" reaffirms "the interest of the American States in the national declarations or legislative acts that proclaim sovereignty, jurisdiction, control or rights to exploitation or surveillance to a certain distance from the coast, of the submarine shelf and oceanic waters and the natural resources which may exist therein." It also reaffirms "that the riparian States have a vital interest in the adoption of legal, administrative and technical measures for the conservation and prudent utilization of the natural resources existing in or that may be discovered in the areas mentioned, for their own benefit, and that of the continent and the community of nations."

In the Principles of Mexico on the Legal Regime of the Sea, adopted in resolution XIII of the Third Meeting of the Inter-American Council of Jurists, held at Mexico City in 1956, paragraph 2 of part C which relates to the conservation of living resources in the high seas, reads as follows: "States have, in addition, the right of exclusive exploitation of species closely related to the coast, the life of the country or the needs of the coastal population, as in the case of species that develop in territorial waters and subsequently migrate to the high seas, or when the existence of certain species has an important relation to

an industry or activity essential to the coastal country, or when the latter is carrying out important works that will result in the conservation or increase of the species."

Resolution 6 adopted at the Inter-American Specialized Conference on "Conservation of Natural Resources: The Continental Shelf and Marine Waters," held at Santo Domingo, Dominican Republic, in 1956, states, in paragraph 5, that ". . . the coastal state has a special interest in the continued productivity of the living resources of the high seas adjacent to its territorial sea." The following paragraph states that there was no agreement among the states represented at the Conference, ". . . either with respect to the nature and scope of the special interest of the coastal State, or as to how the economic and social factors which such State or other interested States might invoke should be taken into account in evaluating the purposes of conservation programmes."

The Declaration of Antigua, Guatemala, adopted at the First Meeting of Ministers for Foreign Affairs of the Central American Republics in 1955, is very interesting, both from the point of view of the origin of the concept and that of the term "patrimonial sea." In paragraph 8 of that Declaration the participating states declared their intention to defend the territorial, economic and cultural patrimony of the Central American States, including in the first-mentioned the continental shelf and the territorial and epicontinental sea so that its development may promote the overall improvement of their peoples.

However, as far as I know, it is the distinguished Chilean professor, Edmundo Vargas Carreño, who should be credited with having been the first to use the term "patrimonial sea" in an official document. In the preliminary report, entitled "Territorial sea and patrimonial sea (bases for a Latin American position on the laws of the sea)," which he submitted in 1971 to the Inter-American Juridical Committee, he affirmed the possibility and desirability of formulating a new concept concerning the patrimonial sea.

On the other hand, Venezuela has the honor of having been the first to present the thesis of the patrimonial sea as a Government thesis and of having developed, in the proposal it made at the plenary meeting of the United Nations Seabed Committee on August 12, 1971, the general lines of the concept and define the nature and scope of the rights which a coastal state would have over this sea space and the implications which the adoption of this thesis would have for the legal regime of the continental shelf and the high seas.

Later, Colombia and Mexico publicly supported this thesis which, as I said at the start of this statement, is shared today by ten of the 15 countries that participated in the recent Santo Domingo Conference.

So far I have referred to the positions held by Latin American countries and I have mentioned how they were foreshadowed in studies, recommendations and declarations made by various regional or subregional American bodies or conferences. However, it is only fair to recognize that the idea of an exclusive economic area is not just a Latin American idea and aspiration. Several African and Asian countries have presented basically identical theses in the statements made by their representatives in the United Nations Seabed Committee. Similarly, some of the major Powers, namely, the People's Republic of China and France, have publicly supported the proposed extension of national jurisdiction up to a maximum of 200 miles. The latter country, at the meeting of the United Nations Seabed Committee last March, came out in favor of extending the jurisdiction of the coastal states in respect to the seabed and the subsoil thereof but excluding the waters and the air space above, up to a maximum limit of 200 miles.

# The Legal Regime of Archipelagoes: Problems and Issues

*Mochtar Kusumaatmadja, Padjadjaran University Law School, Bandung, Indonesia*

**Thursday morning, June 29**

The law of the sea at present—to put it mildly—is in a state of flux. Some people, disturbed by the symptoms accompanying the rapid process of change, prefer to use the term "crisis." Whatever terms we may use to characterize the situation, we could perhaps all agree that we at times feel "completely at sea."

The reason is, I think, because on the one hand traditional concepts and rules seem to be becoming less relevant while on the other some blueprints for the management of ocean space, although intellectually challenging and visionary of a world which is to come and therefore valuable, are felt to have limited practical value for the solution of the immediate problems we are facing in this area.[1]

While a state of uncertainty envelops most matters of the law of the sea which until quite recently were considered beyond dispute, the subject I have been asked to speak on today has the additional difficulty of having been neglected under existing international law.

The case for a special regime of archipelagoes has recently gained new adherents among the members of the world community.

In a statement made before the summer session of the UN Seabed Committee, the representative of Fiji explained his government's view on the delimitation of territorial waters which would treat the Fiji archipelago as one unit. After explaining the importance of the natural resources found within the archipelago to the Fijian economy he stated:

> It is of importance to such countries [i.e. archipelagic countries], and of vital concern to Fiji, to control the development of their marine environments in order to insure that such development is in their best interests and *to prevent any form of degradation or pollution* that may endanger that environment or deplete its resources. [emphasis added]

The same concern is shared by the people of other island groups such as Nauru, Tonga, Western Samoa and the Cook Islands and not inconceivably by other islands groups in other parts of the world.

The substance of the Fijian position on the matter supports the view generally held by writers[2] that unilateral claims for extension of jurisdiction are *resource-oriented.*

The reason is not difficult to see. One is that in an archipelago there exist a very close relationship between the *land* (island) and the surrounding *sea* (water). The existence and distribution of natural resources throughout an archipelago—both living and non-living (or mineral)—are the result of or dependent upon the geophysical and ecological unity and interdependence of the island and the intervening waters. Secondly, where the people inhabiting the islands are technologically underdeveloped, free competition with technologically more advanced outsiders would be disastrous.

The tendency to protect the interests of the inhabitants by bringing the natural resources under the exclusive jurisdiction of the archipelagic state is therefore both understandable and reasonable.

The danger of pollution and deterioration of the environment generally caused by exploitations of mineral resources is a relatively new development which has a particular significance to archipelagic countries with their enclosed or semi-enclosed seas. The unilateral extension of Canada's jurisdiction over the arctic (archipelagic) waters is an example of a coastal state's concern caused by the transportation of oil through semi-enclosed waters.

Recent developments in the technology of natural resources exploitations, and the resultant dangers to the environment, seem to further strengthen the case for considering an archipelago as one unit.

While recognizing the good reasons for a special regime for archipelagoes seen from the point of view of the archipelagic states, the extension of jurisdiction involved raises problems with regard to one of the most fundamental principles of contempo-

[1] The views expressed in this paper are the personal views of the author.

[2] See, for example, John Craven "United States Options in the Event of Non-Agreement," *Proceedings*, Law of the Sea Institute Sixth Annual Conference, 1971 (University of Rhode Island, Kingston, Rhode Island, 1972), pp. 46-50.

rary law of the sea, i.e. the freedom of navigation and the exercise thereof in archipelagic waters.

A regime of archipelagoes as part of the international law of the sea, to be acceptable, must strike a reasonable balance between the needs and interests of the archipelagic states on the one hand and the interest of the international community in the maintenance of freedom of navigation on the other.

Contemporary law of the sea so far has not found a satisfactory solution to the problems of archipelagoes. Instead, the impression is created when examining the history of the concept that insufficient attention was given to the problem.

The unilateral actions taken by archipelagic states —as part of a general tendency of claims for more extensive state jurisdiction over adjacent seas—must be seen as an attempt to correct a situation which from an archipelagic state's point of view can no longer be accepted.

Before discussing the problems and issues which surround the question of archipelagoes in international law, it may be useful to examine the development of the concept both in theory and in the practice of states.

## DEVELOPMENT OF THE CONCEPT OF ARCHIPELAGOES

### Proposals by Learned Bodies and Individual Scholars

The first proposal to treat an archipelago of islands as one unit with a territorial belt drawn around the islands as a group rather than around each individual island was made by *Alvarez* at the 33rd meeting of the International Law Association (Stockholm, 1924). No maximum distance was suggested between the islands by Alvarez, who as Chairman of the Committee on Neutrality, presented a separate draft differing from the Committee's draft convention on "The Laws of Maritime Jurisdiction in Time of Peace" in certain respects. In the Committee's report no mention was made of the Alvarez proposal.

The question was discussed again at the meeting of the Institute de Droit International in Stockholm in 1925 which passed a resolution on the matter. The resolution provided that in the case of archipelagoes, the group of islands should be considered as one unit and the extent of the marginal sea measured from the outermost islands provided that the islands and islets are not further apart from each other than twice the breadth of the territorial sea. The resolution also provided that the islands nearest to the coast of the mainland are not situated further out than twice the breadth of the marginal sea.[3]

The American Institute of International Law in 1926 made a proposal on archipelagoes in its project No. 10 (national domain) which closely resembled the Alvarez proposal made to the I. L. A. Conference of 1924. It likewise did not provide for any maximum distance between the islands of an archipelago.

Other projects which studied the law on territorial waters in the 1920's, as, e.g., The Harvard Research in International Law, did not make any mention at all of archipelagoes. One can say in conclusion that the opinion expressed by the learned societies on the matter in the 1920's, i.e. on the eve of the 1930 Hague Codification Conference—though inconclusive on matters of detail in general recognize the special character of archipelagoes.

Of the individual scholars who have addressed themselves to the problem, mention can be made among others of Jessup, Hyde, Colombos and Gidel, who in various forms and each to a varying extent have supported the idea of treating archipelagoes as one unit.[4]

Special mention should be made of Fritz Munch, who in his book *Die Technischen Fragen dest Küstenmeeres* considered the possibility of treating a group of islands as one unit and has developed a mathematical formula to settle the question whether in a particular case a group of islands should be considered as one unit or not. His "rounding-off formula" is roughly as follows: the group can be rounded off when the total of the length of the constituent parts (i.e. islands or mainland) on the inner side is more than four times the distance between them.

A more recent and a most significant contribution by an individual scholar to the subject is the study prepared by the well-known Norwegian jurist Jens Evensen at the request of the Secretariat of the UN in preparation of the 1958 Conference on the Law of the Sea. In the conclusions of his study he offers the following proposal with regard to outlying archipelagoes:

> 1. In the case of an archipelago which belongs to a single State and which may reason-

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[3] Article 5, paragraph 2, *Annuaire*, Vol. 34, p. 673.

[4] G. Colombos. *The International Law of the Sea*, 3rd ed., pp. 90-91; G. Gidel. *Le Droit International Public de La Mer*, Paris (1934), Vol. III, pp. 706-727; Hyde. *International Law*, 2nd ed., 1947, Vol. 1, p. 485; P. C. Jessup. *The Law of Territorial Waters and Maritime Jurisdiction* (1927), pp. 457 and 477.

ably be considered as a whole, the extent of the territorial sea shall be measured from the outermost points of the outermost islands and islets of the archipelagoes. Straight baselines as provided for under Article 5 may be applied for such delimitation.

2. The waters situated between and inside the constituent island and islets of the archipelago shall be considered as internal waters with the exceptions set forth under paragraph 3 of this article.

3. Where the waters between and inside the islands and islets of an archipelago form a strait, such waters cannot be closed to the innocent passage of foreign ships.

Instead of the straight-baselines system mentioned in paragraph 1 of his proposal, the writer also contemplates the possibility of other methods, for example a mixture of straight baselines and arcs of circles. He further states that the waters inside the islands and islets must be considered as internal waters, subject to the right of passage through straits as defined under international law.[5]

## State Practice

State practice with regard to archipelagoes can be distinguished between (1) coastal archipelagoes and (2) outlying archipelagoes.

In view of the Judgment of the International Court of Justice in the Anglo-Norwegian Fisheries Case in 1951 and provisions on straight baselines in the Geneva Convention of 1958 on the Territorial Sea and Contiguous Zone, existing state practice with regard to delimitation of coastal archipelagoes present no difficulties from the point of view of contemporary international law.

State practice with regard to coastal archipelagoes comprises a considerable number of cases dating as far back as 1927 with the enactment of the Neutrality Decrees of 27 January 1927 in Denmark and the Customs Regulations of 7 October 1927 in Sweden. In 1935 Norway issued the now famous Royal Decree of 12 July 1935 (followed by the Royal Decree of 1952) fixing the base-points and baselines in detail all along the Norwegian coast. After the ICJ Judgment of 1951 in the Anglo-Norwegian Fisheries Case and the incorporation of this rule in the 1958 Geneva Convention on the Territorial Sea and Contiguous Zone, various countries have followed this practice.

With regard to outlying archipelagoes, the following states have applied the principle of treating the archipelago as one unit: (1) Ecuador (the Galapagos Islands), (2) the Philippines, (3) Iceland, (4) the Faroes and (5) Indonesia. To this group may be added Fiji, as its position on the matter is clear after the statement made before the 62nd session of the UN Seabed Committee in Geneva.

As a matter of historical note, the former Kingdom of the Hawaiian Islands may also be included in this category, as at one time it asserted jurisdiction over the intervening waters for neutrality purposes.[6]

In the application of the archipelago principle the states mentioned above differ in several respects, as e.g. in the purpose of the delimitation and its method. Only two of them, the Philippines and Indonesia, can be said to apply the archipelago delimitation for all purposes; whereas the others are doing it for the protection of resources.

Most of them apply the straight baselines system in delimiting their national waters or fisheries jurisdiction, except the Philippines and the Faroes. There are further differences in the application of the straight baselines system, Iceland and Fiji applying it in a less extreme form as compared to Indonesia. The Indonesian case differs from the others in that it has detailed provisions on the innocent passage through the waters of the Indonesian archipelago contained in a separate government regulation.[7]

There are indications of a growing interest in the archipelago system of delimiting maritime boundaries for purposes of exclusive resources jurisdiction on the part of island (group) nations for reasons noted earlier in this paper.

## The Archipelago Concept at the International Conferences for Codification of the Law of the Sea

Although the Hague Codification Conference of 1930 did deal with the archipelago concept in its preparatory work, the treatment of the subject did not go beyond this stage, so that it cannot be said that the Conference as such dealt with the subject.

The article on archipelagoes prepared by the Preparatory Committee as Basis of Discussion No. 13 was as follows:

[5] Jens Evensen, "Certain Legal Aspects Concerning the Delimitation of the Territorial Waters of Archipelagos," Doc. A/Conf. 13/10 (1958), p. 30.

[6] Crocker, *The Extent of the Marginal Sea*, pp. 595-596; see also Evensen, *Op. cit.*, p. 29.

[7] Indonesian Government Regulation No. 8, 1962.

> In the case of a group of islands which belong to a single State and at the circumference of the group are not separated from one another by more than twice the breadth of territorial waters, the belt of territorial waters shall be measured from the outermost islands of the group. Waters included within the group shall also be territorial waters.
>
> The same rule shall apply as regards islands which lie at a distance from the mainland not greater than twice the breadth of territorial waters.[8]

The above formula was a "compromise formula" which took into account the comments of Governments on the draft proposal on archipelagoes prepared by the Committee of Experts, which regarded the archipelago as one unit. According to this proposal the territorial sea would be measured from the island most distant from the center of the archipelago, while no maximum was mentioned for the distance between the constituent islands.[9]

The Second Sub-Committee of the Conference to which the subject was referred was unable to reach an agreement on the matter, and the idea to draft a definite text on the subject was finally abandoned.

The Geneva Conference on the Law of the Sea of 1958 was likewise unable to solve the problem.

Although several draft proposals were made by the Special Rapportuer in his various reports[10] on the delimitation of territorial waters of archipelagoes, the International Law Commission refrained from including any special provisions on groups of islands in any of its draft Articles.

In the final draft Articles on the Law of the Sea adopted by the International Law Commission there was no provision on archipelagoes.

In its comment on Article 10 of the Commission's draft which deals with islands the following observation was more concerned with archipelagoes:

> The Commission had intended to follow up this article with a provision concerning groups of islands. Like the Hague Conference for the Codification of International Law of 1930, the Commission was unable to overcome the difficulties involved. The problem is similarly complicated by the different forms it takes in different archipelagoes. The Commission was also prevented from stating an opinion, not only by the disagreement on the breadth of the territorial sea, but also by lack of technical information on the subject. . . .
>
> The Commission points out for purposes of information that Article 5 may be applicable to groups of islands lying off the coast.[11]

From the foregoing the conclusion can be drawn that the International Law Commission was prevented from reaching definite conclusions on the delimitation of territorial waters of archipelagoes, by the variety in rules and state practice and especially the divergence of views expressed in the comments by the various governments.

Whereas the preparatory work of the ILC thus reached some definite views on coastal group of islands, based on the Judgment of 1951 in the Anglo-Norwegian Fisheries Case, it could give no guidance concerning mid-ocean (outlying) archipelagoes.

Despite the fact that the Draft Articles prepared by the ILC for the Conference did not contain any provision on archipelagoes, an attempt was made at the Conference itself by the Philippines and Yugoslavia to have the matters considered through the introduction of Amendments to Articles 5 and 10.

These amendments were later withdrawn, at which time the delegate of the UK urged that the matter be referred to the UN General Assembly so that the necessary steps might be taken to study the matter and a report be made on the subject.

## PROBLEMS IN ESTABLISHING AN AGREED LEGAL REGIME ON ARCHIPELAGOES

The foregoing discussion of the development of the archipelago concept as a distinct concept of the law of the sea has shown that the special character of the archipelago is increasingly recognized and that the understanding for the need of a special regime has grown.

The failure of the international conferences on the law of the sea to deal with the matter was not so much caused by a failure to recognize the validity of the case but rather disagreement of some problems of a technical character.

There seems to have been difficulty even to define archipelago as a geographical concept. Though it is true that law can create its own concept of an archi-

[8] Report of the Preparatory Committee, Le Hague Conference (1930), p. 51; see also *American Journal of International Law, Spec. Suppl. 24,* 1930, p. 34.

[9] League of Nations Doc. *C-196, M-70* (1927) Vol. V, p. 72. See also: *A.J.I.L., Spec. Suppl. 20,* 1926, p. 142.

[10] First Report, A/CN. 4/5; Second Report, A/CN. 4/61, and Third Report, A/CN. 4/67 (1958).

[11] *Yearbook of the International Law Commission,* 1956, Vol. 2, p. 270.

pelago, the geographical factors cannot be overlooked.

As we have seen from the various proposals there is disagreement on: (1) the maximum permissible distance between the constituent islands, and (2) the maximum permissible length of baselines. Other questions are: (3) the minimum or maximum size of an island entitled to be regarded as a constituent part of an archipelago, and (4) the minimum number of islands required for a group of islands to be regarded as an archipelago.

This set of problems might come under the heading: definition of an archipelago (question: what is an archipelago?). In considering an archipelago as a *geographical* concept the use of a mere criterion of distance is not enough. Account must also be taken of the geophysical features of the situation.

As part of man's biosphere possessing unique features, the unity of the archipelago and interdependence of life on land (the islands) and the surrounding seas must also be taken into account.

This is the reason why the distance criteria like twice the breadth of the territorial sea, or the closing lines of bays, are irrelevant and arbitrary, apart from the fact that these criteria raise rather than answer questions. Why, for example, should archipelagoes be treated differently from historic bays which are exempt from the closing line rule? The absence of agreement on the breadth of the territorial sea is a fact which needs no further comment.

It is submitted, with due respect to existing efforts to establish maximum permissible distances, that any distance is bound to be arbitrary, especially if the size of the islands are not taken into account.

Besides the definition of an archipelago in a geographical sense, the *political* aspect should not be overlooked in any effort to develop a legal definition of the archipelago. As a *political entity* an archipelago may comprise less than it would as a purely geographical entity. The northern part of Borneo (East Malaysia), Eastern New Guinea (Papua and the Territory of New Guinea) and Eastern Timor (Portuguese) are not part of the Indonesian archipelagic state. The opposite may be true; i.e. groups of islands not forming one geographical whole in a strict sense may be considered one whole from a political point of view.

A second set of problems is the nature of the archipelagic state's jurisdiction over the archipelagic waters. It could be (1) jurisdiction for all purposes or (2) exclusive jurisdiction over resources. In terms of the traditional law of the sea this would necessitate the labeling of the archipelagic waters as internal waters, territorial waters (as distinguished from the territorial sea), or perhaps exclusive fisheries zone.

If freedom of navigation is to be guaranteed in these waters—as it should—one could by convention agree to have the right of innocent passage through archipelagic waters. This could or could not be restricted to certain sea lanes. The archipelagic waters would then become a concept "sui generis," as in traditional terms it would be *internal* waters (being on the inward side of straight baselines) while being subject to the right of innocent passage (thus having the status of territorial waters in traditional terms). Another way of looking at the problem would be to consider the straight baselines as construction lines and considering both the waters on the inner side as well as the outer side of the line (up to the distance of the breadth of the territorial *sea*) territorial waters.

One already feels the strain of applying the traditional concepts, developed against the background of marginal seas adjacent continental land masses, to groups of islands.

Another problem area is the determination of the main islands or a central point to serve as the central reference point for the archipelago. This may be necessary for purposes of delimitation. What for instances is the general direction of the coast in an archipelago?

Another point which may be taken into consideration is the proportion of the total *land* area (constituent islands) to the archipelagic waters (sea). This land-water ratio may be important in computations whereby the archipelago (as a politico-legal concept) is regarded as one unit, and may be used for example as a criterion for certain purposes, e.g. nature of jurisdiction. An interesting question which has to be answered in making the computation is whether only geographical criteria should be used or whether political boundaries should be taken into account.

Those are some of the problems which, in this writer's view, have to be taken into account in an attempt to develop a legal regime of archipelagoes. It gives some idea of the complexity of the problem and inadequacy of a method using simple mathematical formulae.

This writer has no definite answers to the problems just described, though he will venture some thoughts on the matter.

## Different Approaches to the Problem: the Cobbler and the Knight

It is the lot of the lawyer confronted with a prob-

lem he has to solve to use the materials and tools available to him however inadequate they may be. His is a humdrum occupation in an unexciting pragmatic world. Such is the role of the lawyer as a craftsman, not unlike the cobbler, a plumber or a carpenter.

This, however, is only one view; there is another, more charitable image of the lawyer and his role in our present-day world. It sees him, if not as a knight in shining armor, then at least as a master builder or architect with a mission to build a new and better world.

Using the first approach, an attempt to formulate provisions on the regime of archipelagoes will have to take into account principles and rules of international law, the writings of publicists and state practice on the subject.

With regard to *coastal archipelagoes* we can say with confidence that the law on the subject is already well established.

Scandinavian state practice on this matter, as exemplified by the Norwegian system of drawing straight baselines along an indented coast fronted by things such as islands and islets, was declared to be not contrary to international law by the I.C.J. in its Judgment in the Anglo-Norwegian Fisheries Case in 1951. By its incorporation as Article 4 in the Geneva 1950 Convention on the Territorial Sea Contiguous Zone it has become a general rule of international laws.

Although some principles contained in Article 4, as e.g. the drawing of straight baselines, may also be applicable to outlying archipelagoes, this writer thinks that some provisions cannot be applied owing to the different geographical features of mid-ocean archipelagoes. The rule that: "the drawing of such baselines must not depart to any appreciable extent from the general direction of the coast . . ." is hard to apply to mid-ocean archipelagoes, as it envisages coastal archipelagoes only, i.e. island formations forming part of a (continental) land mass.

In an article on the regime of mid-ocean archipelagoes, this provision should be replaced by one that would require that the drawing of such baselines shall not depart to any appreciable extent from the general contour of the archipelago. Once such a general contour has been determined, baselines may be drawn around the archipelago, regarding it as one unit. The waters situated between and inside the consituent islands (and islets) of the archipelago shall be considered as internal waters, or territorial waters. Where such waters form a strait, they cannot be closed to the innocent passage of foreign ships.

The use of the terms internal waters, territorial seas, and territorial waters with regard to archipelagoes is admittedly confusing as these terms have definite meanings in the contemporary international law of the sea. In the context of special nature of the archipelagic regime to be established they are, moreover, not particularly meaningful.

It may perhaps be better to replace them by "archipelagic waters" comprising both the waters on the inner-side ("internal waters") as well as the outer side ("territorial sea") of the "baselines."

From the procedural point of view the provisions on the (special) regime of mid-ocean archipelagoes should form part of the Convention on the Territorial Sea Contiguous Zone (or Zone of National Jurisdiction in an Ocean Space Convention—see below). They can either take the form of amendments to the present articles 4 and 10 or constitute a new article, coming after article 10 (islands).

In establishing a special regime on archipelagoes by convention, due attention should be given to existing state practice on the matter. One cannot escape the feeling, in considering the possibilities of devising new rules on the regime of outlying archipelagoes, that one is engaging in patchwork. One necessarily has to if the effort is done within the confines of existing law and state practice.

No such constraints are present when the new regime on mid-ocean archipelagoes is envisaged as part of a grand design for a new Treaty on Ocean Space. An example of this approach which merits our attention is The Draft Ocean Space Treaty presented in a working paper submitted by the delegation of Malta to the UN Seabed Committee. In this document the basis for a special regime of archipelagoes is laid down as follows:

> 1. The jurisdiction of an island State or of an archipelago State extends to belt of ocean space adjacent to the coast of the principal island or islands the breadth of which is 200 nautical miles. The principal island or islands shall be designated by the State concerned and notified to the competent organ of the International Ocean Space Institutions. In the event of disagreement with the designation made by the archipelago State any Contracting Party may submit the question to the International Maritime Court for adjudication.
>
> 2. The jurisdiction over ocean space that may be claimed by a State by virtue of its sovereignty or control over islands, other than

those referred to in paragraph one, shall be determined in a special convention.[12]

We can see from the above quotation that the authors of this draft proceed from premises entirely different from those based on a more traditional approach.

Whatever may be said of this approach, it has the merit of originality and the courage to leave the beaten path. It remains to be seen whether a sufficient number of participants of the coming International Conference of the Law of the Sea will be persuaded to follow this bold example or whether the majority will still prefer old familiar—if less exciting—ways. Whichever course is taken, the question of mid-ocean archipelagoes in my opinion merits the most serious consideration.

## Supplementary Remarks

*Mochtar Kusumaatmadja*

I wish to thank the Institute for giving me this opportunity to explain our views on the problem of archipelagoes, which is, as the Chairman said, a very difficult one; and even that may be an understatement.

In my paper I made reference to a cobbler; but I think in the question of archipelagoes we need a special kind of cobbler, one that is not tied to the normal six to 12 sizes and triple E widths, but rather a Doctor Scholl-kind of cobbler.

You will perhaps say after reading my paper that the archipelago problem is almost impossible to solve. I do not agree with this, because hope is what drives man in his life; and I think that if the motives of those who are interested in archipelagoes can be explained and understood, and if those who have an interest in a special regime of archipelagoes pay due regard to the interests of the others, then at some time in the future some solution to the problem may be found.

The first speaker made an interesting reference to the role of unilateral action in the formation of international law, or as Professor Ago of Italy said, "spontaneous international law." There is a tendency to view unilateral action in a derogatory way; but if we examine international law, especially the law of the sea, we notice that unilateral action can play a constructive part in the progressive development of international law. One recent and very constructive example is the Truman Proclamation on the Continental Shelf. There was a real need for additional fuel resources, and we have seen that this concept was readily accepted in a relatively short time by the world community. Although the concept of the continental shelf was long ago put forward by, I think a Spanish or Portuguese scholar, Odon de Buen, in a fisheries conference in Madrid, it was not until 1945 that it was put into the form of a legal concept.

Now, I am not saying—or perhaps I am subconsciously trying to say—that the same can be done with archipelagoes; but it is obvious that there are differences. The countries that are interested in archipelagoes are not major powers. They are relatively small countries, and there are not many archipelagic states. They are few in comparison to states having continental shelves. So I think it would be wrong to expect that this concept would receive as great attention as the concept of the continental shelf. That certainly is one very big handicap with which we have to contend.

A second handicap is that as we try to adopt a traditional way of approaching the problem—that is, what I call the way of the cobbler, using the existing tools and instruments given by existing international law—we may find it almost impossible to use this approach, because it is basically a continent-based approach, a land-based approach, in which islands are viewed as mere accidents of geography.

[12] UN Doc. A/AC. 138/53, Part II, Chapter IX: limits, Art. 37.

This is not an accident of history, because the law of the sea originated in Western Europe. It was developed by people of coastal nations, it is true, but their countries were part of a continental land mass, so the tendency in existing international law and the law of the sea to start from land is understandable. We can see this also in the judgment of the International Court of Justice in the Anglo-Norwegian Case.

This is, I think, the basic difficulty in finding a viable criterion for even a definition of what is an archipelago. If we examine the views of scholars, of international learned bodies, and even of the Court, we see that measurements are taken based on existing concepts of international law, or of geographic concepts seen from the viewpoint from land; "twice the breadth of the territorial sea," and things like that.

Knowing this to be the basic difficulty, we must yet recognize that there is a need for an objective criterion. I submit that whatever criterion which starts from this viewpoint is bound to be irrelevant to the question of what an archipelago is, if we take the definition of archipelagoes, as defined for instance in the *Encyclopaedia Britannica,* as "a sea interspersed with islands." The very word "archipelago" is believed to be derived from the Greek "aegeon pelagos," which means the Aegean Sea, studded with islands.

So here is an entirely different concept and an entirely different starting point. Here the sea is viewed as a unit with islands in it. And I submit that this might be a better way of approaching the problem.

