

Boom, Doom, and Gloom Over the Oceans: The Economic Zone, the Developing Nations, and the Conference on the Law of the Sea

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The quest for an international ocean regime came with the discovery of the common heritage of mankind. Science had laid bare the hidden environment of the deep oceans and seabeds; technology had put their riches at man's reach. But the wealth of the oceans was beyond the limits of national sovereignty, beyond the limits of the classical concept of ownership. There was no law, national or international, to regulate their uses, because technical advances had made the old law of the sea obsolete. So either nations would go out there for a "grab," and, in the process, they would destroy one another and the oceans as well, or they would get together to make a new law, based on the concept that this was their common property and that it must be managed for the common good of all peoples.

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It was a generous, positive, and optimistic concept: a forecast of boom. It was an approach apt to change the relations between the rich and poor, big and small nations, and to offer a new way of dealing with the basic problems of development. It signalled a revolution in international relations, which must be an integral part of the social, political, economic, scientific, and technological revolutions of our age.

While minor prophets of boom were still squabbling, not so much on the question of whether, indeed, this was the situation which nobody, really, could deny or challenge, but whether the economic and political consequences of the "marine revolution" would mature in five, ten or fifteen years (as though this really made a difference!)—the prophets of doom took over: announcing the end of the oceans, and of life on earth, consequent on man's sinful pollution of the environment.

The prophets of boom and of doom had one thing in common: they were both universalists who saw salvation only in international cooperation. They both were true believers in the common heritage of mankind, even though their emphasis was different. The Doomists stressed renunciation: *what not to do*. The Boomists wanted action: *what to do*. The Doomists were mostly "Haves;" the Boomists were "Have-nots."

Since both schools of thought were universalists, however, they could have gotten along. Man can live with God *and* Satan, after all, and it was clear that it was necessary to conserve in order to develop and to develop in order to conserve.

In the meantime, however, a third school of thought was getting ready to take over: the prophets of Gloom. Man's foremost quality is greed, they said. It always has been, and it always will be. Nations will not yield an inch: they will take all they can get—as far as their technologies will reach, and think of today rather than of tomorrow. An extension of national jurisdiction over two hundred miles will give *Lebenstraum* to modern technologies for another decade or two and at that time man can think up another solution. Perfection is not of this world. There will always be some pollution, even though it need not be of an apocalyptic nature; there will always be some wealth from the oceans, although it need not be for all. The "common heritage" is what you leave to God after having taken for Caesar.

The United Nations Conference on the Law of the Sea is going toward a grand Concilium attempting to accommodate Gloomists, Doomists, and Boomists in one Church. Will it be possible? Will there be schisms?

The Gloomists start from a vantage point. The extension of national jurisdiction over resources, over an area including practically everything that is economically profitable, will be the starting point of the negotiations. The "Economic Zone" or "patrimonial sea," out to a two-hundred mile limit, must be taken for granted. In return, there will be a restriction of the *territorial sea*, over which full national sovereignty is exercised, to twelve miles; and there will be free transit (not "innocent") through straits and throughout the economic zone, to the limit of the territorial sea. What happens to the limits of national jurisdiction of small islands, artificial islands and archipelagoes remains to be seen. What happens to scientific research in the economic zone, beyond the limits of the territorial sea, remains to be seen. While progress has been made regarding waste dumping from ships, not much agreement has been reached, as yet, in what concerns the international ocean institutions which are to govern the seabed or ocean space beyond the limits of the economic zone. If there is a worldwide agreement on the economic zone, the consequences are complex and not yet fully explored.

As is well known, the idea of extending national jurisdiction over ocean areas which, until then, had been no-man's land, goes back to the Truman Proclamation¹ of 1945. In an essay² written for *Pacem in Maribus* three years ago but looking well ahead of its time, Bertrand de Jouvenel analyzed the reasons that induced what was then the world's greatest marine power, the U.S.A., to deal such an unorthodox blow to the hoary doctrine of the freedom of the seas which, since the days of Grotius and Selden, had always been the doctrine of the strong. De Jouvenel reminds us that the Truman Proclamation was an *internal*, not an *external* act, in the first place. It determined relations between states and federal jurisdictions (and economic interests), not between federal and international jurisdictions (and economic interests). It should also be remembered that the oil industry kicked and screamed against the Truman Proclamation. They called it

1. Proclamation No. 2667, *Policy of the United States with respect to the Natural Resources of the Subsoil and Sea Bed of the Continental Shelf*, Sept. 28, 1945, 59 Stat. 884 (1945).

