

TO

ICIDI

Independent Commission on International  
Development Issues

M E M O R A N D U M

## INTRODUCTION

The following observations are submitted with the intention of drawing the attention of the Commission to an issue which generally is not, or only marginally, included in agendas on international development and which, in our view, deserves a central place, and that is

### Marine Resources, Ocean Management, and the New Law of the Sea

The item enters the scope of the Commission's considerations under the heading "environmental and resource issues" but is far more comprehensive than this heading would indicate.

Ocean management is presently being dealt with by the Third U.N. Conference on the Law of the Sea which is in an advanced stage of its negotiations. The development potential of marine resources and management, however, are far broader than the legal scope of that Conference.

To deal with this subject in the wider economic and political context of the Commission would have at least three fundamentally important advantages:

1. It would add a new dimension to the Commission's discussions: a dimension which will be of increasing importance over the next 25 years. In the perspective of a decade or two, ocean management most certainly constitutes an area "where new approaches to international economic relations seem especially called for", and "where the opportunities seem particularly great". (Letter of Goran Ohlin, 9 April, 1978).
2. The recommendations of the Commission, arrived at in the wider context of the Commission's agenda, might have a favorable influence on the further development of the Law of the Sea and ocean management.
3. Issues of ocean management, inevitably, due to ecological imperatives, linking developed and developing countries, provide a basis of common interests and common action between "North" and "South."

The great importance of ~~the oceans~~ for development strategy and international cooperation lies in two areas:

- . resource development and redistribution;
- . development of new institutional forms of international cooperation and organization.

In both these areas, ocean management can make a vital contribution to the building of a New International Economic Order, based on cooperation between "North" and "South."

## I. Resource Development and Redistribution

### 1. Living resources

Food from the oceans has never constituted more than a small percentage -- never more than 3 percent -- of world food. During the last decades, furthermore, there have been signs of stagnation and exhaustion in marine fisheries, and the estimates for the "maximum" or "optimum" sustainable yield on a world scale, made only ten years ago, had to be reduced drastically. It is understandable, therefore, that development plans, designed to meet the rising food requirements for the eighties and beyond, tend to overlook the food potential of marine resources. It should be kept in mind, however, that

(a) it is, in particular, the populations of the poorest countries which depend most heavily on fish for the satisfaction of their protein requirements. People in the rich nations fill their animal protein requirements by eating meat and drinking milk: Two thirds of the world's meat and milk production is consumed by less than one quarter of the world's population. The other three quarters depend on fish for the greater part of their animal protein.

(b) The present *laissez faire* system of production and distribution is highly inequitable. Over 75 percent of the world's total catches are fished by fourteen nations. Exhaustion of commercial stocks, economic irrationality, and iniquity in distribution are caused by mismanagement or lack of management. A New International Economic Order, bringing the world fisheries under a rational and equitable system of management, could contribute considerably to alleviate hunger among the poorest part of the world population.

(c) There are large, untapped "unconventional" resources -- e.g., the krill of the Antarctic Ocean, potentially a *multiple* of the present world catch, which should be brought under a common heritage system of international management now, for the benefit of peoples most in need of animal protein. Action on this matter is urgent to prevent the Antarctic Treaty powers to present the world with a *fait accompli*.

(d) Whether we are aware of it or not, a major transformation in our uses of the oceans is in course. In its use of living aquatic resources mankind is passing from a hunting stage to a culture stage. The advent of *aquaculture* may be a development as important, in anthropological terms, as the advent of agriculture ten thousand years ago. Aquaculture, that is the farming of seaweeds, molluscs, crustaceans and fin fish in fresh, brackish and sea water, has a long tradition and broad social and economic infrastructure in some parts of the world. In recent years, its systematic and scientific application has expanded to other parts, and production has increased dramatically: more than doubling in the half decade from 1970 to 1975 (from 2.6 million to 6 million tons). A five-fold, even ten-fold increase would be possible even with existing technologies. This expansion would have the following advantages:

(i) There are physical limits to the expansion of agricultural land, especially considering the crucial ecological importance of tropical rain forests. There are no physical limits to the expansion of aquaculture. In Asia, for instance, where even the most optimistic forecasts, such as the Bariloche Report, point to the limits of available land as the basic constraint on the possibility of realizing food targets before the end of this century, and, therefore, to the need to resort to "unconventional" food production, such production certainly should include aquaculture.