Now I agree that although we—and I personally—have been involved in the archipelago problem for many years, we have been involved in it in a practical way. We have not examined it from a biological, geographical, or geophysical way, or from an ecological point of view. But such an approach is not so far-fetched, even the biological approach. Such an approach is provided by the concept of the "bioma," or the "bioma theory," which was put forward at the 1958 Geneva Law of the Sea Conference as the underlying theory for the ECP 200-mile zone. At that time we thought it was a far-fetched theory, but now it seems that the 200-mile zone, at least for resources jurisdiction, seems to be an accepted concept, or in the words of my American friends, perhaps a tolerated concept.

There is a very interesting thing here. We see from the concept of the continental shelf and the bioma theory that there is a part of our civilization, Latin America and the Spanish civilization, which has contributed constructively to the development of law of the sea and international law in general. For instance, one of the early champions of human rights was Francisco de Vittoria. In his "Releciones des Indes," contrary to his contemporaries, he advocated equality for the Indians. This perhaps explains why the attitudes towards these people in those parts of the world is different from that in other parts of the world.

So I submit that in studying international law, and law of the sea in particular, if we want a truly international view to evolve, we should not base it only on what evolved in Western Europe. Of course those were very important contributions, and what was distinctive about them was not only their rational content, but also a materialistic content. This is a very important ingredient in the advancement of human civilization and culture, because it provided the driving force for the development which resulted in world civilization as we know it today.

However, I think that if we want to create a world in which all people can feel that it is their world, and not only that of part of mankind, that all civilizations have a contribution to make. This picture is now being complicated with the emergence of the developing countries after the Second World War. This is one of the reasons why I think the coming Law of the Sea Conference, even at its preparatory stages, cannot be compared to the Geneva Law of the Sea Conference.

I have been to both the 1958 and 1960 Geneva Law of the Sea Conferences, and I also have had the privilege of attending the UN Seabed Committee sessions since 1969; and I must confess that I do not understand much about the international law of the sea as it stands today. I thought I knew something of the subject.

I think the problem we face in the case of archipelagoes is only a part of a bigger problem, of an utter bewilderment with this process of rapid change. The thing is to find in this process, in this welter of change, some straws to which we may cling to try to bring order. It is my comfort that after attending the UN Seabed sessions, we seem not to be alone. In 1958 and 1960 we were very much alone; but now more people seem to be sharing the problem, so we feel much better now than in 1958.

Because I have this basic difficulty with the land or continental-based approach, it is difficult for me to accept, for instance, distances between islands which are based on measurements like "twice the breadth of the territorial sea." I share here the conclusions of Jens Evensen when he said the complications, even at the purely geographical level, are so

great because of the great diversity of archipelagoes that he hesitates to offer a particular limit. In this context I have not yet been able to study in depth the excellent paper by Dr. Alexander and the Geographer, Dr. Robert Hodgson, which seems to be a very substantial contribution on the matter. I received it just two days ago and it was impossible for me to incorporate it in my paper.

Again, I think if we proceed from these criteria it will be difficult, because even if one adopts the 40-mile measurement, then by definition—by this definition—Fiji would not be an archipelago; and this is something which is very difficult to accept, because Fiji is an archipelago. Besides geography we must take into account geophysics, ecology, and other considerations like that, in addition to the very important point of the political criterion. Surely we do not want to say that Fiji is not an archipelago. I would be very reluctant to agree to a criterion which would have that result; and that goes for other island groups which historically and by the feelings of the people who live there are clearly archipelagoes.

Here I may perhaps mention one term in our language which expresses this perhaps subconscious feeling. In our language, as in many languages, we have a word for "native country." The French word is "patrie," the German word "das heimat"; in Indonesia, it is "tanah air," which means "land and water."

This, I think, is a very strong argument for the viewpoint that we should adopt a different way of looking at things, because this is a word not coined by lawyers who have made comparative studies, not by geographers, but this is a word that comes from the people who have lived in these islands and these archipelagoes, and they feel it is part of them. The water is part of their everyday lives. They depend on it for their living, and it is a very real thing, and this impresses me more than any argument, especially if it is made by lawyers. If a simple man says "tanah air" (i.e., land and water), then I think he *means* it, because he is too simple to look for specious arguments. This may not be a very good legal argument, but this is a thing we firmly believe in, and this is, I think, why the search for objective criteria is so difficult. I still concede that we do have to have objective criteria.

The criterion here should be, I think, to see whether an archipelago, historically and considering all the other factors involved, is an archipelago or just a number of islands. I agree that not just any number of islands strewn over a wide expanse of ocean may be considered as an archipelago. So I may be accused here of introducing a very uncertain element, but this is typical of the problem we face. This is, I think, the reason why all these learned people have concluded, after studying the matter, that they could not reach any objective criteria on what is an archipelago. Even the International Law Commission was baffled by the problem.

I think I have made it clear that based on the existing law, on the views of scholars and on accepted state practices (which are sources of international law according to Article 38, paragraph 1 of the Statutes of the Court), it is impossible to construct right now a regime of archipelagoes. We can perhaps by analogy and interpretation try to adapt the judgment in the Anglo-Norwegian Fisheries Case, or Article 4 of the Geneva Convention on the Territorial Sea and Contiguous Zone, to the matter; but here again I have tried to show that you will run into difficulties.

Does one then have to conclude that we don't have any archipelagoes at all? Do we just have to view them as separate islands? This is not the answer either, because these are geographical, geophysical and perhaps ecological units, and certainly in some cases political units.

I think I have confused you enough now, and I should not go on; so I will continue my statement by trying to explain the Indonesian case, where these difficulties will be reflected.

In 1956, the Government of Indonesia established a committee to revise the law on territorial waters. After considerable study, two proposals were submitted to the Government, one that would establish a belt twelve miles wide around each island, and one that would establish a similar belt around the whole of the Indonesian archipelago. After considerable debate and study of the matter, the Government decided for the archipelago system; and on December 13, 1957, a Declaration was issued containing three points:

1. The territorial sea was to be extended from three to twelve miles.
2. It was to be measured from straight baselines drawn from the outermost points of the outermost islands of the archipelago.
3. Waters within the straight baselines would be internal waters, but open to innocent passage of foreign ships.

The Declaration was promptly protested by a large number of nations, among them the major maritime powers. We felt at the time that this was a serious thing indeed, and as the Geneva Conference was nearing, we decided to wait with the enactment of the law and try to seek a solution through the Conference. Perhaps we were a little bit optimistic in doing

so, and rather naive, I might say. But at that time we of course tried, as a new member of the United Nations, to show that we were responsible members, trying to find a solution through the conference process.

It is a matter of record that very little attention was given to the problem at the Conference, although everybody agreed that it was something which required attention. In the end I think the delegate of the United Kingdom urged the Conference to study the matter and asked the Secretary to prepare a report on the subject. I do not think that this report has been made.

So we went back and said, "Now what do we do about it?" Because the needs for a special regime of archipelagoes were very pressing. I think perhaps I should explain those needs.

One was our concern with resources. Our people are very much dependent on marine resources and fisheries, especially those which have a close connection with the shelf and the land. Our fisheries are basically subsistence types of fisheries, and fish is an important source of protein. We are a poor people; cattle breeding is a very expensive technique for increasing the protein content of our diet, and fish seems to be the answer.

But the history of Indonesian waters, even during the Dutch time, has shown that we have had to compete with others. The spectre of competition with more advanced fishing countries, with modern techniques, made us afraid that there was just no possibility of having an equal opportunity if we proceeded on that basis.

I do not have the statistics at hand (and I know this is a weakness when you face an American audience, because they love statistics) but I would say, if I remember rightly from the fishery man on our delegation, that we are somewhere about Number 10 or 11 on the list of the world's fish catch and landings, even above the United Kingdom. That gives you an idea of how important fish is, and increasingly so, for us.

Socioeconomically, fish is very important to us because hundreds of thousands of fishing families depend on it. Since families tend to be large, it would run into a few million people. They use very simple fishing gear. They go in little boats called "praus," and wait for the wind to be able to go out to sea; if there is no wind they cannot go, because very few of them have motors. They have nets that are very primitive, and short, so they can only reach to eight meters. Despite these primitive techniques, they manage to catch a great deal of fish. But imagine that you are a fish, and you see a net passing over you at eight meters. All you have to do is swim underneath it, and you can laugh at these poor fishermen.

So, these are the kind of people we have to protect; and if you are the government of a country like that, and you fought for independence, and you lost so many lives, and there is another power that tries to make you a puppet, and you lose another 200,000 to 300,000 lives, and you cannot even guarantee that the people will catch fish as they used to, then you have no business being independent, I would say. So that is one thing.

Another economic resource is minerals and oil. At that time we did not even know there was to be oil, but we felt that it should be included, nevertheless, inspired by the Truman Proclamation. So that was included also.

Another important economic interest is intra-insular communications. Here I am not speaking of big ships, but of small craft, wooden craft, of people who go from island to island to visit their neighbors and to try to sell their produce. It is pathetic to see these "praus" carrying copra, which they sell for a few dollars, and then go home over so many miles. That is how they live. There are hundreds of thousands of these craft. Now, when we had trouble with the Dutch over West Irian, there used to be Dutch destroyers plying the waters, and they said: "We are on the high seas, and you can't stop us." They did not actually shoot, because they were on "innocent passage" to Western New Guinea; but it was enough to disrupt inter-island communications, or at least there was great potential for it. People just got scared, because they heard from Djakarta that "we are at war with the Dutch," which didn't really concern these simple people who could not even distinguish Dutch from Americans; but they were told there was a war going on, and they saw these ships. What did it mean? Did they have to stay at home and not do as they used to do? This was very serious.

Then there are warships that are not so innocent. At this same time we had dissident groups trying to secede from the Republic of Indonesia. Our friends from the South Moluccas had been promised things which the Dutch could not fulfill, and they got frustrated and tried to secede. We suspect they got help from outside. There was another thing going on in Celebes and Java; this time it was a group trying to create an Islamic State. They had their supporters too. And in 1958, if you remember, there was a great rebellion in Sumatra and the Celebes, and this, surprisingly, was supported by a power which we considered our friend; though the support was given by the unofficial arm of that government. Eventually we shot down a pilot, and he told his story—because

we were very nice to him—and it all came out. It was of course very embarrassing all around. So this is the problem. It is a real security problem, not in a global security sense, because we do not have global responsibilities, but in a very tangible national security sense.

So this is another aspect which I think moved us to go ahead with the archipelago regime in spite of the great opposition. We knew what we were up to. When we heard those cables coming in from all the big countries, saying, "What are you doing?!" we were really impressed and apprehensive. Don't think for a moment that we were not. But what could we do? It was a matter of survival; our country was falling apart.

So that was the situation; I am trying to give you the atmosphere in which these decisions were made. I think you can understand the way our politicians thought. They envisaged Indonesia being carved up into several parts. These rebellions were going on, supported from outside. Then they were confronted with these two drafts of the Territorial Waters Revision Committee, and were shown on the maps where one showed a solid unit of the whole Indonesian Archipelago, and the other a map of the national territory full of holes—or gaps of "high seas" in between the islands.

The answer to the question of defending or policing this was by no means easy. There are 13,000 islands, which to a certain measure can be grouped; still there are many groups. Someone said, "The man who has to police this at a certain moment, what is he to do? Does he know his position?" The answer was that at each time one has to ascertain whether one is inside one's own waters or on the high seas.

Some people thought we should create functional zones, one for this and one for that, in order to adopt it to traditional international law. But then we would have a territorial zone, a fisheries zone, perhaps a pollution zone, and one for customs; and we don't have that many men. Then there was the political thing; as the politicians saw the country falling apart, they said, "We must have a concept that shows these simple people physically that we are one." And of course the Air Force had to have their say in the matter; they said, "We don't want air space that is full of holes; how are we going to fly in an airspace like that?"

So I think the archipelago theory makes sense. The people had to be shown in simple symbols that Indonesia was one. We had just gotten our independence, and we had all these big boys interfering, trying to keep us apart because they had their own designs. So this archipelago principle seemed to be a good thing for the important political unity of Indonesia.

That is how, on December 13, they decided to go ahead in spite of the tremendous opposition. I hope you understand and are assured that it was indeed a very difficult decision. Normally when you are a newly independent country you do not try to fight with everybody; you try to be friends with everybody.

Having explained the motivations, we have to think of the impact on others. We have been accused of grabbing the sea by our esteemed colleague, Mr. Arthur Dean, who at that time was chief of the U.S. Delegation. He accused us of "grabbing the sea for yourselves," and he was talking about greed. We could not understand that; we were only trying to keep ourselves from falling apart, and here we were accused of all those bad things. That is why, in our Declaration, we gave an assurance of innocent passage. At that time there was not yet this idea of free transit; and we were thinking how difficult it was even to keep our country together.

I thought that there must be a double standard somewhere, historically; because these fellows used to come from far away, using "freedom of the high seas," and start grabbing land! Not seas, but land. And nobody said a word. My history teacher told me that in 1812 they had a conference in Berlin and these big fellows carved up Africa as if it were nothing.

Well, now we are living in a better world. You try to do these things now, and find that you cannot do it any longer. But what I am trying to say is that what we did was not to bother others, but just in self-preservation; and we ask for your understanding of our position.

Now as to the impact; we can prove that we never interfered with navigation. Even if we wanted to, physically we cannot; and it is with great comfort that I see in the Convention on the Territorial Sea and Contiguous Zones that as far as warships are concerned, all a coastal state is required to do is ask the warship to leave its waters. It does not say that you have to enforce and shoot at it. This is all we do. In fact, all we ask is notification, so if they are nice enough to say, "We are going to pass," then warships can pass.

Notification is important and useful also for the passing warships themselves, because we have been bothered by rebellions; we have one right now in Borneo. It is supported from outside, we know; it is a remnant of the Communist rebellion, and with the Malaysians we are trying to do something about it. So in our archipelago there are security zones, and

we would like to spare our friends who may want to pass submerged, spare them from measures we might take against those who are not friends, who try to hide submerged. We are not a big power, we are not very sophisticated; but we have planes and we can drop depth charges. If he does not say he is around, and we drop them on the wrong fellow, that would be too bad!

You may be assured that island people are very simple people, and really very pleasant people. This business of picturing us as grabbing the sea or trying to interfere with navigation and all that is simply not true. We do not have the means; we don't even have the intention. Of course we want to sort things out with the big fellows, but we think we should try to sort it out with the small fellows first, our neighbors. That is where the continental shelf negotiations come in, and our neighbors find that we are reasonable. They still fish there, they still go through our waters, and I was successful in negotiating five agreements on the continental shelf.

This does not have much to do with archipelagoes, but there happens to be a similarity, because the measurement is the median point from the outermost islands. We did not use baselines because we knew that there is a certain allergy, I think, to straight baselines beyond certain lengths. It is like trying to impose your view on your neighbor. It seemed to be a logical thing to use the "outermost islands" principle. At some places we won and some places we lost; in the Strait of Malacca we lost a lot, because the Malaysians happen to have an island near our shores.

In the process there seems to have evolved a new concept of continental shelf boundary delimitation, and that is the median line measured from the outermost islands, So you see you can evolve concepts by accident also, not only in the study with a lot of books.

That, I think, is an explanation of some contemporary problems of the law of the sea in very simple language. I hope you agree with me, but even if you do not agree, I hope at least that you understand.

## Discussion

**Thursday morning, June 29**

*BAYAGBONA:* I speak with reference to the concept of the patrimonial sea, as presented by Ambassador Andres Aguilar.

I want to stress that it is a concept designed to protect some vested interests, which is fair enough; but we should not adduce wrong reasons to justify it. The concept will kill free distant-water fishing, and we should not give as justification for this the reason that distant-water fishing is a monopoly of the developed countries.

In fact, advanced technology is no more the preserve of developed countries. As the last speaker just said, many developing countries now have the capability of dropping depth charges. We find that advanced technology is available through multilateral technical assistance, through bilateral agreements on technical assistance; it can even be bought or hired, and above all, it can be acquired and it is being acquired.

So the fact that the developed countries are dominating the distant-water fishing should not make us take actions which will permanently work against distant-water fishing in the hope that we are being partial to developing countries, because developing countries will increasingly acquire the ability and the know-how to get into distant-water fishing.

My country is a developing country, and we have distant-water fishing capability; and so we do not want to run into difficulties which will obviously arise from the idea of a patrimonial sea, if this were adopted.

I will therefore conclude by congratulating the Ambassador on his able presentation of the concept of the patrimonial sea, but must stress once again that he spoke for himself, and probably for some Latin American countries, and certainly not for all developing countries.

*AGUILAR:* If I may, I would like to comment briefly on the statement just made by the gentleman from Nigeria.

First of all, I do not have all the facts and statistics at hand, but if I remember correctly, three-quarters of the total world catch are taken by 18 nations, and the fact is that the fishing fleets of some highly developed countries like Japan, the Soviet Union and others represent in fact a big share of the total catch. So there is no question that at present there is a situation in which the few countries that have the financial means and know-how benefit from a larger proportionate share of the total resources of the sea than the one they would be entitled to if there were a fairer distribution of these resources.

I do believe that it is in the best interests of the developing countries to have an exclusive economic fishing zone in which reserves may be held for the needs of their own development, which does not exclude the possibility of sub-regional approaches.

Yesterday it was pointed out that perhaps the solution to the questions of allocation of resources in the cases of neighboring countries that have different possibilities would be to integrate, and I believe this is a way out.

May I say now that at the recent meeting in Santo Domingo, some countries were reluctant to agree to the concept of the patrimonial sea, with the argument that they would have very little to gain from this concept and they would lose the freedom to fish somewhere else. In reply to this argument we pointed out to them that they would not be in a position to compete with the fleets of the developed countries, and that we would be much better off and it would be much easier to arrive at an agreement among all the countries bordering the Caribbean Sea, than to have a worldwide agreement.

By the way, I agree with the comments that were made yesterday that all these fishing agreements have not been very successful, and I do not think they would be successful on a worldwide basis either. It could be that these regional approaches would be a better answer to the questions of good management of the resources of the different areas of the sea.

So, while I respect very much the opinion of the gentleman from Nigeria, I insist that in fact there are a limited number of countries that take most of the living resources of the sea.

*JAWAD:* I would like to address myself to some tentative viewpoints regarding the needs and interests of the developing countries; but before doing so, it might be helpful if we cast a quick glance at the historical developments that have taken place in the international law of the sea.

The fundamental principle of the freedom of the high seas is nothing more than a reflection of certain historical facts, interests and realities. The interests of nations had once been confined to maintaining the freedom of navigation; but in reality it had never been possible to appropriate either the high seas or the continental shelf or the ocean floor.

Now that the interests of mankind have long since been changed and established, the appropriation of any portion of the continental shelf, or even the ocean floor, is rendered a possible reality.

New facts and concepts necessitate new rules and regulations; but should we intend to benefit from the wealth of the sea beyond the national limits by relying on the *lex lata*, then this would lead to injustice and confrontation. Yet, to suggest an interim regime would also lead to the same results.

Therefore, it is vitally important to wait for the formulation of *lex ferenda*, because ignoring the so-called Moratorium Resolution of the General Assembly constitutes violation of the principle of good faith, as well as the principle of *sub judice*. For, in fact, it is difficult to apprehend how the matter could be dealt with by any subject of the international law while it is still under the General Assembly's consideration. Indeed, the interim regime itself would undermine the whole scheme of *lex ferenda* that might be reached by the United Nations.

In my opinion, one of the reasons behind the 1969 Resolution was to enable the conflicting views of states to reach a compromise. To my mind, the needs and interests of the developing countries and all other nations could have been better served by establishing an international machinery to embark on the direct exploitation and exploration.

Should this, however, be not feasible at the present, the alternative would be to establish an international body associated with regional and sub-regional organs entrusted with the function of control and inspection, and with collecting taxes levied from the revenue of the sea. Such taxes could be distributed among the developing countries as compensation, and for establishing technical programs.

Two factors are reckoned to be considered as basis for this proposed distribution: first, the length of the coast of the state; and second, the volume of population.

This proposal would reasonably allow the shelf-locked and the semi-shelf-locked countries and even the landlocked countries to share in the common heritage of mankind.

*KNIGHT:* My name is Gary Knight; I am Campanile Charities Professor of Marine Resources Law at the Louisiana State University Law Center.

I have one question each for Ambassador Aguilar and Mr. Oxman.

It seemed to me that the respective positions you expressed here today are quite compatible in most respects, in spite of the fact that there are some semantic differences and certainly some differences in perception of priorities between developed and developing countries.

There are two areas, though, in which there seems to be some substantial divergence. First, Ambassador Aguilar tends to view coastal state interests in adjacent marine areas as an essentially economic proposition, while Mr. Oxman sees broader political implications in the situation.

Second, Ambassador Aguilar couches coastal state interests in terms of "rights," even "exclusive rights," whereas Mr. Oxman views them as duties or obligations.

Now, focusing on these differences, I have two brief questions. For Ambassador Aguilar: would the concept of compulsory dispute settlement be compatible wtih your notion of the patrimonial sea that you have expressed today?

For Mr. Oxman: particularly in view of the infatuation of the United States with the notion of "creeping jurisdiction" (which is the underlying basis for the basically international approach embodied in the U.S. draft seabed treaty), would you see the *coastal state* orientation expressed by Ambassador Aguilar as being potentially acceptable to the United States or to developed countries in general?

*AGUILAR:* Before I respond to the comments just made by Dr. Knight, I would like to add something in reply to the statement previously made by our distinguished friend from Nigeria.

In one part of his remarks, he made the comment that I was talking on behalf of myself and perhaps in behalf of some other Latin American countries.

I am talking in fact as a person, as an individual, and I suppose everyone here in this hall is talking on his own, not as a representative of any institution or government. Nevertheless, I would like to point out that this is a reflection, of course, of the official positions taken by my own Government and by a number of Latin American governments, and that I have quoted extensively from the Santo Domingo Declaration.

I would also like to add that this is not only a Latin American position. There are some African and Asian countries that have come forward with similar, or even identical proposals in the UN Seabed Committee. If my recollection is right, Kenya, and other African states from the East Coast at least, have taken a very similar position. I would say that our differences are only a question of semantics; we have been talking about the patrimonial sea and they have been talking about exclusive economic zones, but the fact remains that our concepts, and the concepts expressed by these African countries in the Seabed Committee, are quite identical.

I would also say that this seems to be a concept shared by an increasing number of Asian and African members of the UN Seabed Committee.

Now, going to the question of Dr. Knight, I consider the concept of a compulsory settlement of disputes compatible with the concept of the patrimonial sea. I believe I have pointed out in my presentation that if we are to have, as we should have, spelled out not only the rights but also the duties of the coastal states, we would of course need means and procedures to settle the disputes which are bound to arise from the conflicting viewpoints on the nature and scope of the international norms.

I don't want to elaborate any further, because we are in a stage in which we have to have the situation clearly defined to start with, before we get into any details; but I do believe that this is something that will have to be discussed in depth, and speaking in a personal capacity, I will say that this is perfectly compatible.

*OXMAN:* I am glad that Professor Knight asked the questions that he did in the order that he did. My answer to those questions would have to turn in important respects on the issue of compulsory dispute settlement, because this goes to the heart of the problem.

The difficulty is that—and it is almost more psychological than it is juridical—if all you wind up with is a concept of exclusive coastal state property rights over living and non-living resources, for example, in a zone, it becomes quite easy, if you are going to develop the law on the basis of argument, to say that this jurisdiction over resources necessarily carries with it jurisdiction to vindicate the resource right.

From there you go to the next logical step, and this is a step in the problem which was raised in the Santo Domingo Declaration, of saying that if you have jurisdiction and ownership of fisheries, then you have to protect the fisheries from pollution. In order to protect the fisheries from pollution you have to regulate pollution with a view to preventing it or abating it.

If you regulate pollution, then you are regulating navigation. If you are regulating navigation, I would be interested in knowing precisely what is left of the fundamental freedom of the seas that are supposed to be preserved by the concept.

Now, that is not to say that there are not ways of solving that problem. Pollution regulation necessarily involves some limitations on the way in which ships are constructed and the way in which they behave, and these limitations are going to be necessary if the environment is going to be protected.

I think our point of view would be that the nature of navigation, from the point of view of ship construction, from the point of view of the fact that ships wander over wide areas, and from the point of view that the coastal state cannot protect itself from pollution simply by regulating pollution off its own coast, because of currents, indicates that the substantive standards that would be applied in this area would probably have to be international for a variety of practical reasons, viewed from the coastal state point of view as well as the maritime state point of view.

I think you are right also in suggesting that we see political factors in the economic zone as well as purely resource factors. One of the problems which concerns a country like the United States, which is interested in stability and harmonious relations between states that are friendly with the United States, is that our experience has been that the extension of coastal state resource jurisdiction leads to, or can lead to, a number of highly emotional boundary and division of resource problems between neighboring coastal states that can produce a significant disruption in their bilateral relations and in regional stability.

This is an aspect of the problem that Dr. Bayagbona addressed.

I think I am practical enough to say that I would not be happy in relying on good will to solve the problems—that is, to say that we will give the coastal states the jurisdiction and then they will negotiate their regional arrangements with each other —because those negotiations in a practical sense will then turn on who has what to give whom, and they could become quite difficult.

I think it would be important, as Ambassador Aguilar has suggested, to look at the regional problem, particularly in regions where there are a lot of coastal states with relatively small coastlines, in a political sense and try to make some provision for that political problem in the law of the sea treaty.

I note that in the history of the Continental Shelf Conventions, they very easily added continental shelf rights to islands as well as continents; no attention was ever given in that negotiation to the fact that the creation of continental shelf jurisdiction was going to lead to far more serious disputes over land areas than had existed in the past, because jurisdiction over a piece of coastline or an island could well determine jurisdiction over a very valuable continental shelf area.

I would hope that in this negotiation we would not disregard that particular element of the problem.

*ESTERLY:* Professor Henry Esterly, of New York City Community College. In spite of the fact that one of the previous comments from the audience, by my colleague Gary Knight, pointed out that there probably is a larger area of compatibility between the two positions which we heard this morning, I beg to disagree and to point out that there is a much larger area and certain factors which are entirely incompatible.

Also, I would like to point out that the distinguished Ambassador from Venezuela, representing a country which has been in the forefront of many developments concerning the law of the sea, seems now to be striking out on a path which is entirely contrary to some of the proposals previously made on the future development of international law for the world community.

By this I mean that, Number 1, we have the principle of the common heritage of mankind which is being—if not completely, anyway partially—disregarded in the recommendation and explanation concerning the patrimonial sea. What is going to happen to a large area, or to a relatively large quantity, let us say, of oceanic resources which will now be removed from the common heritage principle?

Number 2, I can see no way in which the Santo Domingo Declaration and its major principle enhance the development of international law on a multilateral basis. Certainly this is one of the points which I think Bernie Oxman has brought out, that principles of law preferably are developed on as wide a *multi*-lateral basis as possible.

Multilateral agreements are less likely to be encouraged when each state is still given the right to establish its own territorial sea limits during what is called an interim period.

*AGUILAR:* Let me refer to the first comment that was made just now, the question of the common heritage of mankind and whether the proposal of the economic zone up to 200 miles limit would subtract resources from this pool.

First let me point out, that the concept of the

common heritage of mankind applies by the very definition of the Declaration of Principles to the seabed and ocean floor beyond national jurisdictions, so the first question that we have to bear in mind is that there is no agreement yet on the limits of national jurisdiction, and this is a matter which still has to be defined.

Our proposal is one way to define what is within national jurisdiction and what is outside such jurisdiction, and we claim that the 200-mile limit will be the best and simplest way to define both the areas under the national jurisdiction and the areas under international jurisdiction.

This brings to my memory a very important statement made by Dr. Pardo. He came out with the idea that, after listening to many statements on the question, he had finally come to the conclusion that this was perhaps the best way to define the boundary between national and international jurisdiction.

It is true, of course, that many of the resources that are economically and technically exploitable at present will lie within the national jurisdiction, but the fact is that the area that would be outside national jurisdiction is enormous, and we don't completely know yet what are the resources of this area. I believe that the more we know about it the more we will find that this large area also contains a great deal of wealth.

On the other hand, I would say that at least some of the countries that have put forward the proposal of an economic zone have also taken into consideration the fact that besides the coastal states, there are the landlocked states, that would have to have compensation, so they would also benefit. The whole international community, coastal and non-coastal states, would benefit if our proposal to give the landlocked states a share of the profits is accepted. According to our proposal the landlocked state would then share in the profits not only in the international area, but also in the economic zones. Thus, we will be applying to these areas the concept of the common heritage of mankind, because all states will receive a share of the benefits in a different way, of course.

Instead of vesting the management of the resources of the whole area in an international authority, there will be a sort of "custody" or delegation of powers from the international community to the coastal states to manage by themselves that part of the area adjacent to the coasts up to 200 miles. There would only be a difference in the way it is managed; but in fact, the common heritage of mankind will apply to both the economic zone under national jurisdiction and to the international zone, with the difference that it would be a different kind of mechanism or machinery.

There is one other thing I would like to say. The gentleman from the University of New York said that this was sort of taking away what already belonged to the international community. Let me remind our colleague that there is under existing international law the concept of the continental shelf, and under this concept, under the rights that have already been vested in coastal states—by the initiative which was taken by the United States itself—the national jurisdiction has already extended to the continental shelves, which in many cases will extend even more than the 200-mile limit.