2. DeJouvenel, *An Economic View of Marine Problems*, in *THE TIDES OF CHANGE, PEACE, POLLUTION AND POTENTIAL OF THE OCEANS* (E. Borgese and D. Krieger, eds., forthcoming 1974).

creeping Communism, foreshadowing "the end of the oil industry as we know it." This, again was in view of its internal, not its external implications.

As for the external implications which came to the fore somewhat later, de Jouvenel points out that they served American economic interests in a dubious way. For the only companies which could in fact have exploited the outer continental shelf were American or American dominated. So who would have contested or challenged American exploration and exploitation of the American Continental shelf? The fact is that by gaining what nobody contested anyway, while losing the rest of the world's 5,753,400 square nautical miles of continental shelf to a depth of 200 meters, they conceivably lost far more than they gained—as was pointed out, at that time, by Senator Pell,³ by Professor Wolfgang Friedmann,⁴ and others.

It would seem logical, then, and in line with history, that the poor nations should gain more than the rich by an extension of "sovereignty" into the seas. Hence, a rush of expansionist claims: Argentina's in 1946;⁵ Chile's in 1947;⁶ Peru's in 1947;⁷ and the Declaration of Santiago in 1952⁸—all claiming not only the ocean floor but the superjacent waters, or "epicontinental sea" as well, out to a limit of 200 miles.

The Truman Proclamation was universalized in the Geneva Convention on the Continental Shelf, now ratified by forty-nine nations, both rich and poor. On the part of the developing nations, this was followed by the Declaration of Santo Domingo, in 1972, proposing the creation of the "Patrimonial Sea," and the Yaounde Declaration, advocating the "economic zone" of 200 miles. Undoubtedly this is the shape of things to come at the UNCLOS.

It should be noted that, from the beginning, the developed nations concentrated on the *ocean floor*, the developing nations claimed the *floor and the superjacent waters*. This, again, is logical. For it is only the rich nations who have the technologies for ocean

3. Pell, *Assessment of the Political Dimensions of an Ocean Regime*, LEGAL FOUNDATIONS OF THE OCEAN REGIME, at 205-18 (1971).

4. Friedman, *Selden Redivivus—Toward a Partition of the Seas?*, 65 AM. J. INT'L. L. 757-70 (1971).

5. Decree No. 14,708 October 11, 1946, in Boletin Oficial, Dec. 5, 1946.

6. President Declaration of June 23, 1947, U.N.L.S., Laws and Regulations on the Regime of the Territorial Sea 723 (ST/Leg/Ser/B6, 1956).

7. Supreme Decree No. 781 of August 1, 1947 in El Peruano, Diaro Oficial, August 11, 1947.

8. Agreements between Chile, Ecuador, and Peru, Signed at the First Conference on the Exploitation and Conservation of the Maritime Resources of the South Pacific, Santiago, 18 Aug. 1952.

mining. As far as fishing is concerned, they dispose of far-ranging fishing fleets profiting from a maximum of freedom of the seas. The poor nations are at least as much interested in fishing as in mining. They do not dispose of far-ranging fishing fleets, and it is logical that they should want to reserve fish stocks in the waters adjacent to their coasts for their own use and to protect them against the predatory inroads of the technologically strong nations.

Whether *practically* the acquisition of the economic zone as such will be as beneficial to the poor nations as is now assumed, remains to be seen.

When the oil companies realized that the *external* implications of the Truman Proclamation were far more important than the internal ones, they had a change of heart. They warmly embraced the continental shelf doctrine. In policy statement after policy statement,⁹ the American Petroleum Council counseled extension of national jurisdiction out to the edge of the continental margin, including the rise, if possible, containing everything that could conceivably be exploited for several decades to come. As far as foreign continental shelves were concerned, the big companies were convinced that they could cope with foreign countries on the seabed as they did on land. To negotiate royalties or joint ventures with individual sheiks seemed a far safer, more familiar, and more profitable procedure for the powerful companies, than to deal with a strong international organization.

Should not this make the poor nations suspicious?