(ii) Aquaculture is less vulnerable to climatic irregularities, such as excess heat or cold or droughts, than is agriculture. E.g.: terrible droughts are afflicting the coast of Brazil. Having ruined the coffee crops, they are now threatening the soya crop. The loss could be, at least partially, balanced by utilizing the unaffected rich aquatic resources, mountain lakes, rivers and marine areas, for the systematic and scientific production of aquatic foodstuffs.

(iii) While agriculture is two-dimensional, yielding one crop per area at a time, aquaculture is three-dimensional, giving the possibility of polycultures and multiple crops.

(iv) Fish are more efficient nutrient converters than land animals. It is cheaper, in capital and labor, to produce a ton of protein from aquatic resources than from terrestrial stocks.

There is only one country in the world that has fully integrated the development of its aquatic resources into its general development plan, and that is the Peoples Republic of China. In China, *aquaculture is conceived as an integral part of agriculture*. Agriculture, aquaculture, and navigation are seen to have a common matrix in *water management*, and water management thus is given a top priority in national planning. The results of this policy, in two brief decades, have been astonishing: for agriculture, for navigation, and for aquaculture. Suffice it to mention that China alone produces today almost half of all the world's aquaculture products and that fish and aquatic plants make a vital contribution to people's nutrition. There is a great deal the world community could learn from the Chinese experience with a unitary, land- and water-based concept of development strategy. China's economy, of course, is primarily an inward-oriented economy. Its water management extends to its rivers, lakes, ponds, canals and reservoirs, whose surface has been increased a hundredfold over the last two decades. China has not applied the same energies to ocean management which, perforce, is the domaine of international action and responsibility.

*The oceans are the lakes and rivers of the international community. Water conservancy and management policies at the world level, integrating the uses of the oceans and conceiving aquaculture as an integral part of agriculture, could, over the next decades, reach similarly spectacular results. Here is a great new opportunity for the Strategy. (In this connection one should not overlook the enormous importance of the oceans as a source of fresh water.)*

## 2. Minerals and metals

The mining of the seabed for metals and minerals has some antecedents. The extraction of sea-salt has a very long tradition; the tunnelling for coal, the mining of diamonds, of sand and gravel, and the mining of the continental shelves for calcium carbonate, titanium and gold placers, phosphorites, iron and zink, has been going on throughout this century and even before. But this type of production was rather marginal within world production as a whole. In 1970 the total value of worldwide production from the sea was estimated as \$1 billion.

In the seventies, however, the "marine revolution," that is, the extension of the industrial revolution into ocean space, has progressed rapidly, and ocean mining may become a vitally important factor in world economics.

Three developments merit particular attention:

(a) the metalliferous brines in the middle of the Red Sea -- where one pool alone, the so-called Atlantic II Deep, contains 1.5 billion dollars worth of copper, zink, silver and gold. These brines are presently being explored by an international joint venture of the Sudan, Saudi Arabia, and the Federal Republic of Germany;

(b) the polymetallic nodules, rich in nickel, copper, cobald and manganese, spread over the deep ocean floor of the mid-Atlantic, Pacific, and Indian Ocean. 1.5 trillion tons are supposed to be spread in the Pacific alone. There are, at present, half a dozen big international consortia ready to go into action. The investments already made are very large, and bigger ones are yet to come if the industry is to pass successfully from the stage of research and development to full-scale commercial production at the rate of raising and processing perhaps ten million tons of nodules annually in the 'eighties, generating a revenue of roughly a billion dollars a year. Current research, in connection with nodule development, on *new uses of manganese* may have a considerable impact on the economies of some developing countries and on *industrial restructuring*.

(c) Beyond mining the ocean floor, there appears, on a somewhat more remote horizon, the technological possibility of mining the ocean waters: "the liquid mine." The ocean water, as far as known, contains at least ten million tons of gold, 2 billion tons of uranium, and at least 60 other valuable minerals and metals in unbelievable quantities. These, however, are so diffused in huge quantities of water that no amount of conventional energy would be sufficient to concentrate and extract them. Now, however, it has been discovered that certain marine animals and plants can be used to do the extracting. Thus algologists are presently working on experimental "uranium farms" where uranium is concentrated by algae and extracted from them, with a secondary production of methane and fertilizer. By the end of the century, one may thus look forward to an interesting synthesis of marine "farming" and marine "mining."