So actually, what our proposal tends to do is to establish a uniform system of norms for the seabed, the sub-soil and the superjacent waters and avoid the difficulties of dividing the resources of species, whether this is a resource found in the soil or subsoil thereof or in the superjacent waters. I think it will be much simpler to have a single zone in which all the resources will be allotted to the coastal states.

My final point is this. Both Mr. Oxman and the previous speaker showed a great deal of concern over the possibilities of disputes arising from the implementation of this proposal.

I would say that the same disputes will arise anyway, in connection, for instance, with the delimitation of the territorial seas, where neighboring states may have lateral or frontal delimitations. As a matter of fact, the question of delimitation will be only a question of extending the limits of the territorial sea out to the distance of 200 miles where that is geographically possible.

I was about to say that I was moved by the concern of the United States on the question of the possibility of having disputes arising from this question, but I think that the developing states will run the risk of having all the disputes, and I am sure that they will be able to settle these disputes by themselves without any outside help.

I also think that there is a great possibility of settlement through regional or sub-regional agreements of any differences that may arise in this connection. I think the movement toward integration and closer cooperation between states of the same area is such that in this area also we will certainly be able to find grounds for agreement, and for strengthening the relationship between states in the same region.

*KUSUMAATMADJA:* There is one thing I would like to add. A question was put to me about the Straits of Malacca by a student, Robert Smith. I

want to dispel a notion that was expressed in a pamphlet by "SOS" [Save Our Seas] which seems to be a new institute also concerned with the law of the sea. It says here:

> Malaysia and Indonesia, fearful of damage from pollution by oil tankers, are talking of operating the strategic Straits of Malacca as a private canal, to the consternation of maritime powers Japan and Russia, for whom the Strait is of crucial importance.

Well, this statement is only partly true, as a lot of things are. The first part is right; the second part, I think, is incorrect. It is simply not so.

Why did we react this way? I should tell you that at some point at the IMCO, toward the end of 1970, there was a draft proposal circulated to have an international regime of some sort over the Straits of Malacca. It was envisaged that it would be run by a board the members of which were shipping maritime powers; there was mention of the riparian nations of some sort as an afterthought, so to speak.

Of course this really upset us, because as you can rightly see the Straits of Malacca are strategically important to us. At least we would like to have been consulted, and here was this thing circulated at the IMCO meeting; although it must be added that the paper was an unofficial document.

For one thing, the IMCO is a technical, specialized agency; and here a draft was being circulated that would have far-reaching political and strategic implications, and we were not even consulted.

So, in a panic, we made the statement that if any regulation of the Straits of Malacca is to be done, we would at least like to play a part in it. If it is a question of navigational aid or traffic separation lanes, especially, the three of us, Malaysia, Indonesia and Singapore, could do that ourselves. If IMCO wanted to help they could provide us with the technical assistance which admittedly we will need very much.

We see no need to create a supernational agency for this, especially if we are left out or are relegated to an insignificant position. So, who is trying to make a private canal out of the Straits of Malacca?

This is a correction to a statement made by this S.O.S.; it surprises me that they should come out with such careless statements.

*OXMAN:* One brief comment.

There is going to be no way to achieve a universal or near-universally respected law of the sea without dealing with some of the very important problems and issues that divide us.

Among these are the kinds of problems that divide developed countries from developing countries; there are also the kinds of problems I think Professor Mochtar indicated, that divide the perspective, for example, of an island state from the perspective of a state that is interested in navigation.

But if too much emphasis is placed on this, if the attitude toward resolving the respective problems goes too far and if it is too easily forgotten that what is involved in this negotiation are ultimately 100-some odd states, all of whom are states and all of whom have very important stakes in the outcome, then I am not at all sure that we can succeed.

Thus I would like to stress the importance of constantly bearing in mind that in certain very fundamental senses, every state participating in the negotiations is a member of the international community and must see to it that a system of order emerges that serves the general interests of all combined.

Having said that, I want to stress again that that can not happen unless the specific problems of different types of states are also taken into account. I certainly think both can be done.

# AN APPRECIATION OF THE CONFERENCE DISCUSSIONS

## Remarks

*Chandler Morse, Professor Emeritus, Cornell University, Ithaca, New York*

**Thursday afternoon, June 29**

I am not sure that I should express gratitude for the opportunity to try to perform such a difficult task as an appreciation of a conference dealing with so many complexities and having such a high level of input of information and ideas. But I undertook to do so and I shall do my best.

I think it is clear to all of us that in this conference a large number of things have been going on at the same time. There have been many different degrees of concern—concern about smaller things and bigger things—and there have been many different types of issues. For all these reasons I felt it necessary as time went on to try to order my thoughts, to sort things out. I want to try to present some of the results of that this afternoon, if I can, in the short space of time that I ought to take.

I want particularly to talk about the types and levels of institutional arrangements that have been discussed at the conference, and also about the different processes by which decisions are to be reached —decisions concerning the form these arrangements should take and operational decisions by whatever new organizations and mechanisms may be created. Toward the end I shall talk about some of the issues, making points about them that I think need special emphasis.

It seems to me that we have been talking about five levels of institutional arrangements.

One is the philosophical level, the level of principles; that is clear enough.

The second is the legal level—the level of rules, the questions of law.

At a third level we have been discussing various types of regulatory mechanisms—the new institutions and new organizations that should be created—in order to make the rules work.

Fourthly, there have been discussions concerning control of operations, of how control over the new regulatory mechanisms should or would be determined and policies established. This is the essentially political question of how to allocate participation in the regulatory processes, of who is to make, or dominate, policy.

Finally, not much dealt with at the conference but very important indeed, is the question of actual practice. Who will make the operational decisions? How will the actual operation of the new system differ from the way it was designed or conceived to operate? Will the actual operating results conform closely to or depart widely from the intentions and expectations embodied in the formal institutional arrangements?

There have been a number of important papers dealing with philosophy and law, and they have frequently been referred to in the discussion. However, as Mr. Anand said, there is no agreement as yet on philosophy and principles. Therefore, except to note that (for reasons which came through with varying clarity) representatives of developed countries seemed less enamored than those from developing

countries with the doctrine of "common heritage," and more resistant to its direct or indirect embodiment in law, I shall not undertake to trace, much less disentangle, this ravelled philosophical and legal web. Let me begin, instead, with a discussion of organizations and mechanisms.

Almost the only scheduled participant to deal with this question was Mr. Mikdashi, who spoke especially about possibilities of joint ventures and multinational (or trans-national) ventures. There was some discussion from the floor of these possibilities, but less than I think desirable.

On the matter of control, considerably more was said. The general principle was enunciated that the international regime must be controlled by all countries and not by a few. With reference to the interdependence between policy control and the administration of regulatory mechanisms, someone observed that simple licensing of operations, which had been suggested as a regulatory device, would not suffice because it would undermine the principle of control by all countries.

In the matter of practice, the question of actual operating results versus intentions, hopes, and expectations was touched upon less than it deserved to be. There was a question of timing, of whether it is likely that nodules from the seabed will be mined sooner or mined later. Also discussed was the question of whether the revenues from exploiting the oceans would be large, small, or negative. Relevant in this connection was a question about the effect of marine mineral production on the future trend of prices and therefore on revenues. More important, however, was the sticky problem of technological transfer, where insufficient attention was paid to the differences between effective transfer and what I shall later characterize as "pseudo-transfer."

All of these matters relate to substance as opposed to form. Once you have set up the forms and mechanisms of control the important question is whether what actually happens in practice will turn out to be close to or far from what was anticipated at the beginning. One must therefore be wary of expecting too much from formal institutional arrangements. What actually happens will depend on substantive decisions.

There are several processes by which it has been proposed that conflicts may be handled. Which processes will actually be employed seems to me to depend more upon the nature of the issues, the kinds of conflicts with which they must deal, and the powers capable of mobilization by opposing interests than upon the formal institutional arrangements created to deal with them. Failure to recognize this lent a certain *naïveté* to some of the proposals and discussions.

First, it seemed to me that there was an implicit if not an explicit belief that most of the conflicts would be resolved by processes of reconciliation based upon presentations of agreed facts and evaluations of those facts. Yet we heard expressions of skepticism concerning alleged facts, specifically of doubt that over-fishing, or failure to maintain sustained yield levels, were real problems. The speakers implied that these allegations were "red herrings" put forward by countries with an interest in controlling or limiting the fishing of certain stocks. Agreement on "facts" which are perceived to be biased by self-interest is not easy to achieve.

A second way in which conflicts may be resolved, and which has been referred to indirectly rather than directly, is the process of compromise. It is an aspect of what Judith Kildow referred to as bargaining and tradeoff. She implied that resort to these procedures would be especially necessary because most of the conflicts of interest would be of a kind that could not simply be reconciled. Each nation would therefore find itself in the situation of having to give up something in order to gain something. But nations, like people, like to feel that value received is at least roughly equal to value given up, or at least that there will be a tendency for such equality to be established over a series of exchanges. The presentations and discussions at this conference do not suggest that it will be easy to achieve tradeoffs which are perceived as fair and equitable by all bargaining countries. On the contrary, almost everything that has been said here underscores the great difficulty of doing so. There were a few specific references to what could be given up, or what could be gained, but not very many. We did not often get down to that level of concrete examination of potential tradeoffs between benefits and costs.

What is involved here, of course, are not simply questions of fact, of what one can give up and what one can gain; there are also the questions of what bargaining weapons or sources of power one has other than the simple power to give up one thing and gain another. There are many of these political and technical weapons, some of which were mentioned, such as *de facto* or unilateral acts which would create prior claims or situations, alliances of states with common interests, threats to take these or other steps, and so on. References to pre-emptive acts and bargaining weapons, however, tended to be more casual than their great substantive importance requires.

So we find that compromise will certainly be

necessary, but that it may resolve rather few conflicts, especially if they are of major importance.

This leaves us with a final question about decision processes. If reconciliation and compromise don't work, what happens then? Here it seems to me there were allusions to the possibility that there might simply be confrontations; that is to say, situations which would have to be resolved, or could only be resolved, by some kind of power struggle. In such a case the various states involved in the conflict would be required to mobilize such sources of power as they could lay hold of for use in trying to overcome the similar powers of other countries.

An example of such mobilization, though not mentioned at the conference, is that of the OPEC countries and the OPEC organization. OPEC has systematically been mobilizing power and effectively bringing it to bear in order to change a balance of advantage between the petroleum-producing countries, on the one hand, and the international oil companies and the big consuming countries on the other hand. A similar arrangement among the copper-producing countries has not yet reached a comparable level of effectiveness, but it is cited as an example in Mr. Laylin's paper. If positive mobilization of the OPEC type proved impossible the developing countries could always resort to nonagreement and resistance, which Mr. Anand said could be "like quicksand to elephants." With these and other devices, some of which have been mentioned here, the developing countries will not necessarily be powerless when they become involved in confrontation politics with the developed countries.

Various references to the possibilities of confrontation and power struggle have been made during the conference. Mr. Varon of the World Bank spoke of the developing countries being caught in a power game among the developed countries which are competing strongly among themselves for access to raw materials and for control of the sources of supplies of raw materials. Competition for seabed resources represented, among other things, an effort to escape the increasing power of those developing countries which were the principal current sources of supply of the major industrial minerals. Mr. Thompson-Flores spoke of pressure groups in the developed countries which were trying to lay down through practice the rules they would like to see established, and that this was the meaning and danger of the so-called interim regime. Mr. Anand, in turn, said that U.S. Senate Bill 2801 was coercive with respect to the developing countries. Mr. Schram declared that the freedom of fishing rule was outdated and that the growing move of the coastal states to stop the exhaustion of their fisheries by long-distance fishing fleets could not be halted. Mr. Oxman's remarks this morning about the importance of navigation and over-flight to the United States revealed little sympathy for the peculiar and difficult problems of archipelagoes. Instead, they contained more than a hint that, if other countries do not accept the U.S. stand, it will simply be too bad. To reconcile or compromise differences of interest in these traditional freedoms seemed unacceptable.

Confrontation, though not mentioned explicitly, thus seems to have been on the minds of many conferees. The developing countries could take some comfort in Kildow's judgment that a breakdown in world order might be more advantageous to them than creation of an orderly international regime in which they had but a small voice. The developing countries, it was alleged, could afford and would prefer to wait for a change in the world situation (meaning the balance of power?).

To summarize briefly to this point, I suggest that the conference has been dealing, more unconsciously than consciously, with five institutional levels, namely, the philosophical, legal, organizational, political, and practical. The mechanisms of control and regulation which I envisage as embodied in and governed by whatever new organizations may be created include such devices as an international authority which would be the repository of some of the sovereign powers or freedoms of nations with respect to coastal waters and the open seas; joint ventures; multi- or trans-national corporations; licensing of private operators by national governments (as under U.S. Senate Bill 2801) or by an international bureaucracy, and so on. At the practical level, even if there is that broad international participation at the policy level which is called for by the philosophical principle that the resources of the sea belong to all the world's people, actual regulation and management are almost certain to be dominated by the nations with the most power, including the power of wealth and technical knowhow. Kildow warned, on the basis of U.S. experience with Comsat, that corporations will be dominant. When Herfindahl asked Mikdashi what corporation would operate his multinational ventures, he undoubtedly had in mind the power and influence that accrue to those with the knowhow to make decisions at the practical level.

Since issues and interests will determine how power is used to make actualities differ from hopes and anticipations, let me conclude by talking about a few of those which emerged from these deliberations as potential sources of trouble.

A basic issue involves the sharing of benefits. This

depends importantly on what those benefits are to be. Anand said that the developing countries were more interested in the non-financial than in the financial benefits. There was a partly justified assumption that the problem of financial benefits was the easier one to solve. But we ought to recognize that before agreeing on a formula for financial sharing there must be agreement on what is to be shared. "Financial revenues" were sometimes referred to as if they consisted only of taxes and royalties on operations. At other times, as Thompson-Flores emphasized, "total profits" seemed to be the prospective distribuand. There is a fundamental and important difference between these two concepts. Basic to both, however, is the very sticky question of what are to be counted as *costs*.

Total profits should be defined as equivalent to what the economists would call "rent," "quasi-rent," or "excess profits," these being alternative terms for what is left after the full costs of operation, including the profits that must be paid as a return on capital, are subtracted from gross revenues. The need to assure a return to investors was emphasized by some speakers, but the question of how to set a "fair" or necessary return was never faced.

This issue involves the basic question of what return is necessary to obtain needed supplies of capital. Such a necessary return is a true and proper cost, and must be deducted along with other costs in order to determine the amount of rent. A rent, therefore, is a return for which it is not necessary to incur any costs. Only the rents, therefore, will be available for sharing with those whose claims arise solely from their rights in the common heritage. These rents and shares might or might not be very large. On present evidence, they will be quite small for a considerable time, though this is no reason to ignore the principles of just sharing.

Whether the rents are large or small will be important, however, only to those nations which receive no other income from exploiting the sea and the seabed. The major benefits will accrue to those who supply the services required for such exploitation and who receive payment for the costs of these services. Costs are income to those to whom they are paid, and since costs inevitably account for the lion's share of gross revenues it is much more important to be, or to become, a contributor of cost-creating services than a mere claimant to what is left over after subtracting costs from gross revenues.

Excessive emphasis is often placed on capital services and on the fact that it is only the wealthy who can supply capital and receive payment for doing so. But a far greater benefit accrues to those who can provide the technological knowhow together with the equipment, organizational framework, and skilled personnel to make the technology work. These are the services, and not those of mere capital, which yield the greatest payoffs in the modern world.

Recognition of this fact, and of the association between technology and development, explain the many references in this conference to the importance of providing for technological transfer. Mr. Miles forcefully stressed the developing countries' crucial need to acquire knowledge and capabilities, and Mr. Pinto declared that ways of providing full and free access to marine technology should be among the items included in the negotiations concerning the Law of the Sea. On several occasions, Mr. Bello endeavored to introduce a note of realism. He remarked, first, that the definition of "developing" versus "developed" should be based on levels of technology, especially marine technology. Then, observing that all developing nations could not participate effectively in all questions relating to the sea, he said that each should specialize according to its resources, needs, interests, and so on. Later, going beyond the steps outlined by Mikdashi, he suggested that the developing countries could avoid enslavement by the multinationals only if they would start their own programs of exploration and operation by concluding contracts with anyone who could and would provide the requisite knowledge and capabilities. Kildow agreed with this idea but warned that any nation wishing to follow this plan would have to make a substantial commitment of economic, organizational, and other resources.

Notwithstanding the insightfulness and importance of these and other comments, it seemed to me that there was far too little recognition of the difficulty of achieving effective technological transfer, which requires not only the provision of scientific training for individuals (acquisition of knowledge) but creation of the ability to organize and operate huge technocratic bureaucracies (acquisition of capabilities). How to accomplish these transfers in a truly effective manner is a topic which deserves much fuller exploration and elaboration than it received at this conference. Phrases like "full and free access to marine technology" enunciate a valid principle, but the nub of the problem is the method of effectiveness of transfer, not acceptance of the principle.

Not every nation, as Bello implied, would want or need access to all marine technology, or to all of any kind of technology, at least in the near future. Their needs would depend on their size, location, natural resource endowment, and the like. Switzerland is a technologically advanced country, but is

not now and probably never will be skilled in marine technology. Libya has an urgent need for petroleum technology but not for metallurgical or fishery technology. Selectivity, in short, is essential.

Selectivity is related to another point which needs to be stressed. It is that the transfer of technology is really illusory, and cannot take root, unless the recipients can put the technology to prompt and effective indigenous use. This means that the developing countries need considerably more than mere participation in a joint venture, a multi- or trans-national corporation, or even an international operating agency. If some of a country's nationals participate in a joint venture with a developed country, for example, the developing country may find that it is preparing certain specific individuals for careers with these organizations, individuals who never manage to come home to assist in effectively using the technology because there are no indigenous enterprises which can use their services. They become international technocrats who contribute nothing to transferring technology to the nation as a whole. This is what I call pseudo-transfer, a kind of brain-drain. It would have the form of transfer but would lack the substance.

Another topic that was not dealt with sufficiently, in my view, was the question of the needs and interests of the developed countries. There were specific speakers who addressed themselves to this question, but it deserved somewhat fuller or more explicit treatment because it is necessary to know the other guy and his position, his needs and interests, as well as your own, if you are going to deal with him effectively in a reconciliation, compromise, or confrontation of interests. In particular, more attention needs to be paid (although again there were several allusions to this) to the fact that it is not only the public security of the United States or of other developed countries that is involved, what we call "national security," but also the private security of their corporations and business interests generally. Consider Varon's and Laylin's presentations, and the remarks of Mr. Bernfeld, who predicted that private corporations are going to act no matter what, and who asserted that U.S. Senate Bill 2801 is the only way in which the developing countries can begin to benefit immediately. What lies behind these remarks, and some of the fears expressed in the Laylin paper, is the determination of both the United States Government and its big resource-using industries to make sure that it and they have access to the raw materials, especially the mineral raw materials, of the seabed. Underlying this determination are fears of what is going to happen to U.S. control over raw materials by its own multinational corporations around the world. Laylin was explicit on this.

Let me remind you in this connection that one of the Canadian speakers from the floor said that Canadian mining companies are so afraid that somebody else will control and exploit resources before they do that they mine 20 years too early. It may very well be that the exploitation of the seabed will take place 20 years or more too early, not for economic reasons but for essentially private and national political reasons. Premature exploitation will probably reduce rents, as Herfindahl and others hinted, but it will not necessarily prevent the exploiters from obtaining an adequate return on capital.

In short, it seems to me that we must make a number of distinctions in talking about needs and interests. Most basic are the distinctions between *form*, namely laws and organizational structures, and *substance*, namely *de facto* control (as opposed to *de jure* control), and actual operating results or practices (as opposed to hopes, intentions, and expectations). As Judith Kildow so persuasively argued, those with power have it all on their side when it comes to transforming high principle into low practice. Those who have never been in a position to engage in the manipulation and in-fighting that bring about this transformation of the ideal into the real usually tend to be ignorant of the possibilities, or at least to underrate them. To do so in the case of marine resources can lead only to disappointment, frustration, and anger on the part of the many as they watch a well-placed few reap what may eventually be a rich harvest.

To conclude, let me outline my view of what has evolved from the conference as the most probable scenario for the near future.

It is that those coastal and seafaring states with the technological know-how, wealth, credit, bureaucratic cadres, and other requirements to exploit marine resources, or the ability to acquire this know-how and these requirements, are going to run with the oceanic ball.

The question, then, is whether the non-active states are going to be able to stop, hinder, or slow up the active states. In moral terms one would also have to ask the further question: *should* these hampering efforts be made?

Under present circumstances, a negative answer to one or both of the above questions seems likely. If so, the non-active states must ask what they can and should do to keep from being left out entirely. It seems to me that their chances of getting a piece of the action would be maximized if they could find some way to get in the game by directly acquiring

and developing their own technologies and technocracies, either as individual states or in collaboration with those with whom they can have trustful relations. The model that first comes to mind in this connection is that of OPEC, but this is not wholly apt because the member countries were already in the game by virtue of their oil reserves, and already had common interests *vis-à-vis* the international petroleum companies and the industrial consuming nations. The countries which find themselves being left behind in the race to exploit the sea and seabed will be out of the game and will have little in common except their "have-not" status. To convert this common status into effectively mobilized political, technical, and organizational power will not be easy, but I see no alternative to violation in practice of the widely accepted principle of common heritage.

## Remarks

*H. Russell Bernard, Associate Professor of Anthropology, West Virginia University, Morgantown*

**Thursday afternoon, June 29**

I am very glad that Dr. Chandler Morse gave us such a complete description of the major issues discussed here at the Conference.

My own remarks today are rather more general, observational; I have been trained in cultural anthropology and my credentials for discussing the law of the sea are non-existent. So my observations are those of an anthropologist who has spent the past four days listening to the process of international communication.

I have been privileged to hear, in rapid succession, a number of the most sacred tribal myths; I have been given a full inspection of the tribal cottage in which decisions are made to hold these conferences; and I have been privileged to witness rather more quickly than I am used to in most of my research among non-literate peoples of the world, the difference between expressed ideal behavior and real behavior.

The first thing that struck me was that there were a number of difficulties in coming to terms with terms, definitions, which I thought I had a pretty good handle on. Words like "developing," words like "resources," and above all, words like "mankind."

I surely thought as an anthropologist that I understood what that word meant.

By "mankind," I mean the sum total of humanity, such that non-literate peasants and diplomats are counted equally, and by "developing" we usually mean, in my profession, a state that has not yet achieved equitable distribution of both its material and non-material resources among its share of mankind.

So by this definition, naturally, we are all developing nations, with many technologically less-sophisticated nations rather more developed than the United States.

The common heritage of mankind, which concept took shape after Dr. Pardo's speech in the United Nations, seems to me to be a rather important concept, and it depends upon a rather precise definition of resources. What are the resources that we are talking about that are out there? What is the common heritage of mankind out in the sea?

It seems to me that it is important to make a distinction between both the material and non-material resources, the living and the non-living resources; certainly the surface of the ocean, as a place which allows for the connection of trade between nations, is a resource. The freedom to use that surface is in itself a resource. The cover that the surface of the ocean provides for the clandestine operation of military vehicles is a resource.

Many of the discussions here center upon how equitably to distribute these resources. In addition,

the living resources seem to me to be very different and very separable from the non-living resources.

So in the rest of my discussion I am going to concentrate on one or two points which have to do only with the non-living resources, since I think it was the intent of the Declaration of Common Heritage of Mankind to refer to the non-living resources as an arena for international cooperation.

The living resources are very different, and I think need to be treated totally separately for a variety of reasons. For one thing, fisheries are a very traditional aspect of many societies around the world, going back several thousands of years. It seems to me that the principle of "one man, one boat, one hook, and one fish" is a rather different sort of thing than the principle of one man, or a corporation, one multi-million dollar platform, and one resource such that its value might be measured in multi-millions of dollars per year.

In addition, fisheries seem to me, from these discussions that I have listened to, to be very different because many of the stocks are in danger. There does not seem to me to be any imminent danger that the manganese nodules are being over-fished, and so there seems to be some action imminent on the horizon to deal with the problem of over-fishing.

The proposals put forward by the representative from ICNAF and other proposals dealing with the concepts of patrimonial seas seem to me to be just alternative proposals which can be worked out, but nevertheless they are positive approaches to working out what is apparently an understood and perceived immediate problem.

So there is an international machinery growing to cope with the problem of fisheries, and in addition, of course, there is the very obvious difference that fish go, as a resource, from the sea directly into the mouths of lots and lots of mankind.

Consider the dilemma now if we go to minerals, without separating it as a very different issue, if we do not develop new principles to deal with it.

Here is the dilemma that I have seen in the last few days: a conference is called to discuss the particular needs and the particular interests of developing nations, with regard to the exploitation of resources (speaking now of the deep seabed resources) that these same nations have declared to belong to all mankind.

How can we say in one breath that the deep sea resources belong to the common heritage of man, and the revenues which accrue from exploitation of those resources will be used to benefit all mankind, when we are talking in the next breath about the accommodation of private interests?

As a student in communication, this bothered me. It seemed that there was a dilemma, for we declare rather socialistically to whom the resources and revenues belong, and then we engage in a debate over which capital interests, both in the developed as well as in the less-developed nations, shall have priorities.

S-2801, it seemed to me from the discussions, was a perfect example of the expression of capital interest protection, as it should be. But there are no guarantees in S-2801 that the revenues from exploitation of deep sea nodules would be distributed to even that part of mankind which resides in the United States, let alone the rest of the world.

And then, there are equally no guarantees that revenues developed by private capital risk-takers in less-developed countries would benefit mankind, even if the capital risks were taken by states rather than by private contractors.

So yesterday we had a session, dealing with fisheries but appropriate, nonetheless, for this point, I think, on the accommodation of major interests. I have no evidence that the accommodation of those interests would remotely approach the spirit of the UN Declaration of December 17th, 1970.

Let us assume that there are certain principles that are sacred, such as national sovereignty, and that once revenues are produced and brought back to a sovereign state, no real authority can be exercised over how they are distributed.

Why should the United States, under the current demand by developing nations that we seriously consider their needs and interests, consider those interests when there are no guarantees that they are defined in more humanitarian terms than, say, the Metcalf Bill?

It seems to me as an anthropologist that not since the time of Cortez and Pizarro has there been an opportunity for nations to invoke the ancient Roman concept of latifundium, and for individuals who represent states to acquire huge territories for resource development.

But at the time of the conquest of the Americas, all the Iberian powers were deeply troubled by moral questions. They had to decide whether Indians had souls, whether they needed to be saved or not, whether they could be enslaved, whether they should have their lands expropriated; and they called upon the Papacy for help in determining these questions. Today we look back on those days and are amused at the barbarism and the mistakes.

But at least then, the presence of human beings on the new resource lands forced people to consider the moral questions of exploitation, colonialism,

slavery, imperialism; they may have come to the wrong conclusions, but they considered them.

Somehow it seems to me that there is a danger here. The seabed has no human beings on it to remind us to consider these things. And the result is that this Conference might be a search for ways to accommodate interests, ways to insure that the right to engage in economic colonialism using deep seabed resources, is equitably distributed among all states.

In our first session, one delegate remarked that the developing countries must get a return for the sharing of their technologies with the less-developed nations. Dr. Pinto's response, appropriately, I think, was that world peace just might be a return sufficient to warrant cooperation.

But world peace may not be furthered if mankind's resources are exploited by those few special interests, even if those interests are evenly distributed throughout the world.

I have heard from several delegates here over the past four days, from the so-called lesser-developed nations, that no state, least of all a developing state, will relinquish its rights to another state, only perhaps to an international body. So it seems to me that an international cooperation—if I may venture into a positive suggestion—might be established to govern the exploitation, exploration and distribution of revenues from deep sea minerals.

But specifically I think all nations should fund this. Private companies with the skill to move ahead on technology, research and development should be encouraged to do so by having their expenses underwritten completely by these funds. If I can borrow a phrase from Dr. Wooster, there should be no moratorium on technological development, but perhaps a moratorium on commitments.

The community of nations, I think, should share the risks, and the community of nations should share the profits; instead of taxing private corporations so that a percentage of profits is channeled to mankind, perhaps mankind or its corporate representative should tax itself, to see to it that a percentage of the profits are channeled to the corporations that do the exploring and the mining.

You know, the last time that this happened, when the colonies of Africa and Asia and Latin America were formed, the private corporations—mining corporations—extracted the minerals from the mines, using slaves, or at best miserably paid labor. Clearly it would be barbarous to make the mining companies today pay for the sins of their ancestors. But the nations of the world—mankind—could pay them a handsome living wage for the loan of their technology and know-how.

The seabed negotiations have been hopefully described as an opportunity for the improvement generally of international relations. And on Monday afternoon, at a group session, Dr. Wooster remarked that he had seen no evidence that developing countries were acting in such a way as to improve those relations.

Even if, as Professor Pontecorvo has pointed out, or asserted, there is nothing on the seabed that merits our economic exploitation, I think it is still important to maintain the principle that even the globerigina ooze is the common heritage of all mankind.

Having taken this step in the euphoria of a perhaps naive belief that there were billions of dollars out there, having taken this step to declare the deep seabed as *res communes,* and renouncing national jurisdiction, the nations in the UN committed themselves to the creation of an arena in which international cooperation could be fostered. It seems to me that that is an important thing to preserve, even if Professor Pontecorvo is right, and there is nothing worth economically exploiting.

I think to do otherwise is to submit to a dangerous fallacy: to assume that the equitable distribution among special interests of the rights to exploit mankind's common heritage is a step toward world peace and order.