True there is OPEC now, and trouble for the developed nations. But this may turn out to be a fleeting triumph, not necessarily conducive to development. There will be some more money for a few already over-moneyed poor nations—money that goes into golden Rolls Royces and Swiss bank accounts; money that makes the money market go haywire without visible benefit to the majority of poor nations. As far as the rich nations are concerned, there will be serious trouble and dislocations, perhaps paralysis. But they will concentrate their efforts on developing alternative energy resources and technologies, far more powerful than oil, and inexhaustible, which, again, they will monopolize, thus further

9. See, e.g., *Statement of Policy—American Petroleum Institute*, in *PACEM IN MARIBUS, OCEAN ENTERPRISES* at 11-12 (center for the Study of Democratic Institutions, E. Burnell and P. Von Simson, Eds. 1970).

deepening the development gap. All this furthermore, will profoundly alter the perception of national interests in the continental shelf, as documented by Lewis Alexander in a paper for *Pacem in Maribus IV*.¹⁰ But this is in the future.

For the present, industrial and commercial interests, the most exploitative interests within the rich countries, happily accept the extension of national jurisdiction in the oceans—they can live with it.

And the poor nations should be suspicious.

What is true for oil is beginning to be true for the fishing industry as well. The big fishmeal producing companies and conglomerates are sending their managers happily from one developing nation to another—in the Pacific, the Indian Ocean, West Africa, all over—to develop new fisheries. These men are not in the least concerned about the extension of national jurisdiction. Where there are no fishes, it makes no difference anyway; where there are fishes, the poor coastal nations often are not even in a position to know where the fish are; they can be spotted from high-flying planes or satellites—primitive methods can in no way exploit the “sustainable yield.” Developing nations need the big companies. Joint ventures provide a perfectly acceptable instrument to get the job done; especially if they are accompanied by international guarantees for the security of investments, thus strengthening the status quo; and additionally if they leave top management, and the majority of shares, in the hands of the foreign company, thus making sure the company will get its fair share.

Yugoslavia has a long and extensive experience with joint ventures. The developing nations should take a careful look at this experience. The lesson is: if the domestic enterprise is no match, technologically and/or financially, for the foreign company or multinational, the deal will work out altogether in favor of the latter. It will still be a case of post-colonial extraction economy, pure and simple. If, on the other hand, the domestic enterprise is strong, the enthusiasm of the foreign company is quick to wane.

Pacem in Maribus recently commissioned some research on the impact of the extension of national jurisdiction on the GNP of coastal nations. The research was done by Professor H. Gary Knight of Louisiana State University.

The results are far from reassuring. A comparison between fisheries revenues for the ten nations with the highest GNP, the ten developing nations with the highest GNP *and a fishing zone not*

10. Alexander, *National Interests in the Continental Shelf*, in PROCEEDINGS OF PACEM IN MARIBUS IV, at 312-32 (D. Krieger, ed., forthcoming 1974).

*exceeding twelve miles, and ten developing nations with a fishing zone of over 100 miles, lead him to the conclusion that "clearly, revenue is a function of economic development, not the quantity of ocean space jurisdiction claimed."*¹¹

All this is not to say that the concept of the economic zone should be abandoned. Politically and historically such a goal would be unobtainable. The economic zone or patrimonial sea is with us. If it has no developmental value, nonetheless, it does have a certain *defensive* value. It also has a *bargaining* value, in the hands of the weaker nations, and they should make the most of that.

The intention of this analysis merely is to show that, while it is a bargaining asset, the economic zone is no solution to the problems set out to be solved with the Conference on the Law of the Sea. The oceans still are an ecological whole. The rational management of ocean space and resources still requires *international* action. The development gap still is upon us. The creation of international institutions capable of rational management of the common heritage of mankind and apt to reduce the development gap remains the great challenge. This, still, implies a revolution in international relations.

But the acceptance of the economic zone forces us to rethink our concept of the international ocean regime. Four immediate basic consequences come to mind, two of them negative, two positive, with a number of practical corollaries.

First, the establishment of the economic zone drastically reduces the economic viability of the international regime. For all practical purposes, it removes oil from international management. Oil royalties will continue to accrue to nations, not to the international community. International community royalties would have meant redistribution of income; sharing, by the poorer nations, in the common heritage of mankind; cooperation, instead of confrontation, in the energy crisis. Nation-state royalties mean money will continue to go where money is.