All this may amount to a veritable revolution in the mining industry. If this were considered within the framework

of a NIEO, and sufficient scope were given to *international cooperative enterprises on the basis of the common heritage principle*, the shift from national land mining to international ocean mining would not constitute harmful competition with land-based producers among developing countries: it might instead contribute enormously to the development and genuine economic emancipation of developing countries, many of which are held back -- and are holding themselves back -- in the bonds of a post-colonial extraction economy which, as post-World War II history clearly shows, is not conducive to development. Internationalized ocean mining, while creating considerable funds for international development, will free these countries and assist them to diversify their economies and to industrialize. For the full participation of developing countries in international ocean mining, it is essential, however, that early attention be given to the *training of ocean mining experts from developing countries*. Without this -- and with or without International Seabed Authority -- the common heritage of mankind would be appropriated by the industrialized States and their companies, further increasing the development gap, both in economic and technological terms.

## II. New Institutional Forms of International Cooperation

The emerging ocean regime could make a major contribution to North-South cooperation in the building of a New International Economic Order in three areas, by providing an *institutional framework* for

- . international resource management systems;
  - . a structured relationship between TNEs and the international community;
  - . a system of international taxation, engendering funds for international development and greater automaticity in resource transfers;
- . the restructuring and integration of the U.N. system of organizations.

### 1. International resource management systems

Until now, extensive technical and political work has been done with regard to only one international resource management system, and that is the *International Seabed Authority* which is to manage the mining of polymetallic nodules from the deep seabed. This Authority, laboriously constructed by the U.N. Conference on the Law of the Sea, thus will have a unique importance as a *model* for other international resource management systems which must necessarily be created in the framework of a New International Economic Order.

The establishment of an international resource managing system is without precedent in the history of international organization. It is a break-through. It is not surprising, therefore, that the technical and political difficulties are enormous, and that the Law of the Sea Conference has not yet succeeded in solving the problems. The present deadlock might conceivably be broken if the Conference decided to fall back on an alternative on which developing countries spent much time during the time of preparation for the Conference, and which was then re-introduced by Nigeria in 1976 and elaborated by Austria in a statement by Ambassador Wolf. See *Note by the Secretariat*, 28 April 1977, Enclosure 6 and informal working papers, which can be summarized as follows:

The approach would be based on a *structured cooperation* between the private sector and the international management system, following the pattern, well accepted by Industry (a recent private meeting of the Consortia in Geneva looked at this alternative with a quite open mind) of *equity joint ventures*: Any State or State-sponsored or designated company would have access to the international area, under the condition that it form a *new Enterprise*, to which the International Seabed Authority contributes at least half the capital investment (including the value of the nodules which are the common heritage of mankind) and appoints at least half the members of the Board of Governors (from developing and industrialized countries without a seabed-mining capacity of their own), while the remaining capital is provided by States or companies, who appoint also the remaining members of the Board of Governors,

in proportion to their investment. Product, and profit, are divided in proportion to investment.

This approach would solve some of the thorniest problems still before the Conference: the problem of technology transfer, and that of financing the international resource management system which cannot possibly get off the ground if, instead of *cooperating* with the State and private sector, this system is so structured that it must *compete* with it.

## 2. Transnational Corporations and the International Community

At the same time, an *enterprise system* such as outlined here, could make a second major contribution to the building of a new international economic order. It could provide a model for *bringing TNEs into a structured relationship with the international community*. While incorporating applicable parts of existing codes of conduct, this would be a considerable step forward: incorporating also features of the *European Companies* as proposed by the EEC and responding to the need for a *democratization of decision-making, and representation, on the Board, of other than purely financial interests* (the Authority-appointed Board members could include representatives of labor and of consumers).

Considered from this angle, the applicability of this model could be very wide: as wide as the range of the TNEs -- the wider, the better for the NIEO.

On this issue of the *Enterprise system* the Commission not only could make a contribution to the building of a NIEO and of innovating forms of cooperation between, on the one hand, the International Community and the State or private sector and, on the other hand, between North and South -- the Commission, considering the problems in this wider context, could also contribute to a favorable solution of these problems by the Law of the Sea Conference.

## 3. International taxation

In 1970 the International Ocean Institute published a plan for the establishment of an Ocean Development Tax: that is, a small levy -- e.g., one percent -- on all major uses of the oceans, be it the production of offshore oil and gas, commercial fish production, navigation, or the use of cables and pipelines. Such a tax should be collected by States and paid to the international ocean organizations, or, in other words, States' contributions would be assessed on the basis of their uses of the oceans. The tax would be based on a *functional* criterion (the use of the oceans, anywhere), not on *territorial* criteria (there would be no distinction between areas under national jurisdiction and international areas).