For future law of the sea conferences, I would recommend that the discussion of concrete proposals such as we have heard this morning, begin the sessions, and that we hear the development of alternatives. For the near term I would specifically think that the subject of technology transfer might be an appropriate topic.

A discussion of the nuts and bolts issues of this subject, who will pay for it, how will corporate secrets be protected, what social changes need to be planned for in the introduction of technology; these might be relevant issues to raise in a future conference on technology transfer.

Another topic might be international maritime shipping, perhaps even within the context of the transfer of technology. At the moment the United States is a rather poorly developed nation with regard to maritime shipping. And this might be part of a plan to develop the quid pro quo necessary on technology exchange to see to it that mankind's resources and their distribution are equitably handled.

# Remarks

*Eduardo Ferrero, Professor of Law, Pontificia Universidad Catolica del Peru, Lima*

**Thursday afternoon, June 29**

First of all I would like to thank the Law of the Sea Institute for inviting me to this meeting, and for asking me to make some comments about a general appreciation of the Conference discussions. I am sure that many distinguished scholars and diplomats who are present now would make these comments as well or better. Also, Dr. Chandler Morse and Dr. Russell Bernard have made several interesting comments. Therefore, I will just make as briefly as possible some basic remarks, especially relating them to some general ideas I can conclude as guidelines on the position of the developing countries, with the big but inevitable risk of oversimplifying the concepts.

Once more, I am aware of the complexity of the problems involved in the law of the sea, which produce different interests and needs not only among the developing countries, but of course also between the developing and developed countries. However, although there are these inevitable differences between the developing countries, we can speak of some general patterns of the developing countries in the law of the sea.

In the first place, speaking about the big question of this meeting—what are the needs and interests involved in the law of the sea for the developing countries, I see mainly two.

First, there is a clear and very important economic need of the developing countries to use the resources of the sea, both living and non-living resources, to attain progress in the development of their own people, to fill this big economic gap between developing and developed countries.

Second, the main need and interest of the developing countries is to bridge the technological gap that exists between the developed and developing countries, a technological gap that grows bigger with time. There is a need for acquiring knowledge, skills and capabilities in order to fill the lack of technology which is necessary to exploit the resources of the sea and to benefit from those resources.

These are the two major needs and interests of the developing countries; both are completely interrelated, one with the other, and to gain one of them we must strive at the same time for the other one.

Therefore, as a first conclusion, I may say that the basic needs and interests of developing countries are economical and technological; though not so much military security or military needs, which perhaps are the most important interests of some developed countries.

A second general comment is that I have appreciated from several papers that the developing countries always remember their past history; they remember colonialism and the exploitation they have suffered at the hands of the developed countries during the past centuries. They want to build a new world with new rules of law according to their own interests in order to gain the riches and the resources of the world—in this case, of the sea—for themselves, for their own development and for the benefit of their people.

With reference to this, there is an important point that has not been emphasized; that is, the notion of credibility and good faith which is basic for having good negotiations and for reaching agreement and settlements.

This idea of good faith and credibility is very important for the developing countries. The developed states must be very careful and conscious of this when negotiations are undertaken. They should remember that past history has shown us that we need proofs of the good intentions of developed countries when they speak of "common heritage of mankind" and so on.

Further, as a third comment I may say that I have appreciated, once more, that usually—though not always—there is no real understanding on the part of developed countries of the real problems, the real conditions and the realities of the less developed countries. Sometimes this seems to be deliberate, in order to favor their own political, economical or military interests.

I think that the interesting dissertation of the representative from Indonesia made this morning was a clear example which shows that sometimes they oversimplify and do not understand the real problems of a country which, because of the misfortune of history, does not have the riches and the development that developed countries have.

A fourth general comment can be made regarding

the different approaches to the problems of the law of the sea. I see a different approach between the developing and the developed countries. In many of the papers and presentations of the developing countries, there are positions based on principles and ideals, in moral values, which in my opinion are very important as guidelines for reaching agreements.

However, as I have listened to speakers from the developed countries, I have not heard this emphasis on principles and moral values that I would have wished to hear. I hope I am mistaken, and of course I am oversimplifying. There appears a more direct interest in corporations, in profits; and I have not heard so much about these basic concepts of moral values, justice and use of the ocean resources for improvement of the developing countries.

I think that one example of these three factors I have just mentioned is the Metcalf Bill.

The Metcalf Bill, I believe, looks for profits of the private corporations of the most developed country of the world in keeping with the necessary growth and enlargement of these big corporations. In this highly industrialized society, it is necessary for these big corporations to continue growth and expansion. They must use the resources of the sea to gain profits, saying that they are working for the benefit and the development of the whole world. However, the sharing of revenues of this type of activity, I think, will not be in the world's favor.

Also, in the Metcalf Bill, the concept of common heritage of mankind is forgotten. It is an attempt to maintain the present status quo, and it tries to set in advance the rules of the game for the future negotiations and agreements on the exploitation of the deep seabed mineral resources.

Finally, it ignores the moratorium resolution of the United Nations which, even if not legally binding on states, nevertheless has a moral value which expresses the majority of world public opinion. The Metcalf Bill, if enacted, will go counter to this expression.

Here appears again the factor I have already mentioned regarding the necessity of fulfilling the principle of good faith and credibility which developing countries demand based on their experience in past history.

As a fifth comment, I shall mention the position of developing countries towards the exploitation of the two main resources of the sea which have been analyzed in this Conference: fisheries and mineral resources of the seabed.

Regarding fisheries, I think that the coastal states —and I may add that with few exceptions this is the main position of the developing countries—have the right to exploit the fisheries near their coasts for their own benefit, not for the benefit of foreigners from highly industrialized societies from other parts of the world.

Such countries usually argue against the position of developing coastal states which extend their limits of national jurisdiction over fisheries, saying, on the one hand, that there is a big risk of over-exploitation. However, I do not know a case of a developing country which has over-exploited its fish within its zone of exclusive jurisdiction. The reason is not only that they do not have the resources for the exploitation of their fish, as for example in the Peruvian case. Peru is the leading country in the world in amount of fish caught. Peru controls its fisheries. In Peru the anchovy is not over-exploited, but it is well regulated by the government; fishing can be conducted only at certain times of the year. Thus Peru is using the resources off its coast in order to serve the development of its people. This is a case of a developing country which is using its resources in a reasonable way, and not over-exploiting them.

On the other hand, it has been mentioned that developing countries, because of their lack of technical resources, do not exploit all the possible natural resources of their seas. This is used as an argument by the developed countries against extension of exclusive jurisdiction of fisheries.

However, if the international community would recognize the sovereign rights of the coastal states over the fish near their coasts, I am sure that every developing country will permit foreign ships to fish off their own coasts. But, this would be accepted if it is done under the conditions established by the coastal state, for example by contracts, licenses, et cetera. Today's problem is that this cannot be done so easily because up to the moment, the rights of the developing coastal states have not been recognized by the maritime powers.

Also, with reference to fisheries, I think that the approach to this problem must be a regional approach, and not a worldwide approach—a regional approach in which the states of the region may reach agreement and in which there may be provisions and accommodations for the interests of some less fortunate states, landlocked states, for instance. These states could share some of the benefits of the resources in whatever way that may be agreed upon among the states of that region and in any way it may be desirable; but these things should not be arranged on a worldwide basis in which, today, a few rich and powerful maritime powers would obtain the greatest advantage.

Referring now to the exploitation of mineral resources within the limits of national jurisdiction,

again the same solution that I have just proposed can be taken.

With reference to the use of the mineral resources beyond the limits of national jurisdiction, I believe that the position of the developing countries is very clear, in the sense that they feel that these resources must be controlled completely by an international organization. It should be an international machinery that will not be just a postal office or registry office, but a management which will really be in the hands of the international organization and that will have the participation of developing countries. This will permit an equitable sharing of the benefits, and a greater possibility for the developing countries to acquire the necessary technology.

Another comment to be made is that the law of the sea is in a process of change and transition. Indeed, a conclusion we can draw, if we have not drawn it by now, is that there is much confusion with reference to international law, as to whether there is or is not general international law in many aspects of the law of the sea.

It is evident that many old rules based in custom are no longer valid. Also it is very clear that we must create a new international law of the sea, based on emerging principles which are no longer rooted only, and exclusively and basically, in the concept of the freedom of the seas, or freedom of navigation or military reasons. Rather, the new law of the sea is arising from moral values and economic needs in order to make available the resources of the sea for the benefit of mankind especially of the developing countries which have less resources and more poverty.

It has been interesting to listen to several speakers who have made reference to the importance of unilateral acts of states in this process of formation of a new law of the sea. We should not neglect these unilateral acts of states in connection with international law, as one of the means for creating new customary international law.

What is very clear, however, is that there is too much confusion and a big basis for discussion and controversy concerning the international law of the sea. In this sense, agreements between the members of the international community are very important. This does not mean, however, that the developing countries must be obliged to rush to reach immediate agreements on certain aspects of the law of the sea without concern for all its aspects. It is important that agreement may be reached on all the aspects of the law of the sea together.

As to future agreements which must be made, I really think that it will not be 1973 when the Law of the Sea Conference takes place.

There must necessarily be an accommodation of interests between developing countries, but even more so between the developing and developed countries. The developed countries have stressed, also in this conference, the importance to them of military needs, of free transit and freedom of navigation. On the other hand, the developed countries have their main interests in the use of the resources of the sea for their development.

If negotiation is going to be successful, developed countries must be conscious that they cannot have all the provisions they wish; they must understand that, as for them, the military and security reasons are matters in which they cannot give ground; so also for the developing countries, the economic reasons or use of the resources of the sea for their development are matters which they cannot give ground on either.

The last point I would like to mention is that, although an international agreement on the law of the sea is necessary, I think that we cannot attempt so easily to fix certain rigid limits for the different zones of the sea which will be constant for all the states of the world. Geography is different; each continent and each part of the world has special geological, geographic and biological characteristics. Therefore, in a future international agreement, we must seek to adopt certain general patterns, certain maximum and minimum limits, that could be set in more detail through a regional approach by the countries of a certain region.

The aforementioned ideas are the major remarks I wanted to make with reference to the discussions of this meeting. I am sure that my colleagues in the audience will have many further comments.

## Discussion

**Thursday afternoon, June 29**

*BERNFELD:* Ambassador Aguilar is to be complimented for his lucid explanation of the patrimonial sea concept, an explanation both sincere and complete.

In the course of our two days of meetings I have been hearing constant complaints about imperialistic nations and greedy American companies who would rob the world of its heritage in the seabeds, some of the accusations going so far as to name the company of which I am an employee.

I think this gathering ought to take both me and my company in the proper perspective. American Metal Climax does not have a penny's interest right now in the exploration for or exploitation of nodules on the seabed.

As a successful mining company though, it is very much interested in having proper laws in effect for the mining of materials. The time to howl for proper laws is while they are in the formative stage, and not after they have gone into effect if you have done nothing before.

This Company has been asked by numerous foreign jurisdictions and Provinces of various parts of the British Empire to help in the drafting and redrafting of mining laws, and we flatter ourselves to think that the requests have been made because these people know what we come back with will be an honest attempt to benefit the country whose laws we are helping to formulate.

You might ask: "How does it benefit us to do this? You can't possibly be purely altruisic."

The answer is this, and a very common answer it is because it is elementary in every business. It creates good will, which makes us more acceptable in foreign areas and establishes the basic trust which is necessary in any business field.

I have been interested in this field since 1967. My very first paper was written on the subject in that year, and I note that a number of the questions I raised then and which have been ignored in the last few years are now coming to the fore, including the necessity for a legal regime for the extraction of minerals not only from the seabed but from the waters of the sea, and the effect on fishing and fishing patterns of mineral extraction from the water column.

I have supported 2801, not because it is drafted in perfect form—it is far from that and needs a lot of work—but the principles of the bill are both good and effective. We know that a complicated code of laws cannot possibly be agreed upon by a group of 100 people within the time required by the swift movement of events.

The International Law Commission, a small group of highly-trained experts in international law, took nine years to present the first Law of the Sea to the Convention of 1958, and it took another six years before the Continental Shelf Convention had the miniscule number of accessions it needed to bring it into force, only a small fraction of all nations of the world, less than one-third, as I recall.

There is a very serious question. I agree with Professor Ferrero that a Convention can bind only the nations which agree on it. Even if we should achieve a new Convention with accessions by more than 75 percent of the world, they are still going to have to convince the International Court of Justice that another rule of international law has been changed by necessity and that nations which are not signatories to a Convention will nevertheless be bound if a majority or more of the family of nations adopted it.

Really, the support of 2801 should have come from a representative of one of the mining companies actually actively exploring for undersea minerals. We are not, but the reason I make myself a proponent here is that it appears to be the only way, within the foreseeable future and within the short time required, to bring into being a legal regime which can be at all effective and which will be for the benefit of all mankind, including the less-developed countries.

What the less-developed countries are interested in is the adequate and sufficient management of this resource so that there will be an income from it. Of what value is it to have a myriad of managers who know nothing of the business, especially a business so complex that it may affect the market for minerals all over the world?

I suggest we should have done it right from the beginning—that we should have distributed a copy of S-2801 at the outset of this meeting. Most of the statements critical of it are founded either on not

knowing the detail of the bill or not understanding its principles.

Review of the bill's sections themselves by members of this group may well switch some opinions.

Now, if I can ask our Ambassador friend one question. Ambassador Aguilar, most ships seized for violation of the 200 mile territorial sea claimed by Latin American nations were taken at distances not in excess of sixty-five miles from the coast. What is the logic behind the 200 mile figure? Wouldn't this indicate the natural maximum for any exclusive fishing rights rather than the 200 miles claimed? There seems to be more than a suspicion that the 200 mile claim was made with the expectation of being beaten back to about 65 miles, but the 200 has not become fait accompli because no effective opposition was mounted.

*AGUILAR:* In anwer to this question, I would first ask another question. What is the logic behind the 12-mile limit of the territorial sea proposed by both the United States and the Soviet Union?

There was a logic to the three miles, because it was the idea of the cannonball distance, and so on, but now I do not see any connection between 12 miles and anything in particular.

So if the 200 miles seems to Mr. Bernfeld illogical, well, he will have to agree with me that the 12 miles is also illogical.

On the other hand, the 200 mile limit for the economic zone, proposed and adopted in the Dominican Republic meeting, responded to the desire to find a common denominator with some other countries of Latin America that have already adopted the 200-mile limit. This is the case, as you know, with the countries belonging to the so-called Montevideo and Lima club.

If we want to find a solution to the problems we are facing now, we have to try to compromise and to find a common denominator at least on a regional basis.

I would also say, and this is my last comment on the question, that France, which is supposed to be the country in which people are particularly brilliant in logic, at the last meeting of the UN Seabed Committee, came forward with the statement in which they proposed the 200 miles, at least as far as the seabed and the subsoil thereof was concerned.

*FERRERO:* Mr. Bernfeld, with whom I have established a nice friendship within the last few days, has made a general statement. In response, I will answer briefly that I believe in his good intentions; I respect his way of thinking. But I disagree with that thinking.

On one hand, I really believe that he is a little bit pessimistic, thinking that the new Law of the Sea Conference will be held 15 years from now. I have more hope than he has.

Those are just different opinions; there are no more comments to make on this subject.

On the other hand, the main point is that the interests of the corporations, of his corporation for instance, are very different from the interests of the developing countries. We have different interests and different necessities. He says that what we need now is an equitable and efficient management, but I would ask: developing countries need only this?

We have had several corporations throughout the world, for several years, with equitable and efficient managements, but the shares, the revenues, the benefits—have they been for the developing countries?

I do not think so. Really, I think that the problem is not only the answer to that question; it is much bigger. In this case there is a clear incompatibility between the interests of the corporations and the interests of the developing countries; and even more, there is a great difference between the interests of all mankind and the interests of the big industrial corporations.

The Metcalf proposal, in my opinion, just wants, as I have said before, to set in advance the new rules of the game and tries to maintain the status quo, which is a status quo of dependence of developing countries on developed countries and their big corporations.

*DEBERGH:* By way of a contribution to an assessment of the Conference, Mister Chairman, I would in the first instance like to say that I was a little surprised to hear that people of the academic world still worry about the concept of the common heritage of mankind.

As a matter of fact, that concept is no longer an issue among the members of the Seabed Committee. We are already drafting, or trying to draft, institutional arrangements for the future seabed regime, and if that is difficult, or is going to be difficult, it is certainly not for lack of agreement on the common heritage concept.

I was quoted here as having said at a certain moment in the United Nations that the concept of the common heritage does not have any legal significance, that it has a vague legal value, that it is useless.

Well, in fact, it does not matter what I said in March of 1969; what matters is what the spokesmen

of the Belgian Mission to the United Nations have said in March of 1972, and in this sense it would be superfluous to explain what was meant by us in 1969.

But it may be useful as an element in the assessment of the discussion of the Conference, and of the evolution on the seabed questions in the United Nations.

In the first place, one must admit that when one contends that a certain concept is vague, this does not mean that one rejects it for that. And the record of the Belgian Mission is clear in that respect.

Only, when we are confronted with new ideas, especially legal ideas, we are cautious; we refuse to think in slogans, and we approach all new legal questions in the way of porcupines making love—that is, carefully.

In the second place, I do not recollect having said that the concept is useless. Maybe the word "useless" appears in the record, but I am sure that I did not use that word, if I used it, in the sense it has in English.

In the United Nations, I speak in French—I have to—and I remember very well having developed the thesis that whatever the nature and the content of the concept of the common heritage, we in fact did not need it to build a seabed regime.

I said that it was much more important to decide as a matter of legal principle that there is a part of the seabed lying beyond national jurisdiction, that such a principle would neutralize once and for all the nefarious implications of the exploitability criterion of the Continental Shelf Convention.

It was for that reason that my Delegation regretted that this principle was not incorporated in the operative part of the Declaration of Principles, and found a place only in the preamble.

I added that it was more important to establish the principles of non-appropriation, of regulated exploration and exploitation to the benefit of all countries, which implies, in the present state of international relations, taking into account the special needs and interests of the developing countries.

I remember definitely to have said in that respect that it does not matter what name we give to the baby; what matters is how we will bring it up, how we will educate it, and that is only a difference of approach. The proponents of the common heritage concept want to proceed by way of deduction; we prefer to proceed by induction.

In the third place, we must admit that in a large measure we were, and are still, puzzled by the inconsistencies of the most ardent supporters of the common heritage concept as a legal principle.

We observe that some of them, while proclaiming the principle, practice a policy to the contrary, slicing an important part of the heritage off to their own exclusive advantage, to the point of reducing it to a zone where nothing would be worth exploiting for many years to come.

We observe that the staunchest supporters of the common heritage concept proclaim themselves in favor of a strong machinery for the management of the seabed resources, but when we looked into the matter we discovered that that machinery would have strong powers only in a negative respect. Namely, to control and to prohibit exploitation of seabed resources that could enter into competition with land-based minerals.

Another inconsistency was, for instance, the flat rejection of a discussion on the concept of an intermediate zone. I don't take a stand on the proposal to that effect in the U.S. draft, but I regret it was rejected as contrary to the concept of common heritage. I am not so sure of that, for the whole law of the sea, of yesterday, and today and tomorrow, is based on concepts of intermediate zones.

What is the territorial sea other than an intermediate zone, and the continental shelf, and the contiguous zone, and the exclusive economic zone, and the patrimonial sea, and so on and so on?

Fourthly, we observed that the emphasis put on coastal state jurisdiction would be detrimental to the category of land and shelf-locked countries to which Belgium, my own country, happens to belong.

I know that among the landlocked and shelf-locked countries there are some rich countries, but that is not the point. Being rich is not necessarily the opposite of being poor, and that is an important statement for some countries, some rich countries, who for raw material have only at their disposal the industriousness of their populations.

So I would like to add this to the attention of my friends, especially of the Latin American continent, with whom I have a frequent quarrel about this matter. I can agree, for instance, with my friend Alvaro deSoto, that there is not so much difference between the shelf-locked countries and the shelf-less countries. We have, indeed, similar geographical disadvantages.

But our approach to the solution of the problem is completely different. My Latin American friends contend that the problem must be solved by very large extensions of national sovereignty, although these extensions have nothing to do with seabed management but with other problems related to fisheries.

We on the contrary believe that the solution lies in international community regulations based on a

narrow shelf concept, and we are sure that the second approach is much more consistent with the common heritage concept than the first.

We believe, in fact, that there is a tremendous danger inherent in the trend of projecting national sovereignties into the ocean. It is not the first time, in this Conference or other conferences, that Grotius was solemnly buried, but I feel very much that it was only a symbolic ceremony.

I have the impression that things are quite different as far as Grotius is concerned. Grotius did not treat only questions of the law of the sea. He and his school were much more complex than that. The core of their concepts of international law was the idea of the sovereign nation-state, as it was consecrated by the Westphalian Treaties of 1648; and that the Westphalian international community system is bankrupt we all know, for it is one of the reasons for the relative failure of the United Nations.

So we think it is wrong to project the Westphalian system into the oceans by replacing the old flag state approach by another state approach—the approach of the coastal state. By doing so I fear we will project into the ocean the whole Westphalian system, with all its imperfections, absurdities and confrontations, and with all the dangers thereof.

What we would prefer is not a solution in the Westphalian style, but a solution on the plane of the international community as is attempted, for example, in the Maltese proposal before the Seabed Committee, of which, unfortunately, not much was said during this Conference. In fact, I fear very much that the rich countries one day will be grateful to the developing countries for having pressed that idea of a 200-mile exclusive economic zone.

There is a principle in international law; if you take something for yourself, you must allow other states to take the same for themselves. I am sure that the rich countries lie in wait to exploit that opportunity, and I fear very much that that will be, in the short run, and also in the long term, detrimental to the developing states.

So as an assessment of the discussions of the Conference, I have the impression that too much emphasis was put on the idea of protecting the needs of the developing countries by extensions of national sovereignty into the ocean, and that not enough attention was paid to the other possible solution, the solution on the basis of international community interests.

This is a general statement, and I would like to say a few words about the question of the Moratorium.

There was very much said here about the Metcalf proposal, and indeed, the Metcalf proposal is not very opportune, we think. Not so much because it is in contravention of a resolution of the General Assembly, which is not binding, as was admitted, but because in the present state of the world it would certainly accentuate the discrepancies between the developed and developing countries.

But it may be that between a resolution of the General Assembly and a proposal like the Metcalf proposal there could be some middle road, and in that sense we could perhaps try to reach a contractual *modus vivendi* between states, a *modus vivendi* that could be negotiated very quickly at the next General Assembly, by which the states would grant each other at least the right to explore and to exploit the international seabed in an experimental way. That excludes automatically the idea of commercial exploitation.

This is an idea about which we think for the moment in the Belgian Mission, and I am almost sure that in the next session of the Seabed Committee we will go deeper into it.

*MBOTE:* I will direct my comments to our distinguished Ambassador, Andres Aguilar.

I listened to him this morning when he was discussing the Santo Domingo Declaration, and as he stated in response to a question, I think, or a comment that had been made by my friend from Nigeria, Kenya has been one of those countries that have consistently championed the idea of economic zones; and in my estimation, most developing countries seem to be sympathetic with this idea.

We continue to feel that the concept of the economic zone meets in large measure the interests of the developing countries, but one thing I would like to ask for clarification from Mr. Aguilar on is this.

In the last session of the Seabed Committee, I think most Latin American countries brought up the concept—or they have been bringing up the concept—of the territorial sea, with a plurality of regimes. Now, does the Santo Domingo Declaration replace this concept of proprietary regimes in the territorial waters, or is it an alternative?

*AGUILAR:* I shall be extremely brief. It is an alternative.

*McLOUGHLIN:* Professor Bernard mentioned positive proposals this afternoon, and in this light I would like to refer to two positive proposals that have been made in an attempt to solve the archipelagic problem which was referred to by Dr. Mochtar this morning. Dr. Mochtar referred briefly to one of

these, but I would like to make a further reference to it.

The first is a proposal made by Robert D. Hodgson and Lewis M. Alexander in Occasional Paper No. 13 of this Institute. The title of the paper is "Towards an Objective Analysis of Special Circumstances; Bays, Rivers, Coasts and Oceanic Archipelagoes and Atolls." The second is the proposal made by the Fiji Government to the Geneva session of the Seabed Committee on July 25 of last year.

These two proposals are both attempts to solve the archipelagic problem by reference to existing international law. Each of them relies heavily on the judgment of the International Court of Justice in the Anglo-Norwegian Fisheries Case of 1951. In fact, the difference between the two proposals lies largely in the interpretation given by their authors to the underlying principles of that judgment.

For brevity of reference, I will refer to the first as the Hodgson proposal and to the second as the Fiji proposal. In the Hodgson proposal, the underlying principle of the judgment, as far as archipelagoes are concerned, is taken to be the adjacency of the islands comprising the archipelago, whereas under the Fiji proposal the underlying principle of the judgment is taken to be the intrinsic relationship between the islands themselves. This is the fundamental difference between the two.

There are certain other differences as to the manner in which the proposals are to be implemented, but both involve the drawing of straight lines around the islands.

In the Hodgson proposal the straight lines are construction lines which are, on the principle of adjacency, limited to a maximum length of 40 miles. Within those construction lines, provided that the base points can be linked by construction lines of that length, the islands would be classified as an archipelago, and within these construction lines the waters are classified as internal waters which are subject to a regime which is virtually a territorial sea regime. I am being very brief on this point because the paper is available and can be read. I am merely trying to illustrate the differences.

The Fiji proposal differs slightly from this in that, being based on the principle of intrinsic relationship, the test applied on the Fiji proposal is simply: do the islands form an intrinsic geographic, economic and political entity? The term "geographic" as used in this context is in a geomorphological concept.

Fiji is a classic archipelago. I think Dr. Mochtar said this morning, and I think most people would agree, that if the rules don't fit the classic archipelagoes, then there is something wrong with the rules, and new rules must be devised to accommodate them.

The Fiji proposal is based on the concept of geomorphological, political and economic entity, which is the fundamental principle, and does accommodate not only the Fiji situation but also that of the other classic archipelagoes such as Tonga, the Philippines, Indonesia and Mauritius. It also avoids resort to the arbitrary distance delimitation upon which the Hodgson proposal is dependent.

As regards the nature of the waters within the archipelago, the Fiji proposal is to the effect that the coastal state has sovereignty over them but that foreign vessels should have a right of innocent passage through these archipelagic waters, and that this right of innocent passage should be through sealanes to be nominated by the coastal state. This is similar to the Hodgson proposal, in that the Hodgson proposal provides for a right of transit through sealanes which may be nominated by the coastal state. The fundamental difference between them in this respect is that whereas the one provides for a right of transit, the other provides for the right of innocent passage. The latter is considered by the author of the Fiji proposal to be more consistent with the application of existing rules of international law. The whole of the Fiji proposal, I would emphasize, is based on merely an extension to oceanic archipelagoes of the rules of international law as promulgated by the International Court of Justice for coastal archipelagoes.

The other difference is, of course, that the Hodgson proposal does not take into account the element of political entity, or the much-vexed question raised by Dr. Mochtar this morning—namely, that of the internal security of the coastal state.

*DJALAL:* My name is Hasjim Djalal, from Indonesia.

By way of appreciation of the sessions of the last four days, I should say that we have heard plenty of wonderful speeches, and very useful speeches. I regret that we have had too little time to go into detailed discussions which we who have come from so far away would like to have seen in greater detail on the substance of these matters.

For that reason I fully share the feelings expressed by Professor Ferrero that probably in sessions to come, if there are any, some ways should be devised so that we could proceed in greater detail, perhaps by dividing the session into groups immediately after someone has spoken, so that then we will be able to devote our attention to particular issues which might interest us.

My second comment on the substance of the whole

discussion is that I am somewhat astonished, really, that a real lack of attention has been given to what my friend from Fiji has been saying, the problem of security, in the law of the sea.

We have been devoting practically all of our time to economic aspects of the problem, such as resources and so forth; even the problem of international navigation seems to be, to me, overemphasized in its economic aspects.

Regarding the discussion this afternoon on the problem of international navigation and its importance, we do believe it is important, but we think it is not merely a problem of economics.

I believe that in the economic field there should be no problems of international communication. As Professor Mochtar expressed this morning, we have not had any difficulty whatsoever so far with the problem of passage for navigation through our waters as far as economic contacts is concerned.

The problem arises when we deal with the security aspects. There the issue is very complicated, really, because it involves coastal state security, global strategy and so forth, which we have not explored at all.

Nevertheless, I am not as pessimistic as it seems to me that Professor Morse was this afternoon when he said that he considered the interests of international navigation cannot be compromised with the interests of the coastal states. I do believe the interests are different, but there is a good compromise possible, I think, which has been there for 2,000 years, as we see it.

That is the matter of innocent passage. We—the coastal states—recognize the need for other countries to pass through, but I think it should also be recognized that those who pass through should not endanger in any way the coastal state itself. This has been guaranteed, I think, in the principle of innocent passage.

There are many other things which I really would like to comment upon, but I think lack of time does not permit this this morning.

I would like, for instance, to mention my appreciation for what was said by Ambassador Aguilar from Venezuela, that it is not realistic, really, to draw up limits of the seabed under national jurisdiction, encroaching upon what has already been legally recognized as under the national jurisdiction. In other words, if the Geneva Convention has already defined the area under national jurisdiction to the depth of 200 meters, and beyond that, to where it is still possible to exploit natural resources, I do not think it is realistic to come back to 200-meter depth.

What we should do, in my view, is to define the area beyond the 200-meter depth; not to come back again to the 200-meter depth. I do not think any state which has already exercised its jurisdiction within the area, in good faith, based on the existing law, would be willing to relinquish such jurisdiction.