The same is true for the bulk of income created by fisheries, since most of the fish, about 85 per cent, are within the limits of the economic zone.

11. Knight, *Impacts of Some Law of the Sea Proposals on Gulf and Caribbean Ocean Resource Development*, CARIBBEAN STUDY PROJECT WORKING PAPERS, INTERNATIONAL OCEAN INSTITUTE at 366-413 (1973).

The only wealth created in the area beyond the limits of the economic zone will be that of the manganese nodules. Income accruing to the international community from these nodules has been estimated as approximately \$6,000,000 annually by Dr. Frank LaQue. This is not peanuts, but certainly it is not enough to close the development gap, even if it were to be administered equitably, from a world community point of view, which will not be the case.

It is more than likely that, as the mineralogical implications of the latest marine-geological concepts become clearer, new and vast mineral resources will become economically exploitable on the deep ocean floor, especially on the slopes of the mid-Oceanic ridges. But that is for the future.

The second basic consequence follows from the first. To the extent that the international regime is bereft of its real and immediate economic potential, interest in international institution building is bound to wane. The developing nations will be so occupied with the prospect of acquiring an economic zone that they will scarcely be willing to look beyond. Their technological range does not reach that far. They will have their hands full developing what they have now under their own jurisdiction. Here, again, they will gently comply with the wishes and interests of Big Business in the rich countries. For, as is well known, neither the companies, nor the rich developed nations want strong, operational, international institutions. This consequence, again, is unfortunate for the developing nations. For without strong, operational, international institutions, the rich will continue to dominate.

In the absence of strong, operational, international institutions, transnational functions like pollution controls and a minimum of maritime traffic regulation would be left to enlarged, specialized agencies.

And thus the danger is that we will end up with a patchwork of inflated contending national jurisdictions and overlapping functional international competences. This is not the way to run an ocean, or anything else. The first casualty would be the common heritage of mankind—mentioned far less frequently these days in the literature and public speeches. The heaviest loss would be to the developing nations.

Alternately, consider the positive implications of the Economic Zone.

The extension of national jurisdiction over the ocean floor, with the single purpose of assuring mining rights, was a claim put forward primarily by the rich nations (and companies). The exten-

sion of national jurisdiction over the superjacent waters—the *economic zone*—has been the counterclaim of the developing nations. The economic zone is a multi-purpose zone, calling for the systemic management of national ocean space and resources. This is an important difference. It is even more important if, as a consequence, ocean space beyond the limits of the economic zone, must now be considered as a multi-purpose zone whose multiple uses call for systemic management. In other words, the establishment of a multi-purpose economic zone, comprising seabed *and* superjacent waters, dooms the notion of an international seabed authority to irretrievable obsolescence. To “knit” with the national economic zone, international ocean-space institutions are needed.

This, it seems, is very strongly in favor of the developing nations, and they should recognize the consequence and move from their past advocacy of a strong, operational, international seabed authority, now obsolete, forward to the advocacy of a strong, operational ocean-space authority as the logical complement to their national ocean-space management systems.

A single-purpose regime, regulating (rather than managing) a technology, such as nodule mining, in which only the most developed nations are competent, would quite inevitably work out in favor of these few nations. It simply would not be realistic; it would be anti-economic and anti-historical to expect otherwise. Such a regime would practically be a cartel of a few big companies from a very few nations, to run the nodule business. This is the technological reality, and no one can change it by extracting an insignificant royalty. And what else could be done?

If, instead, the ocean institutions deal with the multiple uses of ocean space, then there is elbow room for the rest of the world to come in and participate. When old and new uses of the seas, and a variety of technologies, skills, rights, and traditions are involved, then there is the possibility of bargaining, of giving and taking; then the real interests, and the opportunities of the developing nations are far greater. And to call for comprehensive oceanspace institutions rather than for a single-purpose seabed authority is the logical consequence of the economic zone concept as against the continental shelf doctrine.

Fourth, the economic zone forces consideration of the international ocean regime in *functional* rather than in *territorial* terms.