During the last decade, the idea of an international tax of this sort has cropped up again and again. First, Canada espoused it in the Seabed Committee with regard to minerals only. While the Law of the Sea Conference, in the Composite Text, has given a territorial aspect to the proposal and restricted it to the continental margin beyond the 200 mile limit of the exclusive economic zone (there will be no revenue for the foreseeable future), the U.N. Environment Programme (UNEP) has more

recently embarked on a study of the modalities of collecting an international tax. On the nongovernmental level, the RIO report advocates international taxation as a means to achieve automaticity of transfers and redistribution of international income.

During the Seventh Session of the Law of the Sea Conference, the Delegation of Nepal introduced a proposal for revenue sharing and the establishment of a Common Heritage Fund. According to this proposal, the Fund's income would consist of (1) the revenues earmarked by the International Seabed Authority for it; (2) the revenues due from the exclusive economic zones of States members; and (3) the revenues from the continental margin beyond the 200 mile limit of the economic zone. The biggest item would obviously be the second, that is, "a share of the net revenues from the mineral exploitation of the seabed and subsoil of the exclusive economic zone" as further specified in the proposal. This means, above all, an international tax on offshore oil, which would run into billions of dollars.

Not only would such a tax assure the automaticity of transfers that development strategy has been striving for during the last two decades: it also would create a more workable financial balance within the international resource management system itself: i.e., the capital-intensive, and, at the beginning probably deficit-prone operations of the International Seabed Authority could be, largely, financed by a small part of the huge profits of the oil industry. There would indeed be nothing extraordinary in such a method, already widely applied at the national or corporate level; companies, engaged both in oil production and in metal mining commonly finance the deficits arising from the metal mining operations during the present period of crisis on the metal market, from the huge profits they make on oil production.

An ocean development tax could be a tool of substantial importance in development strategy. It also could, to a large extent, compensate landlocked and geographically disadvantaged States for the vagaries of geography that have been invoked in fashioning the iniquities of the exclusive economic zone.

#### 4. The restructuring of the U.N. System

The emerging Law of the Sea Convention (the Composite Text) provides a system of management for only one of the uses of ocean space, and that is deep-sea mining. For the other major uses -- the management of living resources, navigation, scientific research, environmental protection, the transfer of technology -- it provides a "code of conduct." The Text reveals an awareness, however, that this is not enough and makes repeated reference to, and demands on, "the competent international institutions." In some cases, these "competent institutions" already exist: COFI (FAO) for the living resources; IOC (UNESCO) for scientific research; IMCO for navigation; UNEP for the protection of the environment. In other cases -- transfer of technology, regional fisheries management -- they will have to be created. In any case it is clear that the existing organizations will have to be *restructured* to be able to assume the new required functions; and that restructured and newly established institutions must be *co-ordinated and integrated at the policy-making level*, providing for a forum where problems arising from the uses of the oceans can be discussed

by States *in their interaction* and including not only their *technical* but also their *political* dimensions.

During the Seventh Session, the Delegation of Portugal tabled a rather complex resolution, co-sponsored by 17 other Delegations from developed, developing, and socialist States, to give the necessary official impetus to this process which, more or less informally, is already in course, although the results of recent questionnaires, sent by the institutions themselves to Governments, have been disappointingly conservative.

"Considering that the implementation of the Convention on the Law of the Sea calls for an active and increased role of the appropriate international organizations with competence in ocean affairs..." the Portuguese Resolution states, "Recognizing that further strengthening of these organizations and increased cooperation among them are required, so as to allow Member States to benefit fully from the expanded opportunities for economic and social progress offered by the new ocean regime..." the Resolution calls on member States, on the Secretary General, the Specialized Agencies and other organizations of the United Nations, to take the necessary steps to achieve the needed restructuring and integration.

This restructuring and integrating of the marine-oriented part of the U.N. system inserts itself into the broad trend to "restructure the U.N. system," which it could influence and direct.

In conclusion, it is evident that marine resources and ocean management not only can make a major contribution to development strategy and North-South cooperation, but that, beyond this, the new institutional forms, being developed in the process, should be considered as *models* and *pilot projects* for the building of a New International Economic Order in general.