*CHAO:* I have two points to make. Only yesterday I spoke of the special problems and interests of landlocked and shelf-locked states with regard to fisheries. I am delighted this morning to hear the distinguished Ambassador from Venezuela reiterating the desire of the Latin American states to create a special fund to assist the development of the landlocked countries on that continent. The objective of the fund being, as I understand it, to compensate the handicaps suffered by the landlocked states of that continent.

In order to assure the permanence of that fund, I take it that it is intended that an international agreement is envisaged to guarantee the fund, and that payment into that fund would be on the basis of the revenue derived from the marine resources of the patrimonial sea off the coastal states. That is my first point.

My second observation is with regard to the Santo Domingo Declaration, also mentioned by the distinguished Ambassador from Venezuela. As I understood him, and here I will apologize in advance if I did not understand him rightly, the Declaration formally pronounced the rights of coastal states to claim a patrimonial sea of up to 200 miles.

In addition, however, that Declaration also reserved the right of a coastal state to claim sovereignty over the continental shelf in accordance with the Geneva Continental Shelf Convention in the event that the continental shelf of a particular coastal state under the Convention extends beyond the 200-mile patrimonial sea.

As is well known, one of the unsatisfactory aspects of the present law in regard to the question of the continental shelf is the open-ended criterion of exploitability. I thought that the international community is now on the threshold of correcting that defect, and trying to introduce some degree of precision into the definition of the continental shelf, but I see that the Santo Domingo Declaration is perpetuating that unsatisfactory aspect of the present law.

I am all the more disturbed when I recall that the criticisms leveled against the present law incorporated in the Geneva Convention were that it reflects the domination and hegemony of the imperialist states, the advanced and developed states. So why are we, the developing states, still trying to preserve an unsatisfactory regime which has been criticized as being against the interests of the developing coun-

tries? I really do not understand.

Let us look at the implications of such a dual system—that is, the system of either 200 miles of patrimonial sea or the rights under the 1958 Convention, whichever is the more favorable to the coastal state.

Now, if this exploitability criteria is allowed to remain, I would like to know where would the limits of national jurisdiction begin? And if there is not going to be any area beyond national jurisdiction, then the United Nations Seabed Committee and the entire international community are merely engaging in a futile academic exercise. Then there will also be no scope for the 1969 UN moratorium resolution to operate.

Are we—the developing countries—going to perpetuate the alleged domination of the advanced nations, as is often suggested?

It is my view that the time has come for the international community to determine a definite limit for national jurisdictions. If we allow the exploitability criterion to continue, I am afraid there will be nothing left for the common heritage of mankind.

*AGUILAR:* First of all, I would like to point out that there is a difference in the approach that was taken at Santo Domingo in connection with the territorial sea and the patrimonial sea.

Concerning the territorial sea, the Declaration of Santo Domingo states that the breadth of the territorial sea and the manner of its delimitation should be the subject of an international agreement, preferably of a worldwide scope.

Then it goes on to say that in the meantime each state has the right to establish the breadth of its territorial sea up to the limit of 12 nautical miles measured from the applicable baseline.

This is the reference to the territorial sea; but when we speak about the patrimonial sea, we make it quite clear that this is a proposal, that we have not already given a green light to all the states of the area to extend national jurisdictions up to 200 miles. In other words, in connection with the patrimonial sea we have made only suggestions or better proposals, as is clearly seen by the way it has been drafted compared to the way in which the section I just read on the territorial sea was drafted.

When we speak about the patrimonial sea in the Santo Domingo Declaration, I quote:

> The breadth of the zone should be the subject of an international agreement, preferably of a worldwide scope. The whole of the area both of the territorial sea and the patrimonial sea, taking into account geographic circumstances, should not exceed a maximum of 200 nautical miles.

As you may notice, we do not add that in the meantime all the states of the area are invited, or are supposed to proceed now, to extend their jurisdictions to establish unilateral claims to this 200-miles economic zone.

So I think this clarifies the question asked by our colleague from Singapore.

Going to the second point he made on the continental shelf, I would like to say that I agree entirely with him that some limit has to be established for the continental shelf. Now that the international community, or at least the United Nations, has decided by the Declaration of Principles on the seabed beyond national jurisdictions that there is such a zone of international jurisdiction, there is no question that the continental shelf has to have a limit. There must be a limit between national and international jurisdictions.

That is why we have proposed—and by "we" I mean Venezuela—that we try to replace the definition of the 1958 Convention on the Continental Shelf, which is quite imprecise, quite ambiguous in its exploitability criterion, with another one which will be more precise. We have suggested one criterion that has been proposed by many distinguished scholars and groups, institutions, that is the geomorphological criterion.

Actually, there is a reference to this in the Santo Domingo Declaration. In this declaration, after reaffirming for the time being the language of the 1958 Convention on the Continental Shelf, and repeating exactly what it says, that, I quote:

> . . . the Continental Shelf includes the seabed and sub-soil of the submarine areas adjacent to the coast but outside the area of the territorial sea to a depth of 200 meters, or beyond that limit, to the depth of the superjacent waters which permits exploitation of the natural resources of said areas.

We go on from there, and in the next paragraph we state the following:

> In addition, the states participating in this Conference consider that the Latin American Delegations to the Committee on the Seabed and Ocean Floor of the United Nations should promote a study concerning the advisability and timing for the establishment of precise outer limits of the Continental Shelf, taking into account the outer limits of the continental rise.

*REBAGLIATI:* Having heard what Ambassador Aguilar has already brilliantly explained about this problem of the continental shelf, I would like briefly to also answer our colleague from Singapore.

The question here is that according to existing law, not only conventional law as in the Geneva Convention of 1958, but also according to international customary law, there are sovereign rights over the continental shelf which states have already enjoyed and at the present time enjoy, and that they are unlikely to give up, as was pointed out by Mr. Oxman, this morning.

Now, if it is a recognized principle that there is an international area of the seabed and the sub-soil thereof which is the common heritage of mankind, I agree of course with my colleague from Singapore that as a consequence we must talk about this and the criterion of exploitability.

The proposals that have been made so far as to reconciling the criterion of exploitability and the international area of the seabed conceived as the common heritage of mankind were in two directions, and I will try to summarize.

One that was mentioned this morning by Mr. Oxman is the so-called intermediate zone, and the other one was made by several states and delegations who are, in a sense, trying to compromise the exploitability criteria with this well-known principle of the common heritage.

This second one just mentioned by Ambassador Aguilar, is to recognize those states that have sovereignty out to the outer limits of the continental margin. In some cases, this is beyond 200 miles, so this clarification and this particularization has to be made.

Now, there are some other states which do not have, geographically or geomorphologically speaking, a wide or even a small continental shelf. We all know the cases of the South and even North Pacific states, which geographically speaking do not have a considerable continental shelf. So for those states we propose alternatively and complementarily with this other geomorphological criteria the criterion of the 200 miles.

The whole international compromise on the international seabed area, involving those states which already enjoy rights over the continental shelf and those others which do not have continental shelves in a geographical sense, is to adopt a criterion which is 200 miles, or beyond that if the continental shelf is broader.

We think that this alternative criterion will meet all requirements, both from states which have continental shelves, broad continental shelves, those others who do not have them, and also the requirements of the well-known and recognized principle of the common heritage of mankind of an international area.

## Banquet Address

*Paul B. Engo, Permanent Mission of Cameroon to the United Nations*

**Thursday evening, June 29**

Someone once told me that the easiest speech to make is definitely *not* the one to an impatient wife who smells alcohol on your breath when you get home early at midnight. His theory is that you would have no audience there. "Speak at a banquet," he went on "and you'll be among your peers. A full stomach and good wine and your audience will accept anything!"

Well, I can hardly take comfort from that thesis tonight. The food and good wine are in the stomachs of highly articulate intellectuals—they do not stop thinking rationally until the characteristic conspiracy between sleep and fatigue succeeds.

Seriously, I should like to express my profound appreciation to Dr. Lewis Alexander, the Executive Director, to Dr. Francis Christy, Jr., Program Chairman, and to all others who very kindly arranged my invitation to Kingston today. I deeply regret my inability to spend more time attempting to make a modest contribution to so vital a dialogue as this.

It is a special privilege for one to be able to share in this tremendous fellowship of a common desire to work out satisfactory provisions for strengthening the legal norms and institutions which enhance the course of peace. The effort we are making, in various fora, must demonstrate an irretrievable commitment to the exploitation of the advent of new opportunities offered by the seas and ocean floor, to build history's most significant bridge to the quality of peace upon which man's survival on this planet depends. The state of the world today makes it a crucial one. We cannot afford to be indolent or complacent. The advancement of science and technology not only challenges our capacity for intellectual growth, but also threatens the very dignity and worth of the human person on which is based man's fundamental right to freedom of choice of destiny. We appear, as a generation, to be incapable of coping with the rate of that advancement. Instead of exclusively serving man by providing sustenance for his wellbeing, science and technology now dictate the rate of increase in the woes which threaten his survival.

Culpability must be placed where it lies—with man himself. Our generation is perhaps better equipped than any other in history to eradicate the sorrows of the age and to establish lasting peace across the globe. We have at our command the means, in terms of both human and material resources, to combat the nagging human, social, cultural, economic and other problems of our time. Disease and poverty continue to cripple and to bring untold misery to most of mankind. Belligerency haunts the international community like a plague. All around the globe there is a strong feeling of distrust and bitterness, so strong you could almost touch. The absence of active, armed aggression in some parts gives the illusion of peace.

I recall the story of a man who was arrested by a police officer while exercising what he claimed was part of his fundamental freedoms.

"What for?" the citizen demanded.

"For disturbing the peace," the peace officer replied.

The man retorted, "The type of peace we have these days disturbs me!"

The type of peace that exists in this period of history is indeed disturbing. The concern expressed in various forms within the human family is not a sentimental one. It is my view that the most outstanding documentation of that concern is the Charter of the United Nations. More than that, it proceeds to prescribe the materials for the positive and conscious construction of peace.

The fate of the provisions of that universal document demands a serious reappraisal of our conception of *peace*. It is clear today that we can no longer afford to define it merely as the absence of war. We can no longer find justification in talking about the *maintenance* of peace when it is clear that we have not in fact constructed that peace.

Read the Preamble and the first Chapter of the UN Charter in the morning and then turn to the news media for the information of current happenings. What a deep gulf between the declared ideals of this generation and the steps we take in their purported pursuit of them. One is led sometimes to wonder if we have not begun to fulfill the frightening and lamentable prophecies which Shakespeare put into the mouth of the character of Mark Antony:

> Blood and destruction shall be so in use,
> And dreadful objects so familiar
> That mothers will but smile
> When they behold their infants
> Quartered with hands of war.
> All pity choked with the custom of fell deeds. . . .

Obviously, there is something drastically wrong. A strong case exists, I submit, for a re-examination of our sense of values and sense of priorities as a generation. In the first place it would appear to be imperative that we redefine the concept of *peace*. In doing so, the necessary research must be done into the *causes* of its breach in contemporary times. Their cure would thus be easier.

The second consideration is the injection of the indispensable political will on the part of member states to ensure that we do not establish laws and institutions merely for the fun of it; that their defiance will be met with adequate sanctions. Preaching and goodwill alone have never been enough to induce states to respect the rule of law. Conditions must be created, or must exist, in which states will be compelled to do so. This is particularly so because of the tender age of the contemporary international community.

I shall confine my comments tonight to the first of these two considerations because of its particular relevance to the discussions at this conference.

It is my opinion that we must read *all* the writings on the wall, and also that we look far beyond our times to recognize our responsibilities as a generation. I, of course, speak from the premise of our joint declaration to save this and succeeding generations from the scourge of war.

In discussing the subject of "the *needs* and *interests* of the developing countries," there appears to be a tendency to attach a purely humanitarian char-

acter to the type of problems posed. This is unfortunate.

In whatever context you examine the subject—whether in that of revenue sharing or in that of equipping their nationals in technology to participate actively in the exploitation of marine resources—it does not call for charity. The question must be treated objectively against the background of the knowledge of elements that have been highly provocative of breaches to international peace. The mere existence of a wide gap between the rich and the poor nations has produced conditions conducive to such breaches.

Whether we like it or not, we are living in a new age; an age in which all forms of isolationism have become anachronistic. We are now bound together in a common destiny. The fruits of science and technology have diminished vast distances, and we have become involved in one another. It is undesirable today for any state, or even groups of states, to ignore the happenings in other lands. There is ample evidence in modern times establishing the fact that the plight of a small, otherwise insignificant, poor nation in a remote corner of the globe could trigger immeasurable disaster, both in military and economic terms, for the rich and powerful nations. The continued poverty, insecurity and overall underdevelopment of the young nations must necessarily threaten even the rich nations themselves. No nation can afford to isolate itself from global problems because it finds no immediate threats to its interests.

Another aspect of that background relates to the interdependence between developing states. There is a clear chapter in history, which narrates the growth of European economies. They have been built on the natural resources of the young states. The peoples of these young nations have also provided a tremendous market for the manufactured goods of the developed world. At this stage in time, the interdependence continues to exist. The young nations need the technology of the developed world and the latter, dehydrated of raw materials, still need the natural resources of the young nations.

If I may venture to peep ahead, future generations of leaders from the developing world may well look to this era for precedence. Undoubtedly, technology will develop in these nations. They are the beneficiaries of huge untapped reservoirs of natural resources. There is a danger for most of the so-called developed states that the balance of power may be reversed. Given the present attitudes within the developed world, the process of rise and fall of nations is bound to continue to their detriment.

Another consideration that flows from this situation (which is relevant to the query on the basis for priority treatment of needs and interests of the developing countries) is that the peoples of these nations have for centuries been exploited. The benefits of the exploitation of their God-given natural resources have accrued to the developed nations. Is it too much to ask that something of that benefit be put back into these societies?

I mention this factor merely in answer to the queries of the short-sighted politically motivated school of thought.

The more important factor, I would submit, is the basis which the Charter of the United Nations provides. It recognizes a human family and proclaims certain universally accepted norms. The realities of our day call for inspired leadership, especially on the part of the current rich and powerful nations. Under the Charter principles, all member states have undertaken or are under a duty to cooperate with one another for the achievement of the lofty aims and purposes.

It would appear to me, consequently, that from the practical as well as the juridical standpoints, the present "needs and interests" of the developing nations constitute a body of international problems which require international cooperation for their resolution. These needs cannot be met through purely humanitarian channels. The wider threats they present to international peace and security call for a far more productive program or strategy.

Too much lightmindedness is in evidence as these problems are considered. Even with the serious-minded, there is a tendency to pass judgment on the development programs of the young nations on the basis of foreign criteria. On my native continent, Africa, for example, post-independence experience has shown that it is disastrous to attempt to channel growth in the image of European ideas and institutions. The path of development appears to be wider and does not necessarily have industrialization as the ultimate destination. We must be allowed to define our needs in terms of our criteria. We in turn should work out our priorities and design our development on the basis of needs. It is only under these circumstances that a fruitful cooperation will be possible at the international level.

Having commented on my perspective of the subject of "the needs and interests of the developing countries," I think that I ought briefly to touch upon some aspects of our current deliberations in the Seabed Committee. The debates on the international regime have been long and difficult. It is difficult sometimes to draw the line between a wish and a mature appraisal. I venture, however, to express

the view that the international community will eventually be compelled to accept the proposal for a strong international regime and an effective international machinery. At least that is my hope. The trend exists for attempting to strengthen international law through progressive development. The pressure of the Third World for the strengthening of international institutions will grudgingly be met with an increasing acceptance. The present power structure and the alignment of communities of interest may make this irresistible.

The fixing of limits appears to be the greatest difficulty at this stage. I believe, however, that the masquerading problem is really the degree to which the rich and powerful nations will accept the establishment of a new supra-national body over which they will not have effective control. For the young nations, the present exercise provides a first opportunity to arrest the alarming growth of an imbalance in the power structure. Their economic and social destinies have been conditioned by decisions taken in capitals that have failed to demonstrate sufficient concern for their interest.

The resultant battle appears to be between the conservative rich and the liberal poor. While that battle rages, time slips dangerously by. The advancements in science and technology continue to increase man's knowledge of the possible—the impact of this on subjectivity is enormous. Pressures are building on both sides. The fate of our endeavors will depend on the role of leaders with vision on both sides. The community will need all their devotion and resources.

Speaking purely for myself, I cannot help feeling that it is unrealistic and a mistake for us to pursue the line we have chosen for working out a comprehensive body of laws for the sea. We have chosen to deal with all aspects of the question of the law of the sea. There can be no question as to the wisdom of that decision in view of the uncertainties on the identification of universally accepted rules of customary international law. The 1958 Conventions provide law only for those who recognize it. Various claims must be negotiated.

My query relates to the method of work. I cannot myself see an early end to the effort here if we insist that the Preparatory Committee (or the enlarged Seabed Committee) should not only prepare a list, but that it should also present draft articles on all aspects of the outstanding problems *before* a plenipotentiary conference can be fruitfully held. I do not query an exchange of views. The present Committee is so large and consists of a vast majority of the membership of the United Nations. I believe that there would be a repeat performance if and when the minority (one-third) is brought into the show in a plenipotentiary conference. The actual debates in the First Committee of the General Assembly is proof positive.

If I may be allowed to project my view, I would propose that the Preparatory Committee speed up the no-referendum adoption of an international regime and an international machinery for the area; that it adopts an agenda for the Conference on the law of the seas in such form that no positions are prejudiced; that an international Conference of plenipotentiaries gets down to an early consideration of the difficult questions involved in the law of the sea. I favor an early commencement because of my conviction that the task of that proposed Conference will be a long and arduous one. I can see no useful purpose in dragging on the problem of an agenda in a way that appears to open up substantial debates on questions of substance prematurely. I do not favor interim arrangements because they could be prejudicial. The absence of political will on the part of some nations hampers enthusiasm for that proposal. The time spent in discussing interim measures (and I would refrain in this context from including the question of moratorium on exploitation) could better be spent speeding up agreement on the definitive arrangements.

My views are a personal reaction to the interests of the international community at this stage. They cannot be popular with all, especially with any of the extreme positions. I think, however, that haste is expedient, even if it must be tempered with caution. Major problems like the grave threats to the human environment cannot wait. Confrontation on the vital questions relating to fishing are growing and may end in hardening of positions or in new claims. The explosive situation exists on all sides. If the effort fails, I can see very little hope for arresting the present course of belligerency in history. Peace is in jeopardy—and so is man's survival.

I believe that if a final document is adopted, it will arrive as a package deal. It would be near impossible to contemplate a document in which agreement has been reached on every single subject individually. In the first place, it would take *decades*, not merely years, to achieve. In the second place, most of the early agreements may be overtaken by events and developments by the time the final document is adopted.

In closing, I wish to appeal strongly to the developed countries to demonstrate greater tolerance and realism in the current effort. The element of national interest is, as I see it, being over-stretched by some to the detriment of the common ideal we have declared.

It is largely in their hands that today lies the power to dictate, in large measure, the course of history. The declared dedication to the course of peace must be accompanied by positive steps for its construction, through the strengthening of the laws and institutions of the international community.

We must all learn to die a little in order to preserve our wellbeing in larger freedom. Both sides, developed and developing nations alike, must now abandon too many public statements from which retraction becomes difficult. Let us launch a new era of quiet diplomacy—listening to one another in the corridors of negotiation and attempting to seek solutions through understanding.

There is now widespread acceptance of the concept of common heritage of mankind with regard to areas or zones or regions beyond the declared national jurisdiction of states. Let that provide a basis for the achievement of agreement on the strength of an effective international regime. Absolute sovereignty is now a dream of the past. Let us strengthen the new community in which global strategies will eradicate the curse of poverty, disease, all forms of belligerency and human deprivation. It would enable us together to face common threats of epidemics and national and international disasters brought about by natural forces which no one nation alone can face. Let there be collective responsibility for the wellbeing of man on this planet. Let us create institutions and legal regimes that will foster cooperation in the exploration of space, the exploration and exploitation of the oceans and the seabed; and most of all, the promotion of peaceful and friendly relations among peoples and among states. Let not this tide pass us by, let it lead us to the fortune of peace—lasting peace.

# CONTRIBUTED PAPERS

## Restrictions on Oceanic Research: an Anthropologist's View

*H. Russell Bernard, West Virginia University, Morgantown*

This paper discusses recent experience in the field of cultural anthropology and how that experience might relate to restrictions on freedom of oceanographic research.[1] My opinions and observations as an anthropologist on the problems faced by oceanographers are, of course, personal. They are offered in the spirit of interdisciplinary exchange.

In the community of sciences anthropologists have been among the first to face a rather new ethical issue, the responsibility of field scientists to clients who possess data. The recognition of that responsibility depends upon the acceptance of two axioms: (1) we all depend upon the data we collect for our careers, our income, our prestige, our professional lives; and (2) data, i.e., information, is a commodity subject to ownership. The first principle is a truism. The second is highly debatable. However, consider the difference between the "bench scientist" and the "field scientist" in this regard. When the lab scientist creates data in the laboratory from non-human elements, he has virtually no responsibility to anyone for the acquisition of that data. Since he creates its existence in the first place, he owns it. But when we collect data in the field, as it comes in the natural state, there is a good chance that someone else will own the data. Heretofore, all field scientists, including anthropologists, entomologists, geologists and others, including oceanographers, have acted as if data belonged to them by virtue of their discovery of it. As the behavior of certain governments towards ocean research by foreign scientists suggests, this is no longer an unquestioned position. This, I suggest, is the root issue in the current debate over freedom of access to coastal waters. It is an issue which, in general, will become increasingly important to all field sciences in the future. It is an issue of ethics and of power to define ethics.

Oceanographers have been relatively free from pressures to consider moral issues for at least four reasons: (1) lack of connection with economic colonialism; (2) lack of a forum for discussion of moral questions; (3) easy access to basic research funds, and (4) lack of challenge to their 'right of research.' I would like to consider each of these briefly and then move on to a discussion of individual client-scientist responsibility.

1. In many countries—particularly in Latin America—American industries control huge sectors of the economy. Corporate giants in the fields of produce, oil, hard rock minerals, and other resources continue to develop those resources and export their profits to the United States. Over the years this has

[1] Research and writing of this paper was carried out in 1972 while the author was Research Associate, Center for Marine Affairs, Scripps Institution of Oceanography. The Center was funded by the Ford Foundation and directed by Warren Wooster. Grateful acknowledgement of support is tendered.

become a particularly sore point in Latin America and has recently led to an exponential growth of anti-U.S. sentiment. The results may be seen in the expropriation of American companies in Cuba, Mexico, Chile and other nations. The vanguard of economic exploitation of resources has been science and technology—the one to locate new sources of wealth, the other to extract them. In some cases the scientific exploration which led to economic exploitation of natural resources was mission-oriented. In others it was not. But from the point of view of a technologically less advanced nation the results were the same. Whether or not the basic research scientist perceived his role in the economics of colonialism is utterly beside the point to the colonized nation.

Until recently, oceanographers were probably not perceived as the scientific vanguard of economic colonialism. The development of technology for exploiting offshore oil has changed that. The race to invent secure methods of harvesting manganese nodules at great depths over a sustained period is no doubt adding to the change. Oceanography is no longer perceived as a discipline populated by innocuous investigators of truth—if it ever was. It might be a mistake to assume that previously exploited peoples are only now discovering science as something to strike at. They've probably thought about it for some time, while we took their silence as tacit approval of our behavior and motives.

2. The field of oceanography is extraordinarily diverse, encompassing geology, physics, chemistry and biology. Perhaps this is why no national professional society has developed. It appears, in this country at least, that moral issues in science require a national forum for debate and this does not exist in oceanography.

3. Under conditions of plenty, ethical debates such as the responsibility of science seem not to flourish. I think a positive correlation could be demonstrated between the concern of a discipline with social issues and the pressures brought by funding institutions upon the discipline to justify itself. Oceanographers have been peculiarly blessed with a lack of such pressure. Even now, while many disciplines are experiencing drastic cutbacks in federal funding, oceanography continues to receive excellent support.

4. This brings us to the last, and most important reason for occanography's lack of involvement in ethical problems. Until recently, no one questioned the fundamental right of oceanographers to conduct their scientific work where, and when, they deemed appropriate. A belief in public service is a basic part of the value structure of science. As I have shown elsewhere, however, the definition of "public service" varies. The public constituency that supports big, expensive science (and at $5000/day for research vessels, oceanography qualifies as "big science") sees "public service" science as problem oriented. Scientists see "public service" science as "just plain, good science," because the discovery of truth is "for the common benefit of mankind."[2] While oceanography was conceived as no more than the search for truth, the scientists' definition of public service was adequate. Now that less developed nations see oceanography as a possible input into economic growth (theirs or a foreign nation's), the scientific definition of public service loses its adequacy as a basis for support of science. Donald Price observed in 1965 "The simple assurance that science is bound to be good for you is not likely to be adequate, especially in view of the new potentialities for both good and evil of the biological and social as well as the physical sciences."[3] Price's prognostication of the interaction pattern between laymen and scientists was for the United States only. Imagine how the problem might be compounded in the technologically less developed nations where people have never heard "science benefits all mankind." The development of nationalism and self-determination do not usually occur under conditions where the evolution of species, birth control, and mass education are taken for granted as they are in this country. And this adds further to the gulf between scientists and the lay

[2] It might be argued that scientists engage in many kinds of public service science; some of these are more in harmony than others, with the lay definition of service in general. For example, teaching may be considered a public service, especially since it is rewarded monetarily at a rate far below industry or government. Speaking at local service club meetings (Lions, Moose, DAR, etc.) is also a public service. Serving on national level advisory panels is probably considered the ideal forum of service both within and without the academic scientific establishment. It should be kept in mind, however, that service on a science advisory panel tends to be the domain of elder scientists—and with good social as well as scientific reason (see Bernard, 1972). In addition, while elder scholars may continue to receive merit raises for devotion to this form of public service, younger scientists may engage themselves in such service at their peril. For, in spite of the academic establishment's statements to the contrary, the publish-or-perish ethic is very much a part of current university life. At this juncture, then, I refer specifically to the conduct of science itself as a public service rather than to other forms such service might take. Clearly, the lay definition of "science in the public interest" is problem oriented. Just as clearly the norms of science insist that the free accumulation of new knowledge about any part of the natural universe is a service to mankind.

[3] Donald Price, *The Scientific Estate*. Harvard University Press, Cambridge, 1965, p. 4.

public where the definition of public service is concerned.

Some assessors of the current state of science are convinced that the gulf is narrowing, at least in the United States. We read in the press that scientists are "re-thinking their role in society," and "coming to grips with their responsibility" to the public. I cannot even hypothesize what the situation is like in other disciplines, but I have a hunch it is not very different from oceanography. The evidence from a recent study at SIO shows that the traditional scientific definition of public service has not changed very much, though many marine scientists are ambivalent about it. On a Q-sort test, 44% of the 26 Ph.D. oceanographers tested were clearly ambivalent on the statement "compared to other sciences oceanography has an excellent record with regard to public service." Twenty-eight percent clearly agreed and 12% disagreed with the statement. By contrast, the statement "the best way to serve the public good as a scientist is to do the best damn science possible without worrying about whether what you're doing is 'useful' " drew strong support. Sixty percent clearly supported the statement, 16% were negative and 16% were clearly ambivalent.

This, and corroborative ethnographic evidence, convinces me that elite ocean scientists (those with access to the kind of money required to do first-class ocean science) are insulated from the vision of responsibility to a constituency now being advocated by technologically less developed nations in their demand for participation in ocean research. This vision is not, strictly speaking, a scientific issue; it is a moral one. It is not in the tradition of luxuries to be concerned with such moral questions. It is safe to say that for most of this century disciplines like oceanography (and anthropology) were, indeed, luxuries, affordable by only the most technologically advanced and wealthy nations. (It is interesting to note that 53 of the 80 Ph.D.'s surveyed, 65%, felt that oceanography was not a luxury and should be a matter of priority in less developed nations. An even greater percentage of graduate students, 79%, felt this way.)

Today, both oceanography and anthropology have become acceptable vehicles for upward social mobility among middle-class youth. This is a more formal way of describing the fact that high-school students now put these disciplines into the hat from which they will choose a career in college, rather than waiting until graduate school to select these fields of study. Disciplines such as ours are part of the intellectual establishment. As practicing members of this establishment of powerful nations, we carry a certain amount of power ourselves—especially when we deal with people in nations less powerful than our own.

Under these conditions of social inequality, the fundamental right of the scientific elite to do research is not likely to be seriously questioned. When a British anthropologist went to an African colony, his right to do research among a people was unquestioned. When an American anthropologist went to Mexico or to a U.S. Indian reservation to study a group of people, *his* right to snoop and pry into peoples' lives was never questioned. If it was, the stock answer was that "research benefits all mankind." It would be grossly uncharitable to accuse all scientists who relied on the "benefit-of-all-mankind" argument to justify their research of having been insincere. After all, that argument is one of our most precious tribal myths in science. Nevertheless, what third world nations are now doing is putting that myth on the line. They are, if my interpretation is correct, telling us to examine it as a cornerstone of our establishment and see whether or not it is really just a way of protecting our own self-interests. We are being asked to stop confusing personal aggrandizement with the interests of mankind or of some particular state. It is very likely that world economic progress would be retarded considerably if all ocean science were to cease. But it would probably be difficult to demonstrate empirically that a state or anyone, except oceanographers, is hurt or deprived of much if a particular marine study is not conducted.