Ocean affairs, from the beginning, have occupied a curious place at the crossroads of territorial and functional thinking. Ocean space beyond the limits of national jurisdiction is a territorial concept. The management of the uses of ocean space, or of ocean resources, is a functional concept. International ocean space is territorially delimited by the boundaries of national jurisdiction. The international management of ocean resources is not so delimited. Resources, in fact, can be managed internationally even if there is no territorial space beyond the limits of national jurisdiction. The European Economic Communities set a historical precedent.

As long as the limits of national jurisdiction were at three, six, or even twelve miles off shore, the territorial and the functional concept of an ocean regime coincided, *i.e.*, regulating the *nomina*'s land of the seas, one could regulate its uses. The establishment of an economic zone makes the territorial concept of the ocean regime obsolete since the "territory" beyond the limits of the economic zone has strongly reduced functions. A territorial regime unable to regulate the functional uses of the oceans would be meaningless.

The mistake lies in considering the international community as a little island in the middle of the oceans, whose interests decrease as one moves toward the coasts. The international community is the nations and peoples of the world, and its sphere of interests is worldwide. The establishment of the economic zone makes this concept mandatory. If we want a rational management of the oceans, we must, by treaty commonly agreed upon, regulate the uses nations (and companies) make of ocean space which is an ecological whole, just as the Europeans regulate agriculture, transport, or the migration of labor in Europe, across boundaries, beyond the functional (not territorial) limits of national jurisdiction.

Such a concept would leave the defensive function of the economic zone intact; the economic zone of developing nations would be impermeable to penetration and exploitation by other technologically superior nations. On the other hand, it would not foreclose the developmental opportunities that accrue from strong, operational international ocean institutions. The economic zone should be permeable to international cooperation and management in which the developing nations have a decisive share in decision making.

What, then, should be the advantages the developing nations hope to obtain from the Law of the Sea Conference? What is their bargaining position? What is the *quid pro quo* they can exact from industrialized nations, once the establishment of the economic zone is an established fact?

Above all, they should press for institutions that are not only *comprehensive* but *operational* as well.

At present, the only government that has proposed comprehensive, multi-purpose ocean space institutions, as against a single-purpose seabed authority, is Malta (which, at this point, is not pressing very hard for the adoption of its own scheme). It would be extremely worthwhile for the other developing nations to take up the scheme and modify it as desirable.

The reasons developing nations have been hesitant to take the step from a single-purpose seabed authority to a multi-purpose comprehensive ocean regime are, generally speaking, of two kinds. Let us not reach for the moon and come back empty-handed, they have said. A comprehensive system is too complex, it cannot be realized all at once; so let us be practical and take one step at a time. A seabed authority *can* be established now; comprehensive ocean-space institutions, not yet. The second, and perhaps more generic reason is that they have done their "home work" with regard to the seabed authority. Their drafts are completed; they are ready to negotiate. They have not done this kind of work with regard to ocean space as a whole. They do not have the manpower to prepare comprehensive alternatives prior to the Law of the Sea Conference scheduled to begin this summer.

The fact, however, is that no matter what, the Law of the Sea Conference is going to be comprehensive. As is well known, there is a "competence gap" between the mandate of the Seabed Committee, whose terms of reference were limited to the seabed, and the mandate of the Law of the Sea Conference, which is to deal with ocean affairs in the broadest sense. This competence gap may have very serious consequences; the danger is that ocean affairs in the broader sense will be dealt with piece-meal, in an uncoordinated and unsystematic way, causing loop-holes and overlaps, rather than in a systematic and coherent way. The piece-meal and unsystematic approach, however, costs at least as much, if not considerably more, work and preparation as the systematic and coherent approach. It is a question of concept, not of work.

As to the argument that not everything can be done at once and that one must start somewhere, this is undoubtedly correct. But again, it is one thing to start haphazardly, to take a step which may have to be taken back before taking the next; and it is quite

another thing to have a comprehensive scheme with a timetable attached to it, internationalizing a series of functions over a number of years, just as was, and still is being done by the European Economic Communities.

Having laid down one comprehensive scheme, one might then envision that deep-sea nodule mining, for instance, should come under international control immediately—not because it happens to take place “beyond the limits of the economic zone,” but because it represents the newest use of the oceans and therefore is perhaps most amenable to a new type of international approach. Oil and other energy production, shipping, and fisheries might come in successive stages. Each successive step represents a widening of the concept of the common heritage of mankind, with the legal implications of non-appropriability and participation in management as well as in the profits derived therefrom.