Given this situation, it should be assumed that governments of previously powerless and still technologically underdeveloped nations will continue to bring political pressure on international field scientists. The form of that pressure for oceanography has already been established: restriction of access to coastal waters, where such waters are increasingly defined as up to 200 miles. That oceanographers are concerned about this phenomenon is obvious from the very fact that this study was commissioned. A State Department study to determine the needs of the marine science community is being conducted by the Committee on International Ocean Affairs.[4]

How can freedom of access be assured? In the course of interviewing dozens of marine scientists, I heard a number of possible solutions ranging from the use of gunboats to the creation of a treaty protecting ocean research. Many oceanographers fa-

[4] The study is under the direction of Dr. Conrad Cheek; the results of the reasearch were not available at the time this paper was written.

vored "educating the less developed nations so they can understand the benefits of ocean research for all mankind." It was never clear, however, who should do the educating, except that it would probably not be marine scientists themselves, except in the most passive ways. For example, most oceanographers interviewed were in favor of scholarships to support foreign graduate students in the United States. They were not particularly concerned about the "brain-drain" effect of such a scheme for knowledge transfer from technologically developed to less developed nations. They were mostly in accord with having guest scholars from host countries aboard their vessels; but they were not particularly anxious to publish in host country journals, co-author papers with host country colleagues, or allow host country colleagues to join in the planning of expeditions. Almost without exception, marine scientists rejected outright the idea that they might personally devote a year or more of their time to teaching and research in a foreign country. Still another recurrent theme was that the U.S. State Department needed to press more vigorously for expedition of coastal water permission requests for oceanographers. The problem with all these solutions, however, is that they look *outside* oceanography for a locus of responsibility. If less powerful nations restrict ocean research, it's because they don't understand; or it's because the State Department has not been diligent in its pursuit of permissions; or it's because the various ocean-oriented committees on the United Nations Committee have been derelict in their duty.

An alternative solution involves a change in the conduct of oceanographers (not necessarily in oceanography) rather than a change in the externalities which threaten the discipline.

I suggest that oceanographers evaluate the possibility of developing their own *quid pro quos* with the foreign nations in whose water they work. At the moment, smaller nations are making either of two demands on marine science as a condition for freedom of access: (1) work on problems of national interest; or (2) develop full cooperation and participation for the host nation in the planning and conduct of basic research. There are at least two things wrong with these demands: (1) applied, problem-oriented research is not the only way for scientists to pay their way in society. Good, basic research has proven itself worthy of support (in terms of long-range economic pay-off). If scientists are forced to couch all their research in terms of definable social, political and economic problem solving, it is very likely that science (i.e., the pursuit of knowledge) will suffer greatly. Where a project chosen by an American oceanographer happens to conform to the current needs of a developing nation, so much the better. Likewise, if the needs of a developing nation present problems which are *among* those a scientist would like to work on, the scientist should make the obvious choice. There is no reason to suppose, however, that any project chosen by an oceanographer on criteria of scientific interest will (or should be) of scientific interest to his colleagues in a host country. There is no guarantee he will have any colleagues there who can participate in the study. (2) The second thing wrong with the demand that ocean scientists be responsive in selection of research foci to the pressing needs of foreign nations, is that there are no guarantees that such science will not be used to further the dictatorial use of established power in developing nations. There is no reason to suppose that ruling oligarchies in Latin America, for example, are morally upright just because they make demands on foreign scientists. The need to preserve an atmosphere in which science can flourish, and the need for scientists to be part of the negotiations that establish that atmosphere, suggest that scientists themselves might take the initiative on the issue of *quid pro quo*. There is then no reason why the training of an agricultural engineer can't be the *quid pro quo* for research in foreign waters. If a particular country needs an agricultural engineer, it should be free to ask for his training as the price of ocean research in its waters. And if oceanography is as important to our national scientific effort as the funding situation intimates, ocean scientists should be free to negotiate such deals. The logistics of arranging a barter of this nature are difficult. Obviously, oceanographers have no right to commit funds or disciplines other than their own to anything. They must use their prestige to convince U.S. government agencies that the funding of *quid pro quos* is in everyone's best interests. It is also obvious that the State Department cannot be party to such activity if doing so were equivalent to recognizing a country's right to control science in waters beyond the 12 mile limit. The legality of the 200 mile limit is still very much under debate. This makes the problem of *quid pro quo* negotiation difficult, but not impossible.

The suggestion that field scientists themselves consider the negotiation of a *quid pro quo* derives from recent experience in my own field of cultural anthropology. We have had to depend directly upon people for our data and, ultimately, our careers. These days it is extremely difficult to place an anthropology student on an American Indian reservation. Through the efforts of Vine Deloria (see his volume *Custer*

*Died for Your Sins*) and others, American Indians have become militantly against being studied for the benefit of anthropologists. Native Americans know the enormous benefit anthropologists have derived from studies of their way of life; Ph.D. degrees, university jobs, professional prestige, rank, tenure, etc. We are now being told that we were derelict in our human responsibility in past decades and that this will no longer be tolerated. A tribal council executive recently told one of my colleagues, "If you want to spend $25,000 studying our problems, then you'd better come up with $25,000 to do something about them. Otherwise, we just don't need you around here."

The problem for us, then, is that we are beholden to our data. An oceanographer has never had to thank a current, or a fish, or a crack in the earth for divulging its existence to him. What is occurring now is that *people* are placing themselves between the oceanographer and his data. Whether or not oceanographers or the Department of State recognize the inherent right of people to do so, the political power to deny freedom of access out to 200 miles is becoming a reality; and oceanographers, like all field scientists, will become increasingly put upon to reckon with this reality. Their data are now scrutinized by Third World peoples as being of possible value to the continuing efforts of economic colonialists. More startlingly, "academic colonialism" seems to be emerging in the 1970s as a concept for forcing the *quid pro quo* I mentioned earlier. Consider the following example:

A colleague in sociology recently wanted to run a survey of the Mexican American community in the Northwest. When the Chicano intellectual community in a nearby university found out, they demanded that *they* be allowed to scrutinize the project, set interviewing fees, etc. The sociologist responded that his Ph.D. gave him the right to do research and he would not be dictated to. The Chicano scholars threatened to have the community systematically lie to all the questionnaires and then expose the plot in the professional journals if the sociologist dared to publish the fraudulent results. The sociologist was livid, but what could he do? I suppose he could have studied white collar workers in a factory, but he really wanted to study Mexican Americans. I hear some oceanographers say that if Brazil makes it too difficult to study in her waters, they'll just go elsewhere. But that is hardly any solution to the problem.

It is not my intention to press any analogy between anthropology and oceanography. I merely offer the observation that we, in the field-oriented social sciences, have learned that data are not just there for the taking. It is a resource, subject to legal ownership. Ownership of anything not previously considered ownable is largely a political matter. It depends on the power to stake and maintain a claim. When Peru says it claims 200 miles of maritime sovereignty, it is not just claiming the fish and minerals in those waters. It is saying that the data concerning those resources is also a natural resource. No one may take it out without permission. No one may use it to exploit the tangible resources. And no one may use it for personal gain without paying for the privilege. Whether or not a country has the right to lay claim to 200 miles of ocean is a matter which will be dealt with at the Law of the Sea negotiations. I submit that this is not the central issue of concern for oceanographers. If Peru's claim to a territorial (or patrimonial) sea is reduced to 12 miles or 50 miles, it is not likely to change the attitude toward elite scientists from elite countries now spreading throughout the Third World.

Oceanographers, and everyone else with a stake in the sea, can make their interests known and felt in the Law of the Sea negotiations. But oceanographers can do more than that to protect their interests, no matter what political turns those negotiations may take. They can recognize that they have a responsibility to a human constituency for how their data is used. They can recognize the fact that data is subject to national ownership until published. And they can recognize their personal debts to foreign states for the development of their scientific careers. Until oceanographers recognize this last point and engage in a collusion (not collision) strategy with coastal states, they will be forced into an increasingly difficult adversary relationship. There is a non-quantifiable *possibility* that such a relationship will be to the detriment of those countries that restrict research. But it is a *certainty* that it will hurt oceanography. In an adversary relationship then, the odds do not look favorable for oceanography.

# Alternatives to Offshore Oil Drilling

*Eugene Brooks, Attorney at Law, Plainview, New York*

Aside from damage to the oceans and coastlines from oil blow outs, spillage and leakage, other persuasive reasons should induce a go-slow, conservative attitude toward exploiting offshore oil.

1. The oil and natural gas is not needed immediately. There is no *current* oil shortage, and it is not clear why, except for pecuniary reasons, a rush for submerged oil must take place at this time if at all.

The United States has adequate oil reserves and is still a leading producer of oil. The total of cumulative oil production (produced, proved, provable reserves and future discoveries) is about 200 billion barrels; estimates run from 145 to 590 billion barrels ultimate oil.[1] About 90 billion barrels have already been produced,[2] leaving about 110 billion barrels to be consumed. Deducting the 7 billion estimated Atlantic shelf oil still leaves 103 billion barrels of oil from U.S. sources alone, not counting Alaska's estimated 10 billion barrels.

At the present rate of consumption proved reserves are large enough to last to 2001 AD if we were forced to rely on them only.[3] This could be stretched because we now import 25 percent of our oil and will continue to do so. The United States will probably continue to have access to large petroleum deposits from Venezuela, Malaysia, Indochina, Thailand.

The United States has *proved* reserves of 50 billion barrels.[4] It may add another 50 billion barrels to its reserves, not counting Atlantic shelf pools.[5]

The United States consumed about 5.35 billion barrels in 1970[6] of which about 3.5 billion were produced domestically.[7] Demand is expected to rise to about 6.5 billion for the year 1980. Thus our present proved continental reserves are ten times present demand and twenty times ultimate remaining production. This is not to say that there will not be an ultimate petroleum shortage. But since Interior Department sources say that drilling could take place in about 16 months, there is no lead time crisis. It may be well to discover offshore oil but hold it in reserve only.

2. The production of offshore Atlantic petroleum may *retard* U.S. energy development by diluting efforts to exploit and discover alternate energy sources.

There is an ultimate petroleum shortage in that population will rise and energy needs escalate geometrically. By 1980 U.S. population may be 242 million[8] and by 2000 AD estimates run from 300-315 million.[9] Energy consumption in the U.S. has increased in recent years at a rate of 5 percent per year, four times faster than the increase in population.[10]

The amount of oil discovered per foot of exploratory drilling has fallen from 276 barrels per foot between 1928 and 1938 to about 35 barrels per foot despite intensive research. It is estimated that the cycle of world oil production will end in about 100 years by 2075[11] with the same fate for natural gas.[12]

Since petroleum is a scarce resource, should we not (1) conserve it for medical and petrochemical uses and (2) develop alternate energy resources which will not require tearing up the seabed?

## Petroleum Uses

It should be borne in mind that not too much petroleum is used for electric power, which is a secondary rather than a primary source of energy be-

[1] The National Petroleum Council says 130-170 billion barrels. See Glenn, "Free World Energy Resources—Petroleum, Coal, Nuclear," page 14, Feb. 26, 1961 address to AIME, Continental Oil Co., N.Y.C.

[2] Hubbert, "Energy Resources," in National Science Foundation: *Resources and Man*, W. H. Freeman Co., 1969, pp. 174-182.

[3] "The Economy, Energy and the Environment," Leg. Ref. Service, Joint Economic Committee, U.S. Congress, 91st Congress, 2nd Session, p. 47.

[4] Glenn, *Supra*, Note 1, pp. 12-13.

[5] *Ibid.*, p. 14; *Supra*, Note 2, p. 182.

[6] *Supra*, Note 3.

[7] International Petroleum Encyclopedia 1971, p. 231.

[8] Chase Manhattan Bank, "Outlook for Energy in the U.S." Oct. 1968, p. 7.

[9] U.S. Atomic Energy Commission, *Why Fusion?* June 1970, p. 263.

[10] Cook, "The Flow of Energy in an Industrial Society," *Scientific Amer.*, Sept. 1971, pp. 135-144 at p. 137.

[11] Hubbert, "The Energy Resources of the Earth," *Scientific Amer.*, Sept. 1971 at p. 69.

[12] *Supra*, Note 2 at p. 190.

cause it requires one of the primary raw materials to create it.

Energy is directed to four main sectors: household and commercial; industrial, transportation, and electric utilities.

Oil, and the natural gas associated with it, dominate the transportation industry almost completely.[13] On the other hand, electric utilities, the fastest growing energy market, uses small amounts of oil, fuels about 20 percent its needs with natural gas, almost half with coal, and the balance with nuclear energy. The nuclear energy portion which is now about three percent will increase to 36 percent in 1980 at the expense of other sources.[14] Natural gas, oil and coal divide the household-commercial markets and industrial market, with natural gas and oil leading coal, to the exclusion of nuclear energy.

Petroleum products are used extensively for medical uses and petrochemicals (plastics, synthetic fibers, rubber, detergents, antifreeze and many other uses).

Even if shifts in technology result in all-electric homes, electricity for space heating, industrial processes, an electric automobile, and the shifting of electric production from fossil fuels to nuclear plants, fossil fuels would still likely supply 40 percent of U.S. energy requirements under *present* projections by year 2000. What would be required to eliminate petroleum would be other changes: the use of liquid hydrogen as a fuel in aircraft and long range land transport, for example.[15]

Energy models have been imagined under which little or no oil is necessary to fuel civilization. An all-electric economy would meet total energy requirements, exclusive of raw materials uses, from utility electricity with uranium U238 as the single source fuel.[16] Petrochemicals might be reconstituted from waste materials by plasma chemistry synthesized from hydrogen,[17] or compounded from coal gasification and oil shale.

## ALTERNATE FOSSIL ENERGY SOURCES

### Coal

Adequate supplies could provide energy for about 400 years. Coal can be converted to oil on the basis of about three barrels of liquid products per ton. Coal can also be transformed to high octane gasoline. At present, technology does not permit conversion of coal to gasoline to compete competitively with naturally occurring petroleum.[18]

### Oil Shale

Oil shale deposits are controlled 80 percent by the federal government in the western United States. Oil shale is solid petroleum deposit which decomposes when heated. Shale oil can compete with crude oil as refinery feed stock for petrochemicals. Western shale contains about 480 billion barrels of economic grade oil. President Nixon recently called for a program to develop untapped shale reserves containing about 600 billion barrels, a 150 year supply at current consumption rates.[19]

### Oil from Tar Sands

Sands and rocks impregnated with oil too heavy to flow are located in Alberta, Canada, and contain 300-400 billion barrels of oil, a century's supply at current consumption rates. Open pit mining produces crude oil. Consideration might be given to union between the United States and Canada as once contemplated by the Articles of Confederation.[20] This would be no more a revolutionary happening than China's admission to the United Nations.

## ALTERNATE NON-FOSSIL ENERGY SOURCES

### Solar Energy

Solar energy has been previously discounted as a large-scale source of electric power, but may be the ultimate resource. It requires a huge array of solar cells, either ground based (a product of 100 megawatts per square mile) in desert regions, or space based. Sunlight on 14 percent of western desert regions would provide 100 million megawatts, all the power required between 1970 and 1990.[21] A suggested five-mile-square solar panel in space four miles above earth complemented by a six-square-mile antenna on earth, *would produce 10,000 megawatts*,

[13] *Supra*, Note 8, p. 35.

[14] *Ibid.*, p. 29.

[15] Jones, "Liquid Hydrogen as a Fuel for the Future," *Science Magazine*, Oct. 22, 1971, p. 367.

[16] U.S. Dept. of Interior, Bureau of Mines I C8384, "An Energy Model for the United States," pp. 44-49, and 124. This model seems not to take account of jet transport, which operate on kerosene, but this fuel may be synthesized from coal and shale oil.

[17] Arizona State University, "Reconstitution of Materials with Plasma," July 2, 1970.

[18] Cardello & Sprow: "Future Fuels, Where From," *Chemical Engineering Progress*, Feb. 1969, p. 64.

[19] *New York Times*, June 5, 1971, p. 1, col. 3.

[20] *Articles of Confederation*, Art. XI.

[21] Summers: "The Conversion of Energy," *Scientific Amer.*, Sept. 1971, p. 157.

enough to power New York City.[22] The ultimate cost of 125 such power stations would be $70 billion. Each station would be twice the cost of a nuclear power plant, but there would be no fuel costs. Due to competition with other fuels, solar energy may not be presently feasible. All pollution except thermal pollution would be eliminated.

### Water Power

Hydroelectric power translated into electric generation by this country's five plants represents an installed capacity of 45 megawatts (28 percent) out of a possible 161,000 megs derived from stream flow records. This form of energy should be developed but it is very limited in quantity.[23]

### Tidal Power and Wave Power

Tidal power can last until tidal friction stops the earth's rotating, but it is even more limited in quantity than water power, providing about 100,000 megawatts. Utilities will need ten times that much to meet the needs of 1990 AD.[24]

### Wind Power

Wind power is often overlooked. Like solar energy, it is non-polluting. Wind energy per perpendicular square foot is about equal to sunlight on a 24-hour basis. A propeller-drawn turbine would convert the wind's energy into electricity.

Since wind is variable, the problem is one of storage, to which technology has not yet provided a solution. It has been suggested that a wind generator would decompose water into hydrogen and oxygen, which could be stored to use under pressure and recombined in a fuel cell to generate electricity on a steady basis. Or the hydrogen could be burned in a gas turbine to turn a conventional generator.[25] Not much has been written about wind power and cost figures are not available.

### Hydrogen

Nuclear power cannot be used as a direct source of power for vehicles or aircraft for reasons of weight and safety, although it has proven feasible for submarines.

Liquid hydrogen would be drawn from rivers or oceans, be electrolyzed into hydrogen and oxygen. The hydrogen would be liquefied, transported, delivered as fuel, burned with oxygen in the air and returned to the water systems as rain.

The cost of hydrogen as a fuel would be about 150 to 200 percent the present cost of gasoline per calory; however the cost of gasoline will go up in the future and hydrogen has an energy per unit weight advantage of three over gasoline. "As a pollution-free fuel it must be seriously considered as the logical replacement for hydrocarbons in the 21st century".[26]

### Geothermal Energy

The heat stored in earth to a depth of six miles is equivalent to 900 trillion tons of coal. Volcanos, hot springs and other thermal reservoirs can be tapped by drilling and the steam can be used to drive conventional steam power plants. Deep drilling in the earth's mantle, if technologically and economically possible, would provide as much future energy as nuclear power.[27]

With present methods, the U.S. has only about 10,000 megs of power from this source, only enough to drive New York City.[28]

### Nuclear Energy—Fission

Only fission nucler power plants now exist, based on the instability of Uranium 235. One gram of uranium is equal to the heat produced by 13.7 barrels of crude oil.[29] The heat from fissioning uranium drives a turbine and electric generator.

Uranium 235 is in short supply constituting only one part in 141 of natural uranium. Reserves on hand, about 161,000 tons, would last 29 years if used in "burner" reactors which consume most of the U235. Additional "yellowcake" might be as much as one million tons. But by 1980 the annual use would reach 40,000 tons and would continue to grow. Thus the life span of U235 would be about 50-100 years depending on the magnitude of use.

However, decomposing Uranium 235 can also be used to produce plutonium, another fissionable fuel, from U238 which composes 99.28 percent of uranium oxide, in a "breeder" reactor. A "crash" program underway since 1965 has been accelerated by

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[22] *Ibid.*; see also Glaser: "Space Resources to Benefit Earth," Arthur D. Little Co., 1970, Cambridge, Mass.

[23] *Supra*, Note 2, pp. 208-209.

[24] *Supra*, Note 21.

[25] *Ibid.*

[26] *Supra*, Note 15 at p. 370.

[27] Lessing, "Power from the Earth's Heat," *Fortune* Magazine, June 1969, p. 198.

[28] *Supra*, Note 2, p. 218.

[29] *Ibid.*, p. 219.

President Nixon—$27 million for fiscal 1972[30] as compared with $12 million in each prior year. A breeder reactor could extend the life of natural uranium for at least one thousand years.

### Nuclear Energy—Fusion

In fusion reactors, hydrogen atoms fuse into helium at temperatures of 30+ million degrees Fahrenheit, producing heat which may be used to produce power. To date it has not proved possible to confine the hydrogen gas (plasma), magnetically, long enough to reach controlled fusion. Another technique recently suggested is ignition of the hydrogen with a laser beam.[31] Fusion reactors have been placed 30 years in the future at present developmental rates.[32]

The favored theoretical method of producing fusion, combining deuterium with tritium (both hydrogen isotopes) will significantly extend the time scale for nuclear power. Though deuterium from seawater is virtually limitless, the "easy" way of producing tritium involves use of the metal lithium 6 of which there exist about 675,000 metric tons. This amount will supply as much energy as is obtained from the total of the world's initial supply of fossil fuel.[33] One source says that land-based lithium will last 48,000 years at current energy rates.[34]

Another fusion pathway is the deuterium reaction, which is more difficult and slower, and takes place at 100,000,000°F.[35] A cubic meter of water contains enough deuterium to produce the equivalent of 1500 barrels of fuel oil. Therefore this fuel supply is limitless, since one percent of deuterium in the oceans would amount to 500,000 times the energy of the world's initial supply of fossil fuels.[36]

## COST

Although the costs of developing oil shale and nuclear fusion are high, the cost of drilling also rises with water depth. In shallow waters the cost difference is small; in waters 600 feet deep total exploration and development costs may be twice that obtaining at the base unit of 100 feet, and as much as five times costly in waters 1000 feet deep. The development costs of just one eight-pile platform in 400 feet of water was estimated in 1968 at $5 million, and would rise to $8 million in 600 feet of water. This is exclusive of *operating costs* and *transportation costs*.[37] One is constantly told by oil company representatives that we are going to pay more for the energy we use. According to Dr. Glenn Seaborg, former chairman of the Atomic Energy Commission, breeder reactors in 1980 would produce energy at a 5 percent lower cost than other competitive sources of energy would produce at that time.[38] A comprehensive analysis of cost factors of fuel development is called for.

## ECOLOGICAL FACTORS

The combustion of fossil fuels, no matter how efficiently done, must always produce carbon dioxide. Its concentration in the atmosphere may increase from the present 320 parts per million to 375 or 400 parts per million by the year 2000 AD but it is not clear that this will create the "greenhouse effect" raising the temperature of the earth.[39] Rather, an increase in particulate matter (dust content, also called aerosol content) may trigger a temperature decrease over the whole globe sufficient to trigger an ice age.[40]

More immediately dangerous, sulfur dioxide, carbon monoxide, and nitric oxide, are major atmospheric offenders, emanating from the automobile which depends on gasoline. These may also be mutagenic hazards.[41]

Nuclear fission produces damaging radioactive isotopes as wastes which must be contained and stored. The release of fission products, especially tritium, which contaminates water, is one problem. Another, most serious, is disposal of wastes from the fuel reprocessing plants. If adequate extraction and safeguard standards are maintained and disposal is in deep salt formations, no firm danger is presented.

Fusion does not produce the same spectrum of radioactive byproducts produced by fission. Never-

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[30] White House, Message to Congress on Energy, June 4, 1971, p. 3.

[31] Lubin and Fraas, "Fusion by Laser," *Scientific Amer.*, June 1971, pp. 21-33.

[32] Rose, "Controlled Nuclear Fusion," Status and Outlook, *Science Magazine*, May 21, 1971, p. 806.

[33] *Supra*, Note 2, pp. 230-233.

[34] Gough and Eastlund, "The Prospects of Fusion Power," *Scientific Amer.*, Feb. 1971, p. 53.

[35] Stokely, *New World of the Atom*, Ives, Washburn, Inc., N.Y., 1970 at p. 228.

[36] *Supra*, Note 11, 61-70 at page 70.

[37] National Petroleum Council, "Petroleum Resources Under the Ocean Floor," 1969, p. 51.

[38] White House Press Conference, June 4, 1971, p. 3.

[39] Starr, "Energy and Power," *Scientific Amer.*, Sept. 1971, at p. 45. See also *Science Magazine*, July 5, 1971 at p. 138.

[40] *Science*, July 9, 1971, pp. 138-141.

[41] Hickey, "Air Pollution," in *Environment, Resources, Pollution and Society*, ed. by Wm. W. Murdoch, Sinauer Associates, Stamford, Conn., 1971, pp. 189-210 at pp. 208-9.

theless, the deuterium-lithium reaction results in much radioactive tritium which may be lost from the reactor unless better methods of containment are invented.[42]

Since the pollution products of fossil fuels are different in kind, studies comparing the quantitative and qualitative effects of each, projected in the future, would be helpful.

All steam power plants, fossil fuel or nuclear, produce heat, and most electricity ends as heat. The problem of waste heat may become critical by the year 2000. Two systems of producing power without steam generation are the fuel cell and a type of fusion reactor that converts released particles directly to energy.[43] Wind or solar power schemes would add little heat load to the earth's biosphere. It is pointed out that in about a century, at the present rate of increase of electric power (10 x every 33 years), the rate of heat release will almost equal the wattage received from the sun per square foot.[44]

## PRESENT U.S. ENERGY POLICY

Present U.S. energy policy is found in the President's message of June 4, 1971, and will be imbedded in all subsequent annual budget provisions. Without the position papers on which the President's statement is based, one is unable to know the facts and motives that led to the final product.

The U.S. energy policy is a transitional policy halfway between fossil fuel and nuclear fission, between oil and atom. With the exception of funding for a liquid metal fast breeder reactor—a demonstration model at that—no commitments to fundamental new technologies have been made. Emphasis is placed on cleaning present fuels and even expanding their uses. Sulfur oxides are to be removed by stack gas cleaning. Emphasis is correctly placed on coal gasification and liquification. Suitable mention has been made of MHD techniques, underground electric transmission and advanced reactor concepts. A reference to solar energy merely says that "we expect to give greater attention to solar energy in the future." Oil shale development is off to a very slow start (a "head-long rush toward development" is condemned), an environmental impact statement is to be prepared and reviewed, and then detailed planning can take place. Geothermal energy will be expedited.

However, there is to be an immediate accelerated program of new leases, not only in the Gulf of Mexico "but also some other promising areas."

One questions whether only an additional $2 million for fusion research and $27 million for breeder research, which is only slightly more than a doubling of prior annual funding, is sufficient in view of the magnitude of future energy problems. A number of scientists are reported to consider the additional financing minimal.[45]

All the energy sources mentioned above are not only alternatives to offshore petroleum but constitute national fuel security. We are, in addition, being outstripped by Russia in the development of new atomic reactors and even in fusion research.[46]

U.S. power has been diluted by such natural causes as the expansion of world population, growth of new nations, and revival of older political centers. U.S. prestige has been eroded by policy blunders such as the Vietnam War and the recent violation of GATT. This is shown by the loosening of our ties to Europe, Southeast Asia and South America.

In such a situation we might well avoid undue unilateral reliance on foreign petroleum sources. Moreover, the growing Soviet submarine fleet makes it inadvisable to rely on domestic deep sea offshore oil installations. It is essential to develop sources alternate to offshore oil. If offshore oil is to be developed it might be better developed under multilateral agreements as contemplated by certain proposals for the exploration and exploitation of the seabed beyond the limits of national jurisdiction.[47]

Since knowledge and technology are the sinews of the future, alternate energy sources must be more speedily investigated. Reliance on offshore petroleum retards this effort. There is some danger that we will lose our leadership in new technologies because of the "capital inertia of business and government."[48]

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[42] Cook, "Ionizing Radiation," in Murdoch, Note 41, pp. 262-265.

[43] *Supra*, Note 10, at p. 144.

[44] *Supra*, Note 21, at pp. 159-160.

[45] *New York Times*, July 7, 1971, p. 24, col 4.

[46] *Ibid.*, Oct. 19, 1971; *Ibid.*, March 11, 1971, p. 30, col. 2.

[47] See UN Doc. A/AC.138/60, Aug. 26, 1971 and particularly the Latin American Working Paper A/AC.138/49, Aug. 4, 1971.

[48] Lessing: New Ways to More Power with Less Pollution, *Fortune* Magazine, Nov. 1970, p. 78 at 136.

# International Use of the Seabed

*Edvard Hambro, Institute of Public and International Law, University of Oslo*

I should like to make two preliminary remarks. The first is that I do not speak as an ambassador of Norway. What I say should not be interpreted as the official pronouncements of my government. I do not even speak in the academic voice of an international lawyer. I beg leave to address you as a person who has spent most of his adult life in and around the United Nations and who has devoted his time and efforts to the development of international law and international government. My bias is—and I believe it to be natural and sound—my deep-felt belief that we live in a period of world history when it is the essential task of mankind to strengthen international solidarity, collaboration and organization—even at the expense of unfettered sovereignty.

Furthermore I do not intend to speak about any technical details in the work we are pursuing together. We have among us experts who have a much greater command of these problems than I have myself.

I would rather explore with you some long-term perspectives of interest for the United Nations and for the development of international law and organization.

When the question of the seabed and the ocean floor exploded on the United Nations a very few years ago (on the basis of the admirable efforts of the ambassador of Malta, Dr. Arvid Pardo) new vistas were opened up and great possibilities were seen for fruitful collaboration in novel fields of potentially very great importance for humanity.

President Johnson of the United States of America stated in a declaration in the summer of 1966:

> . . . Under no circumstances, we believe, must we ever allow the prospects of rich harvest and mineral wealth to create a new form of colonial competition among the maritime nations. We must be careful to avoid a race to grab and hold the lands under the high seas. We must ensure that the deep seas and the ocean bottoms are and remain, the legacy of all human beings.

It is to be fervently hoped that the United States policy will always be imbued with this enlightened spirit.