But the comprehensive scheme must be there, otherwise the first step is bound to go in the wrong direction *i.e.*, it will not be beneficial for the developing nations, which will be practically left out.

To be operational, the regime must provide for an “enterprise” or “enterprises” under the control of the political ocean-space institutions. Such enterprises provide the only realistic opportunity for the developing nations to enter as active partners into the production process. The “enterprise” is essential if one wants to realize an active concept of the common heritage, as implying not only passive sharing of financial benefits, but sharing in decision-making and management, and an acceleration in the transfer of technologies and skills.

The Seabed Draft Treaties of all the developing nations contain, in fact, provisions, albeit too sketchy, for the establishment of such an “enterprise.” In the new, enlarged context, this should not be abandoned. It should be adapted and expanded.

Here again, it would not be practical to have a whole series of international, public/private enterprises established at once. It will take time. But the institutional framework can be created immediately, and there must be a time schedule.

In return for the concession of the “economic zone,” the Great Powers ask for certain guarantees: the freedom of navigation beyond the limits of the territorial sea and free transit through straits; the freedom of scientific research, to a twelve-mile limit at least; and security of investments for the exploitation of the economic zone.

These requests, however, should not be considered as the price to be paid by the developing nations for the acquisition of the eco-

nomic zone. There is no price due. Actually, the economic zone is the price the rich nations are paying for the Truman Doctrine. It is they who started the escalation of territorial expansion into the sea. So, any other point ought to be considered on its own merits.

Freedom of navigation and of transit through straits clearly is more interesting to the great sea powers than to developing nations. Hence the developing nations have it in their power to exact a price: a price, the payment of which is apt to strengthen the kind of comprehensive and operational ocean regime that is beneficial to developing nations. A fair price to be paid for freedom of navigation and transit through straits is the internationalization of tracking devices and monitoring systems, from seabed installations to buoys and satellites.

In a paper commissioned by *Pacem in Maribus*, Professor Thomas Mathews documented how the most sensitive areas of the oceans today are "bugged" by the great powers. His example is the Caribbean Sea, which has fallen under the complete surveillance of the United States, with little awareness on the part of those being watched.

The silent satellite as it passes five hundred miles overhead bothers few except those who are conscious of its existence. There is little occurring on the surface of, for example, Cuba, which is overlooked by the cameras. . . .

Underseas, there is a surveillance system known as SOSUS,

which can detect and locate any submarine penetration of the Caribbean. With naval and air reconnaissance units, and satellite surveillance, the military has the Caribbean sewn up fairly tight. The implications of such a complete system of surveillance over an area in which there are twenty five million people, six sovereign states, and international waters and airways utilized by all nationalities should give rise to concern on the part of the citizenry of the region.¹²

The situation is not much different in other sensitive ocean areas. What is more, the installation of such surveillance systems is perfectly legitimate under the existing law of the seas. One should also add that it is essential for a sea power to know about all movements on and under the sea, within the range of its own

12. Mathews, *An Historical View of the Geo-Political Aspects of the Lines of Communication Through the Caribbean Sea*, CARIBBEAN STUDY PROJECT, *supra* note 11 at 136-69.

operations which, of course, may be world wide. Nations which cannot afford such surveillance systems obviously are disadvantaged.

If the intent of the information thus gathered is defensive, however, i.e., really aimed at security, it might as well be shared—which also would make it far cheaper and more complete. Only if it is to be *offensive*, i.e., aimed at insuring the supremacy and domination of any one nation in the oceans, does it make sense to keep it secret under national monopoly. The new law of the sea should be aiming at the maximum possible reduction of national domination in the seas. The internationalization of tracking devices and surveillance systems would be a step in this direction.