For this is the essence of the problem. The riches of the seabed must not be grabbed by nations in a new race for material possessions. These potentially vast new resources must be devoted to the benefit of all of us, and most particularly of the poor and developing nations. They have most to hope from a constructive approach, and most to fear from outmoded patterns of behavior.

New riches seem all of a sudden to be available to mankind. Some people would even say unlimited riches, riches beyond the dreams of avarice. This may be so, but we do not yet know when they will be available—or to whom.

Furthermore we have not yet studied profoundly enough what will be the effect of the exploitation of such riches on the other natural resources of the world, particularly on the economic position of certain countries which depend heavily on a single raw material.

However, certain matters have been clarified during the innumerable and often frustrating and at times bitter and negative debates. First and foremost it has been understood that we cannot look at the seabed and the ocean floor as something apart and by itself. It is realized, and must never be allowed to be forgotten, that the seabed is intimately connected with the territorial sea and with the continental shelf. Furthermore, it is clear that the exploitation of the sea and the seabed may exercise a profound influence on the freedom of the seas. It leaps to the eye that the whole complex of international law dealing with the sea and what is in it and under it has a direct bearing on the efforts to maintain peace and security. It its also decisive for the future of fisheries and the protection of the living resources of our planet. We seem to have learned that all that is in the sea, under the sea and on the sea must be viewed together as one whole—as Ocean space.

Still the long and protracted debates in the Seabed Committee and its subcommittees have shown a great deal of disagreement and many possibilities of conflict; so many in fact, that the surprising thing is not that we have had difficulties in formulating a set of principles but that we have got a declaration at all.

But, as you all know, a declaration was adopted in 1970 as one of the positive results of the silver jubilee session of the United Nations.

Some of the articles of this declaration are of great importance. First of all it is now settled—I hope and trust finally settled—in solemn words and in a most authoritative way that the riches on and under the seabed are the common heritage of mankind.

This is a new term in international law and met with opposition from many quarters. Lawyers were apt to say that the term had no strict legal significance and was unknown in legal terminology. That is probably true, but that is why it was deemed important to use it and to give it a new significance. It is a new term and it denotes something new in international relations. It is also a term which speaks to the imagination of ordinary people like the term in the Outer Space Treaty that astronauts are "envoys of mankind."

I believe that terms such as these are of great significance in international life just because they are "loaded" terms, because they express a program and an aspiration. They appeal directly to people and convey an idea which no elaborate legal terminology could ever do. They counteract the inherent danger in international law of becoming so esoteric that only the initiated few understand what it is all about.

But apart from this the term denotes a very important fact which is further elaborated in the next article of the declaration, namely that the seabed and what thereto appertains is not no man's land, is not *res nullius* but *res communis* or *res omnium*. It does not belong to nobody but to everybody. And there is a real and significant difference in this.

If it had been *res nullius* it would have been there for everybody to take and grab. This now is not the case. Article 2 states that "The area shall not be subject to appropriation by any means by States or persons, natural or juridical, and no State shall claim or exercise sovereignty or sovereign rights over any part thereof."

The adoption of the declaration was a step in the right direction, but still only a step. Real and serious difficulties will be encountered when we try to move from the pious platitudes of a declaration to the hard realities of a treaty and the machinery to be set up.

First of all we must draft a regime. Principles are not enough. Exact terms in treaty language must be worked out. States must assume definite obligations. This will be difficult and may cause great debate and passionate disagreements. It is clear that a seabed regime is meaningless if we do not know to which territories it shall apply. We must, therefore, agree to new limits of the territorial sea and of the continental shelf. This cannot be put off indefinitely and should not be obfuscated by loose language. The matter is urgent. More and more states claim larger and larger tracts of the ocean and demand greater and greater extent of their continental shelves. This creates vested interests which make it infinitely more difficult to reach an agreement. States are—for understandable reasons—much more prepared to give up what they have not got than what they think they already possess.

This tendency to confiscate or occupy larger and larger tracts of the ocean may tend to make the principle of the freedom of the seas an illusion, which would indeed be a very retrogressive step in international law. On the other hand, one cannot ignore the very real fear states who depend largely on income from fisheries have that their livelihood may be destroyed by modern and large fishing fleets from other nations. It is eminently understandable that they want to protect themselves against this danger; but it is surely not by unilaterally fixed boundaries and zones that the fisheries of the world are saved, but by constructive common efforts to protect the stock and prevent over-fishing. We must not permit the tragedy of the blue whale to be repeated in regard to other species.

The freedom of the seas has also been seriously infringed upon by the atomic tests in the oceans. Such tests have ignored the very serious dangers to the ocean and all that is in it. They were, therefore, even before the test ban treaty a violation of fundamental principles of international law.

The limited test ban treaty of 1963 has now made it illegal to test atomic weapons under water and thereby taken one step in the right direction.

Another important step is the treaty forbidding the installation of weapons of mass destruction on the seabed and the ocean floor.

In connection with this we must see the efforts to keep radioactive waste out of the oceans. This has fundamentally already been settled in the Convention on the High Seas of 1958 in Article 25. This treaty also aimed at controlling pollution by oil. The danger on this score is indeed very great. The *Torrey Canyon* wreck of 1967 spilled oil over English and French coastal areas; the breakup of the *Ocean Eagle* in Puerto Rican waters in 1968 and the Santa Barbara offshore oil leak in 1969 underline dramatically the continuous presence of oil spillage threats, and death to marine and bird life. In 1968-69, 1,721 oil spills in the United States of over 100 barrels were reported.

Worldwide, the releases of acids from mine drain-

age, watercraft wastes, and the potential of nuclear accidents compound the problem. The price of water pollution indeed includes death and lasting damage to the marine ecology. Just how extensive and enduring are these results continues, however, to be the subject of much professional opinion and too little scientific analysis.

It is quite clear that the danger of pollution of the seas grows with the extent of the exploration and exploitation of the riches on and under the seabed. Extraction of oil, dredging and mining will undoubtedly cause serious disturbance to the ecosystem of the oceans.

In a recent article in a leading periodical it is stated:

> Water pollution is, after all, critical because it is a life-or-death issue. Consider the dedication to enormous ocean dumping as reported by the Federal Council on Environmental Quality. The Council estimated that, in 1964, more than 300,000 water-using factories in the United States released over 13 trillion gallons of waste water, 22 billion pounds of organic wastes and 18 billion pounds of suspended solids into the country's waterways.[1]

The nations of the world must realize that the dangers in this respect are not only real, but overwhelmingly threatening, and that it is essential to develop safeguards before the exploitation starts in earnest. This is, of course—it should be superfluous to say it—in the common interest of all nations, small and big, rich and poor, industrial or developing. There is no opposition here, and we must be careful not to let the development syndrome harm our efforts in this respect.

New rules of international law are urgently called for, but even this will not be enough. We also need international collaboration in supervising and executing the new rules. A regime is not enough. We must also have the machinery. Let me stress again that on this point also there can be no conflict between the developing and the industrial countries. We are all—literally—in the same boat. And it might even be suggested that the developing countries are in a greater need for international machinery than the rich nations.

If we do not have any effective organization we risk, of course, that the nations which can exploit the sea will do so at the detriment of the others. The nations with the technological know-how and the financial means will get the lion's share. This means that the rich will get richer and the poor, in comparison, still poorer.

The greed of the rich combines with the improvidence of the poor to block progress. To prevent this we must work out both a regime and a machinery as soon as possible. This is of paramount importance to the poorer nations to protect their interests. They cannot do this if they try to do it alone. They can do it if an international machinery is set up, because there they will have the necessary power to assure that the international organization will take their interests into consideration. This should also be admitted by the richer nations if they are serious about their desire to bridge the gap between the rich and poor nations. The organization—or authority as it is generally called—must be set up in such a way that the riches of the seabed and subsoil are vested in the authority and that it is obliged to pay back the larger part of the revenue, after administrative costs are paid, to the developing nations either through the UNDP or some other machinery.

If the riches of the seabed available to the authority should be as substantial as is currently believed, it might also be worthwhile to examine the possibility of channelling some of it into the coffers of the United Nations so that the Organization could be assured an independent income and be liberated from the recurring financial crises.

If we should succeed in surmounting all the obstacles in front of us in this new field of international endeavor we might also vastly strengthen the world organization.

We see indeed in the future several possibilities for solving vital tasks through international cooperation.

To some extent the treaties concerning Antarctica and Outer Space have shown the way. Now two other fields of enormous importance and very urgent concern open up before us, namely the saving of the human environment and the orderly development of the seabed and the ocean floor.

These two tasks are critically important and we ought to agree on some basic presumptions.

First of all it is evident that no kind of struggle between rich and poor nations ought to hold us up. The matter is too important and too urgent for that. We must try to get rid of the prevalent development syndrome and look realistically on problems touching on the interests of the poorer countries.

Secondly they both call for a kind of international collaboration which cannot be built on outdated conceptions of national sovereignty and independence. The sovereignty complex must not be allowed to

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[1] Victor Pettacio. 1972. *International Law and Comparative Law Quarterly*, 21:15.

obstruct all efforts of constructive international collaboration.

The voice of the scholar and of the philosopher is often raised in vain when policy is dictated by practical men and realists.

Statesmen and diplomats must have the foresight and the imagination to find other methods than hitherto. Again the two treaties I have mentioned may be of some help.

In the world of the twentieth century no frontal attack on national sovereignty will avail. The Charter is based on the sovereign equality of the Members. But—and this is very important indeed—no rule prevents the states from disposing of part of their freedom of action for the common good. The Permanent Court of International Justice stated already in its very first judgment:

> The Court declines to see in the conclusion of any treaty by which a State undertakes to perform or refrain from performing a particular act an abandonment of its sovereignty. No doubt any convention creating an obligation of this kind places a restriction upon the exercise of the sovereign rights of the State, in the sense that it requires them to be exercised in a certain way. But the right of entering into international engagements is an attribute of State sovereignty.[2]

Where nations cannot solve their common problems singly they have to try concerted action. One should not ask whether this is compatible with national sovereignty, but rather ask what is necessary to achieve and then investigate the means necessary for that aim. On that basis it is generally—probably always—possible to find solutions, and on the basis of that necessity one tries to make the international agreements most suitable for the tasks in hand. The solutions will then be the subject of international treaties where states pool their sovereignties to further common ends.

The choice before us is clear. Either we continue the present day short-term policy, built on self-interest and outdated concepts, to chaos and disaster, or we try to base the future on enlightened and progressive understanding of the needs of the world.

If we choose wrongly our successors will say that our words and deeds were disastrous and disgraceful, disastrous in consequences and disgraceful because we should have known, and indeed did know, better.

## The Politics of Marine Science: Crisis and Compromise

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Steeped in the traditions of apolitical science and on the threshold of understanding key oceanic processes, the U.S. marine science community must today confront increasingly grave threats to its previously unfettered freedom of research. These threats arise in various quarters, but all appear destined to converge at LOS-73. The external threat is comprised of Third World pressure for broadened coastal state jurisdiction over adjacent waters, generally coupled with proposals for international supervision of research conducted on the high seas. Domestically, the U.S. ocean scientist faces a government willing to compromise all other issues to safeguard security interests, a purposive lack of access to policy-making circles, and other perhaps better organized special interests also willing to compromise scientific research.

This paper is an attempt to apply the perspective of the social scientist to the problems of the oceanographic sciences with a view to assessing current and potential policy directions. Perhaps the insights derived from the social sciences' long familiarity with ideological constraints on research can be of some utility in selecting rational responses to the impend-

[2] P.C.I.J., Ser. A, No. 1, p. 25.

ing "irrational" constraints on marine science. Accordingly, the paper will first examine these research restrictions from various angles, then discuss the rationale underlying them, and finally evaluate the tactical position and policy options of developed-nation scientific interests in relation to LOS-73.

## RESEARCH RESTRICTIONS

At the outset, it is instructive to approach the proposed restrictions on science from three directions: source, form, and likely costs of these restrictions.

1. First, the motive force generating demands for curtailing scientific freedom is the perception of potentially exploitable ocean wealth by Third World nations. These resources constitute a "common heritage of mankind," they argue, and must be protected from appropriation by the high-technology and high-capability "haves" of the world. Although the argument doesn't necessarily require full territorial sovereignty over adjacent ocean spaces, the inevitable relation of marine research to resource exploitation does necessitate some coastal state control over previously unrestricted scientific research. Once knowledge acquires political and economic value, then access to information by better-equipped outsiders must be curtailed.

Another equally central implication of the "common heritage of mankind" concept is that research must be controlled throughout all ocean spaces. As the freedom of the high seas comes under attack, so also does its derivative, freedom of research. Hence, coastal state jurisdiction would be complemented by an international regime to govern research on the high seas beyond national jurisdiction. Presumably the LDC's (Less Developed Countries) will possess a strong enough voice in this international regime that their concerns will also be reflected in its policy and rule-making procedures.

2. Restrictive policies such as those first expressed in Article 5(8) of the Continental Shelf Convention may be manifested in numerous ways. In general terms, LDC demands include authorization and participation by coastal states, supervisory powers, access to raw data, and open, speedy publication of results. On the practical level, restrictions currently occur through: refusal of coastal state authorization; debilitating preconditions, including participation, access, and supervisory powers onerous enough to deter research projects; refusal of logistical and port facilities; opposition to proposed global data acquisition systems; and steering of research priorities toward purely developmental projects.

3. That these tactics constitute serious obstacles to oceanographic research requires little documentation, for the unity of oceanic systems necessitates research oblivious to political boundaries. Circulation, living resources migration, and ecological interrelationships simply become more difficult to understand without access to crucial shelf regions.

Once beyond immediate research needs, however, costs are more difficult to measure. Despite the clear disservice to the marine sciences, the costs to LDC's can only be estimated in very general terms. The long-range negative economic or developmental impact of such restrictions are frequently cited by ocean scientists, yet these vague predictions are seldom accompanied by rigorous economic proof. To date most LDC's remain unconvinced.

## RATIONALE UNDERLYING RESTRICTIONS

Given this situation, another point to consider is the rationale behind restrictions on freedom of research. The usual reasons given by LDC's for subordination of science to coastal controls are three: historical patterns of resource exploitation, past abuses of scientific immunity, and the political concomitants of national independence. Likewise, environmental protection and military security are inextricably interwoven with all three categories above, but for the sake of brevity they will be omitted from the discussion here.

The general background factor most relevant to restrictions on scientific research derives from the historical context of resource exploitation. Stated simply, the "have not's" feel they must zealously guard present and potential resources against appropriation and usage solely for the benefit of the "haves." In this respect, ocean scientists seem implicitly to maintain one view of the relation between the freedom of research and economic development, while to most LDC leaders history reveals a relationship of a far different character. The analogy is frequently made to research related to continental extractive resources, which has benefitted most LDC's but little. Such research instead tends to benefit large corporations endowed with mobile capital and strong political backing in their dealings with individual LDC's hard-pressed for cash and developmental opportunities.[1] Hence, local exploitation of local resources implies local scientific capabilities and no concessions conferred on large outside interests without an equitable *quid pro quo*.

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[1] See Michael Tanzer, *The Political Economy of International Oil and the Underdeveloped Countries*. Boston, Beacon Press, 1969.

Secondly, with respect to maritime resources it is difficult to deny that subterfuge and abuse have been perpetrated by special interest groups under the guise of purely scientific research. Fisheries research is often geared to discovery of new grounds, which can then be exploited by large distant water fleets. Some technical assistance programs have comprised little more than equipment sales ventures.[2] Likewise, ocean scientists are the first to admit that the fundamental/applied distinction is extremely difficult to maintain in marine research, so that open research may in fact benefit external commercial or military interests.[3]

While the individual scientist may entertain some sympathy for the arguments sketched above, this sympathy is sorely tried when he encounters the irrationality of "excessive nationalism." The difficulty lies in accepting the "rationality" of constraints on research flowing from the concepts of national independence and identity. As noted by Friedheim and Kadane,[4] one essential aspect of national sovereignty is control over territory, including adjacent ocean spaces containing resources felt essential for economic development. Self-reliance and independent development are critical values to former colonies, thus the "common heritage" can be appropriated by adjacent LDC's as a defense against those who have already appropriated to their exclusive use most of the world's wealth.

In marine science matters, LDC's generally appear to be mired somewhere between the "nonscientific" and "colonial science" stages of development.[5] Most ocean research is dominated by foreign institutions and scientists, with local scientific communities not large or affluent enough for self-sustaining growth. Research results may be open and public, but primarily benefit developed nations which can evaluate and utilize them. Without this capacity to utilize research findings, scientific information is of little help to the LDC's. The demands for increased capabilities through participation and technical assistance are therefore closely related to the political imperatives of independent development. Given past history and the present international context, then, restrictions on research may be a very rational bargaining strategy indeed.

## POLICY OPTIONS

The present tactical position of U.S. scientists anxious to preserve freedom of ocean research is perhaps best described as precarious. The dual threat posed by LDC demands and U.S. bargaining priorities will very likely result in erosion or explicit inroads on this freedom in any forthcoming LOS agreement. U.S. oceanographers thus appear to be caught in a bind between their own research interests, American security interests, and LDC rejection of both. Confronting the LDC's on these issues, marine scientists are put in a position similar to that of U.S. businessmen operating in politically sensitive areas like the Soviet bloc or southern Africa—arguing the non-political nature of politically controversial activity.

Given these parameters, U.S. marine scientists are presented with a limited number of options. These are extracted here as ideal types, but it will be argued that a realistic approach to the situation would require a combination of strategies and an ability to work pragmatically within a given political context to derive maximal benefits therefrom.

1. The first option for scientists would be to do nothing, focusing instead on adjustment to the new limitations on research. Even if LOS-73 results in fragmentation or complete failure to agree, some additional constraints are to be expected, for the consensus is that a general expansion of territorial sea claims outward to 200 miles would follow. The difficulty here is obvious; inaction means capitulation without salvaging reciprocal concessions.

2. The second option is to organize and fight, attempting to build both national and transnational coalitions, to gain access to policy-making processes, and to utilize the limited resources available in defending freedom of research. Yet political leverage is inadequate and past efforts in this direction have yielded few results. Marine scientists appear equally impotent elsewhere, so the prospects for future success are likewise dim.

3. Another somewhat different approach is to exert pressure on the national and international levels for a users' club approach. A convention concluded under IOC auspices and subscribed to by the advanced nations represents one example here. Such agreements could set precedent, provide a structure for later accessions, and/or a model for future agree-

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[2] National Academy of Sciences, Report of the International Marine Science Affairs Panel. *International Marine Science Affairs*. Washington, D.C., 1972. Chapt. 6.

[3] "Scientists recognize that such a distinction has little real meaning and is extremely difficult to make in practice." Warren Wooster, "Pollution—Scientific Research." *Proceedings*, 6th Annual Conference, Law of the Sea Institute, University of Rhode Island, June, 1971.

[4] Robert Freidheim and Joseph Kadane, "Ocean Science in the UN Political Arena." Center for Naval Analyses, Professional Paper #50, June, 1971.

[5] George Bassalla, "The Spread of Western Science." 156 *Background* 611 (5 May 1967).

ments. On the other hand, limitations on global research projects would be unaffected in the short run, for the LDC's are likely to remain aloof and suspicious. One variant of the strategy is to restrict research to Northern Hemisphere waters where cooperative arrangements can more easily be worked out.

4. The last and most challenging option is to accept a major restructuring of relationships governing research, attempting to cope by creating new approaches, programs, and institutions better suited to the new political parameters. In other words, the course of political wisdom may be to refrain from posing the issue as one of opposition to or endorsement of freedom of research. Instead, emphasis might be placed upon building cooperative links permitting scientists maximum latitude within this new context.

As outlined here, option 4 would appear to represent the optimal course of action. The limited political resources of marine science are better devoted to realistic compromises than to dogged insistence on generally disfavored special interest group ideals. As with distant water fleets and mineral extraction firms, oceanographers must realize that entrance to certain valued areas is now to be gained only at a price. In short, the lack of leverage by scientific interests requires acceptance of a new *modus vivendi* entailing constraints on research and accession to certain LDC demands. Scientists in the developed nations should re-direct their energies toward pressuring their governments to mitigate the damages to science resulting from the primacy of strategic considerations.

The scientist is thus faced with an unenviable dual task: to wring more funding out of reluctant governments, and to create new programs and institutional structures better suited to fulfilling LDC conditions on research. One example of steps to meet the latter task is IOC Resolution VI/13 of 1969, which suggested procedures to facilitate coastal state authorization. Other examples are found in expanded educational, technical assistance, and joint research programs. Bilateral agreements in the form of nongovernmental institutional links would be particularly effective vehicles for expanded cooperative activity, for independent research and educational institutions are generally freer of political taint and more efficient in administering individualized technical aid programs.[6]

To meet the demands for accelerated diffusion of knowledge and capabilities, two measures proposed by John Knauss provide excellent beginnings: the International Request Mode of research and a coastal state representative on all research voyages.[7] Likewise, Knauss notes that developed nation scientists may have to run the risks of research policy set by an international regime, hoping to work in harmony with that regime while in turn employing it to ligitimize research in the exclusive zones.[8] As components of a joint community effort, ocean-wide research projects become part of the international community's interest in developing its own common heritage.

## GOALS AND COMPROMISES

At this point the objection is commonly raised that LDC pressure should not be allowed to confuse two very different goals, scientific progress and economic development. Although scientific propaganda often tends to equate the two, the primary goal of the scientist must remain the former. Scientists are thus ultimately forced to separate these two goals if basic research is not to be totally subordinated to developmental needs. Yet even justifying science on its own merits has proved inadequate, for it will soon be sacrificed to Superpower military necessity and Third World economic necessity.

The question then arises as to which compromises will permit maximum progress of science—the cumulation of knowledge—while simultaneously fulfilling the requirements of the altered political context. It is here contended that the secondary objective of scientists in marine affairs, developmentally oriented research, to a great extent overlaps the primary goal of scientific progress, rendering the necessary compromises less onerous than in other fields of science. A rational use of the ocean consists of "that combination of uses of the sea that permits optimal benefits to the widest possible group of states and people."[9] In these terms, rational usage must occasionally incorporate hard calculations of political necessity.

In conjunction with this line of argument, a number of other considerations are relevant here. First,

[6] UNESCO. *Bilateral Institutional Links in Science and Technology*. Science Policy Studies and Documents, #13. Paris, 1969.

[7] John A. Knauss, "Freedom of Science in the 1973 LOS Conference." International Marine Science Affairs Panel Memorandum, 1972.

[8] John A. Knauss, "The Status of Scientific Research at the 2nd Preparatory Conference for LOS-73." Report to the Marine Technology Society, 18 Oct. 1971.

[9] National Academy of Sciences, *op. cit. supra*, note 2, at p. 35.

fulfillment of LDC demands does not necessarily signal a complete cessation of basic research, for the primitive state of knowledge and vague fundamental/applied boundary mean that even developmental marine research will be closely related to more fundamental questions.

Secondly, the temporal dimension is extremely important here, as the short- and long-term impacts of the various policy options may be widely divergent. If expanded and vigorously enforced coastal state controls are applied, a short-run slowdown of basic research seems likely. Even assuming attempts to soften the blow, such a slowdown should be anticipated, for these ventures can be inefficient, cumbersome, and time-consuming.

In the long run, however, the goal of scientific progress may be better served through compromises based on upgrading LDC capabilities, To elaborate, it is almost universally accepted that LDC's should eventually acquire their own institutional capabilities for independent marine research. Movement toward that goal through expanded training and assistance programs would in addition accomplish the following: precedents and patterns for international cooperative research; reduced suspicion and tangible evidence of values deriving from ocean research; and a more balanced scientific infrastructure capable of effecting global projects through integration of local and regional efforts. In short, steady movement along a broad front is preferable to minimal progress and further hostility.

## CONCLUSION

In conclusion, the price to scientists on the verge of quantum jumps in knowledge is steep, but it is a necessary price whose long-range benefits may far outweigh its immediate costs. The situation is neither encouraging nor one of the scientist's making, but he must utilize his energies creatively to salvage some acceptable arrangements for the conduct of marine research.

The point here is that policies must be chosen which both alleviate the impact of obstacles to research in the short haul and simultaneously work toward their ultimate removal. In the twilight zone where politics and science overlap, non-science factors impinge upon the goal-setting and decision-making arenas of organized science. Marine scientists must recognize that the indivisibility of oceanic processes compel them also to contend with global politics and with peoples for whom science has long been but one instrument in the arsenal of subjugation.

# The Japanese Fisheries Paper—A Suggestion for the Rules of Protection

*Shigeru Oda, Professor of International Law, Tôhoku University*

In spite of the cordial invitation from the Institute, I am prevented, to my great regret, from attending the Seventh Annual Summer Conference and discussing the Japanese Fisheries Paper. Instead, I would like to present this short note together with the draft articles of the "Proposed Regime Concerning Fisheries on the High Seas." I collaborated with the Government of Japan in preparing the Japanese Fisheries Paper and introduced it at the 13th session of the Asian-African Legal Consultative Committee held in Lagos, Nigeria, January 1972, where I attended as a deputy member of Japan for the Committee. The meetings at Lagos were attended by the members of 17 countries and by the observers from some 13 countries in the Asian-African region.

Herewith I would like to explain briefly the philosophy and general outlines of the Japanese Fisheries Paper. However, the views expressed in this note are not necessarily those of the Government of Japan, and I personally am fully responsible to the interpretation and opinions herein expressed.

If the freedom of fishing were to mean an unrestricted right to fish in the high seas, this *laissez-faire* principle can no longer be held as sound and unten-

able in this time and age, when the fishery resources can no longer be regarded as inexhaustible in relation to man's capacity to fish. The need to regulate fishing activities when and where a risk of over-exploitation exists has now come to be recognized by all nations. It would, therefore, be reasonable to conclude that the freedom of fishing has already been modified to that extent and that the general obligation of states to take, and to cooperate in the taking of, necessary measures for the conservation of fishery resources must be considered as already established in the legal order of the high seas.

What the Japanese paper tries to achieve is determination of an equitable balance between the interests of coastal fisheries and those of distant-water fisheries in the high seas areas. The overriding consideration here is not to secure the monopolistic enjoyment of the resources of the high seas only by coastal states, at the expense of the interests of distant-water fishing states, or vice-versa, but to reconcile them in such a manner that those resources can be utilized, as they should be, for the benefit of all mankind, rationally and durably. An international solution to accommodate conflicting interests between coastal fisheries and distant-water fisheries is not easy to find, and it must be submitted that the failure to give an adequate and proper solution to this problem has always been one of the reasons for a number of states to resort to unilateral extension of jurisdiction over what, under international law, is to be considered as part of the high seas, much to the confusion in the legal order of the sea with which the international community is confronted today. Consequently, some international agreement on the nature and extent of the right of coastal states with respect to fishing in the high seas adjacent to their territorial sea, is clearly in need. This must and can be done by having due regard both for the special interests of coastal states in their adjacent waters and for the legitimate interests of distant-water fishing states in those waters.

The content of the Japanese working paper is as follows: *First,* as indicated in para.1.1, this regime is intended to apply to fisheries on the high seas beyond the limit of 12 miles, within which limit the coastal state shall be entitled to exercise full jurisdiction in terms of either its territorial sea or fishery zone.*

* Japan has maintained for the past century the policy of the three-mile limit for the territorial sea. The Government of Japan is now ready to agree to 12 miles as the maximum limit of the territorial sea, provided that other problems directly related to it are satisfactorily solved by the broad agreement of the international community.

*Second,* provisions in part III are laid down in the recognition of the necessity of conserving marine living resources from the danger of over-exploitation and depletion, along the line similar to what is already provided for in the 1958 Geneva Convention on Fishing and Conservation of the Living Resources of the High Seas. The special status of coastal states is recognized for conservation under para.3.4. This special status of coastal states has two aspects: general responsibilities to take necessary conservation measures in cooperation with distant-water fishing states, and certain corresponding rights to carry out such responsibilities. Such status is derived first from the general recognition that the relative proximity enjoyed by coastal states with respect to fishery resources in their adjacent waters enables them to have a better knowledge of conditions of these resources to which they have easy access, and secondly from the fact that the relative proximity makes them particularly vulnerable to the productivity of these resources on which their coastal fisheries must depend. It must be pointed out in this connection that the special status is conferred on coastal states not only to safeguard the interests of their coastal fisheries but to ensure the most effective and rational utilization of fishery resources by all the states concerned.

*Third,* without admitting the extension of exclusive zones of jurisdiction for fisheries purposes beyond the 12 mile limit, provisions are set forth for certain preferential fishing rights for coastal states, to which reference is made as the "rules of protection" in part II. The "rules of protection" are intended to recognize to coastal states certain specific advantages for the purpose of preventing or mitigating the disruptive socio-economic effects of free competition on what might be termed as "infant" or "small-scale" coastal fisheries which are unable to compete in high seas fisheries on equal terms with distant-water fishing boats of other states.

The preferential fishing right of coastal states will operate in the following manner. In para.2.2, two categories of coastal fisheries are intended to be covered by the "rules of protection." To the first category belong the coastal fisheries of *developing* coastal states. Such factors as shortage of capital, deficiencies in technology, immobility or labor and inadequate marketing systems etc., render the coastal fisheries of developing countries inherently uncompetitive, requiring special consideration. It is therefore proposed that such fisheries be entitled to the "preferential catch" to be defined in terms of the maximum annual catch that is attainable on the basis of its fishing capacity. In other words, a developing coastal state will be assured of a preferential share in the alloca-

tion of fishery resources according to its maximum fishing capacity, not only as it is at present, but also with some reasonable allowance for its future growth. If, however, the existing capacity is already large enough to enable the coastal fisheries to account for a major portion (e.g. more than 50%) of the allowable catch of the stock of fish concerned, the preferential catch will be determined on the basis of the existing capacity without taking into account the possibility of its future expansion. This limitation on the preferential catch is considered reasonable inasmuch as reconciliation of interests will have to be made of coastal and distant-water fisheries.

As regards coastal states which are *developed* countries, their coastal fisheries in general cannot be considered infant industries which require special protection, for such countries usually possess necessary financial and technological means of making internal adjustments, including the modernization of their fishing fleets. In such cases, protection might encourage overinvestment in inefficient fishing industries, with a result of having to impose unjustifiable sacrifices on the legitimate interests of distant-water fishing states. It is for these reasons that the second category of coastal fisheries with respect to which protection under the regime will be applicable is limited to what is termed here as "small-scale coastal fisheries," which are by nature not amenable to internal adjustments and therefore are extremely vulnerable to competition. Under the "rules of protection," such small-scale local fisheries of a developed coastal state will be entitled to the "preferential catch" defined in terms of the minimum annual catch required for their continued operation on the existing scale.

The distinction between the two categories of coastal fisheries is important and it remains in this regard a difficult question of what is a "developing coastal state" as distinct from "developed coastal state." It is however considered unwise to deal with this question in abstract terms, partly because none of the existing definitions of a *developing* country is satisfactory and also because there seems to exist a general understanding in the international community on the meaning of the term, leaving only a limited number of countries in the "gray" area between developed and developing countries. If need arises to decide the status of any of these countries in the "gray" area in relation to the present "rules of protection," it may be dealt with on a case-by-case basis among the parties concerned.

*Fourth*, how are the measures to implement these provisions relating to preferential catch determined? The implementing measures will be determined, as stated in para.2.3, by agreement among coastal states and distant-water fishing states concerned, on the basis of the proposals which coastal states will be required to make. That is to say, a coastal state which wishes to claim its preferential catch will be asked to demonstrate to the interested distant-water fishing states: (1) what its actual needs are; and (2) what specific measures are necessary to meet such needs. If the parties concerned fail to reach agreement on these two points within a reasonable period (six months) they will have recourse to the procedure for the settlement of dispute by arbitration under para.4.2. This procedure, which is similar to the one adopted by the Geneva Convention of 1958 in its articles 9-11, is essential to any general regime concerning fisheries of the high seas if it is to be both effective and equitable.

In parallel with initiating the procedures for arbitration, the states concerned, each of the coastal states and distant-water fishing states, shall adopt interim measures until such time as the said procedure is completed under para.4.1. The interim measures to be taken by both coastal states and distant-water fishing states are as follows: each state shall take necessary measures to ensure that its catch of the stock concerned will not exceed its average annual catch of the preceding [five] year period. In cases where particular fishing grounds, fishing gears or fishing seasons are in dispute in connection with the implementation measures for the preferential catch of a coastal state, the distant-water fishing states concerned shall adopt the latest proposal of the coastal state with respect to the matter in dispute. However, a distant-water fishing state is not obliged to adopt the proposal of the coastal state if it would seriously affect either its average annual catch of the preceding five year period or its catch of some other stock which it is substantially exploiting. In such a case, that distant-water fishing state shall take all possible measures which it considers appropriate for the protection of the coastal fisheries concerned. In addition, the interest of coastal states is protected against the abuse of the exercise by distant-water fishing states of this privilege of being exempted from the adoption of the proposal of the coastal state in such a manner that the special commission may, at the request of any of the parties or at its own initiative, decide on provisional measures to be applied if the commission deems it necessary. This procedure is referred to in para.4.2(b).

In the *fifth* place, a reference should be made of the enforcement of regulatory measures under para. 4.3. Under this regime, no state or group of states has the exclusive right to enforce regulatory measures

adopted in connection with the preferential fishing rights or the special status of coastal states. The coastal states concerned have the right to control the fishing activities of distant-water fishing states in their adjacent waters, but they must accept joint control with distant-water fishing states which wish to cooperate with the coastal states in the enforcement of the regulatory measures. In other words, those coastal states which are entitled to preferential fishing rights may inspect or arrest vessels of distant-water fishing states violating the regulatory measures in their respective adjacent waters. The arrested vessels shall be promptly delivered to the duly authorized officials of the flag states concerned.

In addition, each state shall make it an offense for its nationals to violate any regulatory measures adopted pursuant to the present regime, so that nationals violating the regulatory measures in force shall be duly punished by the flag state concerned. Having regard to the legal status of the high seas, each state must reserve to itself criminal jurisdiction over its vessels violating the regulatory measures adopted under the present regime. Flag-state jurisdiction, however, is often suspected by coastal states as tantamount to loose enforcement. In order to secure strict enforcement of regulatory measures and to remove the concern of coastal states, it is considered necessary to establish rules according to which any violation will be duly punished by the flag state.

In the *sixth* place, the encouragement of cooperation with developing states is provided for in para.4.4. for the promotion of the development of fishing industries and domestic consumption and exports of fishery products of developing states, including landlocked states, developed states shall cooperate with developing states with every possible means in such fields as survey of fishery resources, expansion of fishing capacity, construction of storage and processing facilities and improvements in marketing systems, etc.

*Finally*, it is doubtless that no practical and amicable solution of international fisheries problems can be possible without the furtherance and reinforcement of the network of international arrangements for the protection of coastal fisheries and the conservation of fishery resources. Coordination and harmonization of measures can best be achieved within the framework of regional fisheries commissions established or to be established, and this is suggested in para.4.5.

This is the outline of the working paper which the Government of Japan has prepared on a possible regime concerning fisheries on the high seas. This, of course, is a suggestion, formulated with the hope of contributing to the clarification of more important aspects of the problems involved and with a firm belief that the way indicated in this working paper is a proper one of reconciling the interests of coastal states and distant-water fishing states in the international law of high seas fisheries.

## Proposed Regime Concerning Fisheries on the High Seas

*(Prepared by the Government of Japan)*

### Part I. General Provisions

1.1. The present regime shall apply to fisheries on the high seas beyond the limits of 12 miles, measured in accordance with international law as embodied in the relevant provisions of the Convention on the Territorial Sea and the Contiguous Zone.

1.2. All States have the right for their nationals to engage in fishing on the high seas, subject to the present regime and to their existing treaty obligations.

1.3. The present regime shall not affect the rights and obligations of States under the existing international agreements relating to specific fisheries on the high seas.

### Part II. Preferential Fishing Rights of Coastal States

*2.1. Objective of preferential rights*

To the extent consistent with the objective of conservation, a coastal State may exercise the preferential

fishing rights as set forth below for the purpose of according adequate protection on an equitable basis to its coastal fisheries engaged in fishing in the waters adjacent to its territorial sea or fishery zone (hereinafter referred to as "the adjacent waters").

*2.2. Preferential catch*

(1) In the case of a developing coastal State:

(*a*) The coastal State is entitled to the maximum annual catch attainable on the basis of the fishing capacity of its coastal fisheries. Subject to the provision of sub-paragraph (*b*) below, such factors as the size and number of fishing vessels in operation, fishing gears used, recent catch performance, and possible rates of growth of future catch shall be taken into account in determining the said maximum catch (hereinafter referred to as "preferential catch").

(*b*) In cases where the maximum annual catch estimated solely on the basis of the existing fishing capacity of the coastal fisheries of a coastal State accounts for a major portion of the allowable catch of the stock of fish concerned, the preferential catch shall be determined without regard to the possible expansion of the fishing capacity of such coastal fisheries.

(2) In the case of a non-developing coastal State:

(*a*) The coastal State is entitled to the minimum annual catch required for the maintenance of its small-scale coastal fisheries. Such factors as the size and number of fishing vessels in operation, fishing gears used, and recent catch performance and fishing efforts of the coastal State shall be taken into account in determining the said minimum catch (hereinafter referred to also as "the preferential catch"). The interests of traditionally established fisheries of non-coastal States shall also be duly taken into account in determining the preferential catch. In cases where the stock of fish concerned is in a state of full utilization, the preferential catch shall not exceed the average annual catch attained by the said small-scale coastal fisheries during the preceding [five] year period.

(*b*) The term "small-scale coastal fisheries" referred to in the preceding sub-paragraph means . . .*

(3) The provisions of sub-paragraphs (1) and (2) above shall not apply to the fishing of highly migratory stocks which may be exploited in extensive areas of the high seas.

*2.3. Implementation*

(1) Measures to implement the provisions of paragraph 2.2 shall be determined by agreement among the coastal and non-coastal States concerned with respect to the individual stocks of fish on the basis of the proposals made by the coastal States.

(2) Catch allocation among the coastal and non-coastal States concerned. including the preferential catch, shall be made within the allowable catch of the stock of fish subject to allocation if the allowable catch is already estimated for conservation purposes.

(3) In order to enable coastal States to utilize fully their preferential catch, the coastal and non-coastal States concerned shall agree on necessary supplementary measures to be applicable to the non-coastal States.

(4) In cases where the allowable catch is not available, the coastal and non-coastal States concerned shall agree on necessary measures to enable the coastal State to utilize fully its preferential catch. Such measures may include arrangements to minimize interference with the traditional fishing grounds and fishing gears used by coastal fisheries of that coastal State.

(5) In cases where nationals of two or more coastal States which are entitled to the preferential catch under paragraph 2.2 are engaged in fishing a common stock of fish, no coastal State may invoke the provisions of Part II with respect to such stock without the consent of the other coastal States concerned.

(6) The measures adopted in accordance with the foregoing sub-paragraphs shall be consistent with the obligations already assumed by any of the States concerned for conservation purposes.

(7) The measures adopted under this paragraph shall be subject to review at such intervals as may be agreed upon by the States concerned.

PART III. CONSERVATION OF FISHERY RESOURCES

*3.1. Objective of conservation measures*

The objective of conservation measures is to achieve the maximum sustainable yields of fishery resources and thereby to secure a maximum supply of food and other marine products.

*3.2. Obligations to adopt conservation measures*

(1) In cases where nationals of one State are exclusively engaged in fishing a particular stock of fish, that State shall adopt, when necessary, appropriate conservation measures consistent with the objective defined in paragraph 3.1 and in accordance with the principles set forth in paragraph 3.3.

(2) In cases where nationals of two or more States are engaged in fishing a particular stock of fish, these States shall, at the request of any of them, negotiate and conclude arrangements which will provide for appropriate conservation measures consistent with the objective defined in paragraph 3.1 and in accordance with the principles set forth in paragraph 3.3.

(3) In cases where conservation measures have already been adopted by States with respect to a particular stock of fish which is exploited by nationals of such States, a new-comer State shall adopt its own conservation measures which are no more lenient than the existing measures until new arrangements are concluded among all the States concerned. If the existing measures include a catch limitation or some other regulations

* An appropriate definition of "small-scale coastal fisheries" is to be inserted.

which do not allow nationals of the new-comer State to engage in fishing the stock concerned, the States applying the existing measures shall immediately enter into negotiation with the new-comer State for the purpose of concluding new arrangements. Pending such arrangements, nationals of the new-comer State shall not engage in fishing the stock concerned.

*3.3. Basic principles relating to conservation measures*

(1) Conservation measures must be adopted on the basis of the best evidence available. If the States concerned cannot reach agreement on the assessment of the conditions of the stock to which conservation measures are to be applied, they shall request an appropriate international body or other impartial third party to undertake the assessment. In order to obtain the fairest possible assessment of the stock conditions, the States concerned shall co-operate in the establishment of regional institutions for the survey and research concerning fishery resources.

(2) Except as specifically authorized under the present regime, no conservation measure shall discriminate in form or in fact fishermen of one State against those of other States.

(3) Conservation measures shall be determined, to the extent possible, on the basis of the allowable catch to be estimated with respect to the individual stocks of fish. The foregoing principle shall not preclude conservation measures determined on some other bases in cases where sufficient data are not available to estimate the allowable catch with any reasonable degree of accuracy.

(4) No State may be exempted from the obligations to adopt conservation measures on the ground that sufficient scientific findings are lacking.

(5) Conservation measures to be adopted shall be designed to minimize interference with the fishing activities relating to stocks of fish which are not the object of such measures.

(6) Conservation measures and the data on the basis of which such measures are adopted shall be subject to review at appropriate intervals.

*3.4. Special status of coastal States*

(1) It is recognized that a coastal State has a special status with respect to the conservation of fishery resources in the adjacent waters. Such special status consists of:

(*a*) the obligation of the coastal State to take necessary measures, in co-operation with non-coastal State, with a view to maintaining the productivity of fishery resources in the adjacent waters on an appropriate level with effective utilization of such resources; and

(*b*) the rights provided for in sub-paragraphs (2) and (3) below in order to enable the coastal State to carry out effectively the foregoing obligation.

(2) A coastal State has the right to participate on an equal footing in any survey for conservation purposes concerning a stock or stocks of fish in the adjacent waters, whether or not nationals of that coastal State are engaged in fishing the particular stocks concerned. Non-coastal States shall, at the request of the coastal State, make available to the coastal State the findings of their surveys and research concerning such stocks.

(3) Except for such cases as specifically authorized under Part IV, paragraphs 4.1 and 4.2, no conservation measure may be adopted with respect to any stock of fish without the consent of the coastal State nationals of which are engaged in fishing the particular stock concerned (or majority of the coastal States in cases where there are two or more such coastal States).

(4) The provisions of the foregoing sub-paragraphs shall not apply to the fishing of highly migratory stocks which may be substantially exploited outside the adjacent waters.

*3.5. Exemptions of coastal States from the application of conservation measures*

Notwithstanding the obligation under sub-paragraph (1) of paragraph 3.4, a coastal State may be exempted from applying conservation measures in cases where the effects of its catch on such measures are considered negligible.

PART IV. OTHER PROVISIONS

*4.1. Interim Measures*

If the States concerned have failed to reach agreement within [six] months on measures concerning preferential catch under paragraph 2.2 or on arrangements concerning conservation measures under paragraph 3.2, any of the said States may initiate the procedure for the settlement of disputes in paragraph 4.2. In such a case, the States concerned shall adopt the interim measures set forth below until such time as the said procedure is completed. Such interim measures shall in no way prejudice the respective positions of the States concerned with respect to the dispute in question.

(*a*) Each State shall take necessary measures to ensure that its catch of the stock concerned will not exceed on an annual basis its average annual catch of the preceding [five] year period.

(*b*) In cases where particular fishing grounds, fishing gears or fishing seasons are in dispute in connection with the implementation measures for the preferential catch of a coastal State, the non-coastal States concerned shall, except under sub-paragraph (*c*) below, adopt the latest proposal of the coastal State with respect to the matter in dispute.

(*c*) A non-coastal State shall be exempted from the application of the preceding sub-paragraph if the adoption of the proposal of the coastal State would seriously affect either its catch permitted under sub-paragraph (*a*) above or its catch of some other stock which it is substantially exploiting. In such a case, that non-coastal State shall take all possible measures which it considers

appropriate for the protection of the coastal fisheries concerned.

(*d*) Each State shall inform the special commission established in accordance with paragraph 4.2 and all other States concerned of the specific interim measures it has taken in accordance with any of the preceding sub-paragraphs.

*4.2. Procedure for the settlement of disputes*

Any dispute which may arise between States under the present regime shall be referred to a special commission of five members in accordance with the following procedure, unless the parties concerned agree to settle the dispute by some other method provided for in Article 33 of the Chapter of the United Nations:*

(*a*) Not more than two members may be named from among nationals of the parties, one each from among nationals of the coastal and the non-coastal States respectively.

(*b*) Decisions of the special commission shall be by majority vote and shall be binding upon the parties.

(*c*) The special commission shall render its decision within a period of six months from the time it is constituted.

(*d*) Notwithstanding the interim measures taken by the parties under paragraph 4.1, the special commission may, at the request of any of the parties or at its own initiative, decide on provisional measures to be applied if the commission deems necessary. The commission shall render its final decision within a further period of six months from its decision on such provisional measures.

*4.3. Enforcement of regulatory measures*

(1) Right of control by coastal States

With respect to regulatory measures adopted pursuant to the present regime, those coastal States which are entitled to the preferential fishing rights and/or the special status with respect to conservation have the right to control the fishing activities in their respective adjacent waters. In the exercise of such right, the coastal States may inspect vessels of non-coastal States, arrest vessels of non-coastal States violating the regulatory measures. The arrested vessels shall be promptly delivered to the duly authorized officials of the flag States concerned. The coastal States may not refuse the participation of non-coastal States in control, including boarding of officials of non-coastal States on their patrol vessels at the request of the latter States. Details of control measures shall be agreed upon among the parties concerned.

(2) Jurisdiction

(*a*) Each State shall make it an offence for its nationals to violate any regulatory measure adopted pursuant to the present regime.

(*b*) Nationals of a vessel violating the regulatory measures in force shall be duly punished by the flag State concerned.

(*c*) Reports prepared by the officials of a coastal State on the offence committed by a vessel of a non-coastal State shall be fully respected by that non-coastal State, which shall inform the coastal State of the action taken or the reasons for not taking any action if that is the case.

*4.4. Co-operation with developing States*

For the purpose of promoting the development of fishing industries and the domestic consumption and exports of fishery products of developing States, including land-locked States, developed non-coastal States shall co-operate with developing States with every possible means in such fields as survey of fishery resources, expansion of fishing capacity, construction of storage and processing facilities and improvements in marketing systems.

*4.5. Regional fisheries commissions*

Co-operation between coastal and non-coastal States under the present regime shall be carried out, as far as possible, through regional fisheries commissions. For this purpose, the States concerned shall endeavour to strengthen the existing commissions and shall co-operate in establishing new commissions whenever desirable and feasible.

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* Sub-paragraphs A, C and F of Article III, paragraph 7 of the U.S. draft articles may also be adopted for the purposes of the present regime.

# APPENDIX A: Declaration of Santo Domingo (June 9, 1972)

### Territorial Sea

1. Sovereignty of state extends beyond land territory and interior waters to area of sea adjacent its coast, designated as territorial sea, including superadjacent airspace as well as subadjacent seabed and subsoil.

2. Breadth of territorial sea and manner of its delimitation should be subject of international accord, preferably of worldwide scope. Each state has in meanwhile right to establish breadth of territorial sea up to limit of twelve nautical miles measured from applicable baseline.

3. Ships of all states, whether coastal or not, should enjoy right of innocent passage through territorial sea, in accordance with international law.

### Patrimonial Sea

1. Coastal state has sovereign rights over renewable and non-renewable natural resources, which are found in waters, seabed, and subsoil of area adjacent to territorial sea, called patrimonial sea.

2. Coastal state has duty to promote and right to regulate conduct of scientific research within patrimonial sea as well as right to adopt necessary measures to prevent marine pollution and ensure its sovereignty over resources of area.

3. The breadth of this zone should be subject of international agreements preferably of worldwide scope. Whole of area of both territorial sea and patrimonial sea, taking into account geographic circumstances, should not exceed maximum of 200 nautical miles.

4. Delimitation of this zone between two or more states, should be carried out in accordance with peaceful procedures stipulated in charter of United Nations.

5. In this zone ships and aircraft of all states, whether coastal or not, should enjoy right of freedom of navigation and overflight with no restrictions other than those resulting from exercise by coastal states of its rights within area. Subject only to these limitations, there will also be freedom for laying of submarine cables and pipelines.

### Continental Shelf

1. Coastal state exercises over continental shelf sovereign rights for purpose of exploring it and exploiting its natural resources.

2. Continental shelf includes seabed and subsoil of submarine areas adjacent to coast, but outside area of territorial sea, to a depth of 200 meters or, beyond that limit, to where depth of superadjacent waters admits exploitation of natural resources of said areas.

3. In addition, states participating in this conference consider that Latin American delegations in committee on seabed and ocean floor of United Nations should promote a study concerning advisability and timing for establishment of precise outer limits of continental shelf taking into account outer limits of continental rise.

4. In that part of continental shelf covered by patrimonial sea legal regime provided for this area shall apply. With respect to part beyond patrimonial sea, regime established for continental shelf by international law shall apply.

### International Seabed

1. Seabed and its resources, beyond patrimonial sea and beyond continental shelf not covered by former, are common heritage of mankind, in accordance with the declaration adopted by General Assembly of United Nations in Resolution 2749 (XXV) of December 17, 1970.

2. This area shall be subject to regime to be established by international agreement, which should create an international authority empowered to undertake all activities in area, particularly exploration, exploitation, protection of marine environment and scientific research, either on its own, or through third parties, in manner and under conditions that may be established by common agreement.

### High Seas

The waters situated beyond outer limits of patrimonial sea constitute an international area designated as high

seas, in which there exists freedom of navigation, of overflight and of laying submarine cables and pipelines. Fishing in this zone should be neither unrestricted nor indiscriminate and should be subject of adequate international regulation, preferably of worldwide scope and general acceptance.

MARINE POLLUTION

1. It is duty of every state to refrain from performing acts which may pollute sea and its seabed, either inside or outside its respective jurisdictions.

2. International responsibility of physical or juridical persons damaging marine environment is recognized. With regard to this matter drawing up of an international agreement, preferably of worldwide scope, is desirable.

REGIONAL COOPERATION

1. Recognizing need for countries in area to unite their efforts and adopt a common policy vis a vis problems peculiar to Caribbean Sea relating mainly to scientific research, pollution of marine environment, conservation, exploration, safeguarding and exploitation of resources of the sea.

2. Decide to hold periodic meetings, if possible once a year, of senior governmental officials, for purpose of coordinating and harmonizing national efforts and policies in all aspects of oceanic space with a view of ensuring maximum utilization of resources by all peoples of region. The first meeting may be convoked by any of states participating in this conference.

Finally, feelings of peace and respect for international law which have always inspired the Latin American countries are hereby reaffirmed. It is within this spirit of harmony and solidarity, and for strengthening of norms of inter-American system, that principles of this document shall be realized.

The present declaration shall be called, "Declaration of Santo Domingo."

Done in Santo Domingo de Guzman, Dominican Republic, this ninth day of June one thousand nine hundred and seventy-two (1972), in a single copy in the English, French and Spanish Languages, each text being equally authentic.

# APPENDIX B: Conference Program

Law of the Sea: Needs and Interests of Developing Countries

*June 26-29, 1972*

## The General Needs and Interests of Developing States

**Monday morning, June 26**

"Welcome"
Werner A. Baum, President, University of Rhode Island
"Introductory Remarks"
Francis T. Christy, Jr., Program Chairman, Resources for the Future, Washington, D.C.
"Problems of Developing States and Their Effects on Decisions on Law of the Sea"
Christopher W. Pinto, Legal Adviser, Ministry of Defense and Foreign Affairs, Sri Lanka
"Remarks"
Maureen Franssen, Scripps Institution of Oceanography, La Jolla, California
"The General Needs and Interests of Developing States"
Jorge A. Vargas, National Council for Science and Technology, Mexico City
"Remarks"
Edward A. Miles, Graduate School of International Studies, University of Denver
Discussion

## Discussion Groups

**Monday afternoon, June 26**

Explanation

## Seabed Mining Beyond the Limits of National Jurisdiction

**Tuesday morning, June 27**

*Chairman: J. Alan Beesley, Legal Adviser, Department of External Affairs, Ottawa*
"Interim Practices and Policy for the Governing of Seabed Mining Beyond the Limits of National Jurisdiction"
John G. Laylin, Attorney at Law, Washington, D.C.
"Some Problems in the Exploitation of Manganese Nodules"
Orris C. Herfindahl, Resources for the Future, Washington, D.C.
"Remarks"
Sergio Thompson-Flores, First Secretary, Brazilian Mission to the United Nations, New York
"Remarks"
Bension Varon, International Bank for Reconstruction and Development
Discussion

## Concepts in Sharing of Common Heritage Wealth

**Tuesday afternoon, June 27**

*Chairman: Alvaro deSoto, Mission of Peru to the United Nations, New York*
"The Seas: Heritage for the Few, or Hope for the Many"

Judith T. Kildow, Scripps Institution of Oceanography, La Jolla, California
"Resources of the Sea: Towards Effective Participation in a Common Heritage"
Zuhayr Mikdashi, American University of Beirut
"Equitable Use and Sharing of the Common Heritage of Mankind"
Ram P. Anand, School of International Studies, Jawaharlal Nehru University, New Delhi
Discussion

## Allocation and Exploitation of Living Resources of the Sea

### Wednesday morning, June 28

*Chairman: Lowell Wakefield, Wakefield Fisheries, Port Wakefield, Alaska*
"Problems of Allocation as Applied to the Exploitation of the Living Resources of the Sea"
Hiroshi Kasahara, Food and Agriculture Organization of the United Nations, Rome
Discussion
"The Northwest Atlantic Fisheries"
William L. Sullivan, Jr., Assistant Coordinator of Ocean Affairs, U.S. Department of State
"Alternative Legal and Economic Arrangements for the Fishery of West Africa"
E. O. Bayagbona, Director, Federal Department of Fisheries, Lagos, Nigeria
"Fisheries of the Indian Ocean: Economic Development and International Management Issues"
Arlon R. Tussing, U.S. Senate Committee on Interior and Insular Affairs and Professor of Economics, University of Alaska
Discussion

## Proposed International Fishery Regimes and the Accommodation of Major Interests

### Wednesday afternoon, June 28

*Chairman: Virgil Norton, Professor of Resource Economics, University of Rhode Island*
"International Fishery Regimes and the Interests of Coastal States"
Gunnar G. Schram, Acting Permanent Representative of Iceland to the United Nations
"International Fishery Regimes and the Interests of Developing States"
Chao Hick Tin, State Counsel, Attorney-General's Chambers, Singapore
"Interests of Developing Distant-water Fisheries"
Jae-Seung Woo, Chungang University, Seoul, Korea
"A View of a Distant-water Fishing State—Japan"
Takeo Iguchi, First Secretary, Permanent Mission of Japan to the United Nations
Discussion

## Major Positions, Problems and Viewpoints Regarding the Needs and Interests of Developing States

### Thursday morning, June 29

*Chairman: Richard Young, Attorney and Counsellor at Law, Van Hornesville, New York*
"The U.S. Position"
Bernard H. Oxman, Assistant Legal Adviser, U.S. Department of State
"The Patrimonial Sea"
Andres Aguilar, Ambassador of Venezuela to the United States
"The Legal Regime of Archipelagoes: Problems and Issues"
Mochtar Kusumaatmadja, Padjadjaran University Law School, Bandung, Indonesia
"Supplementary Remarks"
Mochtar Kusumaatmadja
Discussion

## An Appreciation of the Conference Discussion

### Thursday afternoon, June 29

*Chairman: William T. Burke, Professor of Law, University of Washington, Seattle*
"Remarks"
Chandler Morse, Professor Emeritus, Cornell University, Ithaca, New York
"Remarks"
H. Russell Bernard, Associate Professor of Anthropology, West Virginia University, Morgantown
"Remarks"
Eduardo Ferrero, Professor of Law, Pontificia Universidad Catolica del Peru, Lima
Discussion

### Thursday evening, June 29

"Banquet Address"
Paul B. Engo, Permanent Mission of Cameroon to the United Nations

# APPENDIX C: Conference Participants

ABEL, Ekkehare, Scientific Counselor, German Embassy, Washington, D.C.

AGUILAR, Andres, Ambassador of Venezuela to the United States, Washington, D.C.

AKE, Charles, CDR, USN, Organization of Joint Chiefs of Staff, Washington, D.C.

ALEXANDER, Lewis M., Director, Law of the Sea Institute, University of Rhode Island, Kingston, Rhode Island

ALLEN, Richard B., Executive Secretary, Atlantic Offshore Fish and Lobster Association, Narragansett, Rhode Island

ANAND, Ram P., Dept. of International Law, Jawaharlal Nehru University, New Delhi, India

ANDERSON, Lee, Asst. Prof. of Economics and Marine Science, University of Miami, Coral Gables, Florida

BACCAM, Dara, East-West Center, Honolulu, Hawaii

BACCAM, Khuyen, East-West Center, Honolulu, Hawaii

BARBER, Stephen, University of Miami, Coral Gables, Florida

BARNETT, Arthur, Permanent Secretary, Ministry of External Affairs, Nassau, Bahamas

BARTLETT, Jessie, Barrister Middle Temple, Washington, D.C.

BAYAGBONA, E. O., Director, Federal Fisheries Department, Lagos, Nigeria

BEESLEY, John Alan, Bureau of Legal and Counsular Affairs, Department of External Affairs, Ottawa, Ontario, Canada

BELLO, Emmanuel, Columbia University School of Law, New York, New York [Nigeria]

BERNARD, H. Russell, Assoc. Prof. of Anthropology, West Virginia University, Morgantown, West Virginia

BERNFELD, Seymour S., American Metal Climax, Inc. (AMAX), Denver, Colorado

BERRYMAN, Matilene S., Prof. of Marine Science, Washington Technical Institute, Washington, D.C.

BIGOMBE, S. T., Third Secretary, Uganda Mission to the United Nations, New York, N.Y.

BLAKE, F. Gilman, Technical Assistant to the Director, Office of Science and Technology, Executive Office of the President, Washington, D.C.

BOLAND, Kells M., Asst. for International Affairs/ Liaison, U.S. Naval Oceanographic Office, Washington, D.C.

BOTZUM, Jack, Asst. Editor, *Ocean Science News*, Washington, D.C.

BROWN, James, Editorial Board, The *New York Times*, New York, N.Y.

BURKE, William T., College of Law, University of Washington, Seattle, Washington

BURTON, Bess, Government Services, Washington, D.C.

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