Add to this that, to be economical, tracking and monitoring systems should be multi-purpose systems. That is, in many cases the same installations, platforms, buoys, and satellites used to track military movements can be used to monitor pollution, locate schools of fish, or for other peaceful purposes. Insofar as they are serving such peaceful purposes, these systems should be internationalized anyway under the new law of the sea. The convergence of pollution control policies and arms control policies, or the arms-controlling effects of pollution control measures in the oceans is a matter of growing importance, bound to affect the very structure of ocean-space institutions. In a recent paper, Elizabeth Young wrote:

The activities of the various existing and planned United Nations bodies and of an ocean regime's own organization are bound to result in a considerable international presence in ocean space. . . This presence, of itself, would have an arms control effect, proportionate to its scale and to the range of its activities, and at some point it will be necessary to consider how this effect can be enlarged and enhanced. . . Any inspectorate, research exercise, monitoring body, is part of a *de facto* international verification system. In setting them up arms control significance of the information they are to acquire should be kept in view and eventually concerted.¹³

The internationalization of tracking devices and surveillance systems can be accomplished at once. It is a fair price for the freedom of transit.

Freedom of scientific research, theoretically, is of equal interest to all people and all nations. Science is the common heritage of mankind *par excellence*, and it should be managed by all nations cooperatively and for the benefit of all. Science in the oceans, fur-

13. Young, *Arms Control in the Ocean, Active and Passive*, THE TIDES OF CHANGE, *supra* note 2.

thermore, is at the vanguard of all sciences in two ways: first, the new understanding of marine geology is revolutionizing our understanding of the geology and history of the earth as a whole; and, second, the very nature of ocean research makes it mandatory, due to the very nature of the world ocean itself, that this research be carried out internationally. The nation that opts out of this science in fact opts out of modern civilization, and opts out of development.

This, however, is theory. Practically, there can be no doubt that the industrialized nations have a far greater immediate return from unrestrained scientific research in the oceans than the developing nations, who are not equipped to participate in, and often, even to evaluate the results of the research. There can be no doubt that in the developed nations scientific research is inextricably linked with both industrial and military interests, and the line between "pure" and "basic" research, commercially valuable exploration, and military reconnoitering is impossible to draw. Publication of the results is not an adequate answer, if what is "published" is in fact undecipherable to the developing nations along whose coasts such research is carried out. The case of the developing nations who want to control and restrict such research thus is as ironclad as the case of the developed nations demanding freedom of research.

Here again, the developing nations could use their leverage to advance the kind of comprehensive and operational ocean-space institutions they need. Instead of restricting scientific research off their coasts, which retards their own development, they should demand the *internationalization* of research by means of the establishment of a "scientific enterprise," *i.e.*, an international ocean research institute, in whose management and policy-making they participate and which would be under the control of the governing organs of the international ocean regime. Such an institute would guarantee that ocean research is "pure." It would interpret data. It would serve as a training center for scientists from the developing nations; and it would accelerate the transfer of knowledge and technologies. Only science channeled through the International Ocean Institute should be "free" and unrestricted. Developing nations would be quite justified in keeping their defences up against national research not so channeled.

We have tried to plant the seed for such an institute with the establishment, under UNDP auspices, of the International Ocean In-

stitute in Malta. It is a very modest beginning. It would be to the best interests of the developing nations, and of ocean science in general, to make of such an institute, greatly enlarged, a constituent part of the international ocean regime.

International guarantees for the security of investments, again is a one-sided demand serving only the rich. Where changes in social, political, and economic infrastructures are needed for development, such guarantees may in fact serve to reinforce the status quo and to forestall change. The extension of jurisdiction over resource-rich economic zones will increase the dependence of poor nations on rich companies and joint ventures. Confrontation between organizations limited to resource-owning developing nations (of the OPEC type) and resource-importing industrialized nations will not solve the problem in the long run—if only because resource-poor developing nations are left out of the bargain. In the case of petroleum, for instance, it is already clear that it is this third group of nations who suffers most from the cost increase resulting from this confrontation. The only solution would seem to subject disputes to regulation by the international ocean authority. Multinationals should be chartered internationally, and standards for the international operations of companies ought to be laid down by the appropriate bodies of the ocean regime, bearing in mind the needs of all countries.

The price for international guarantees for the security of investments should be the international regulation of the companies.

It is also likely that the competition coming from a public/private international "Enterprise" along the lines of the Latin-American proposal would serve to raise standards of international cooperation for the benefit of the developing nations.

It is hoped that this "shopping list" of *quae pro quibus* might contribute to the building of a platform for the meeting of Boom, Doom, and Gloom over the oceans, and to the reconciliation of the needs of development, the preoccupations with environmental constraints, and the national interests of all parties concerned.

